

USDA Forest Service

# URBAN FOREST CONNECTIONS

*webinar series*

Second Wednesdays | 1:00 – 2:00 pm ET

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



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Amherst*



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National Wildlife Federation*



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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



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Biodiversity

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**Habitat Loss and Alteration**

# 80% of Americans Live Here



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# The Urban Forest



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# The Urban Forest



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# The Urban Forest

Nest

Cavity nest



Nest

# The Urban Forest

**Nest**

**Flying  
insects**

**Cavity nest**

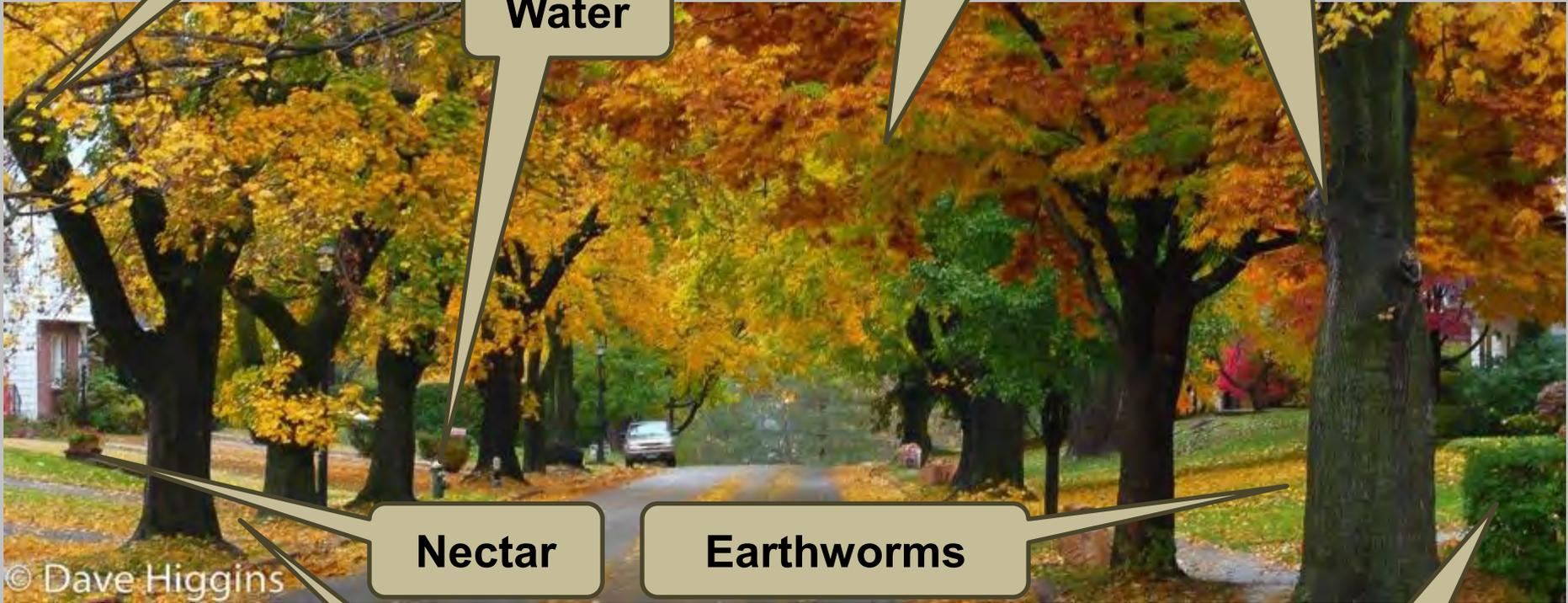
**Water**

**Nectar**

**Earthworms**

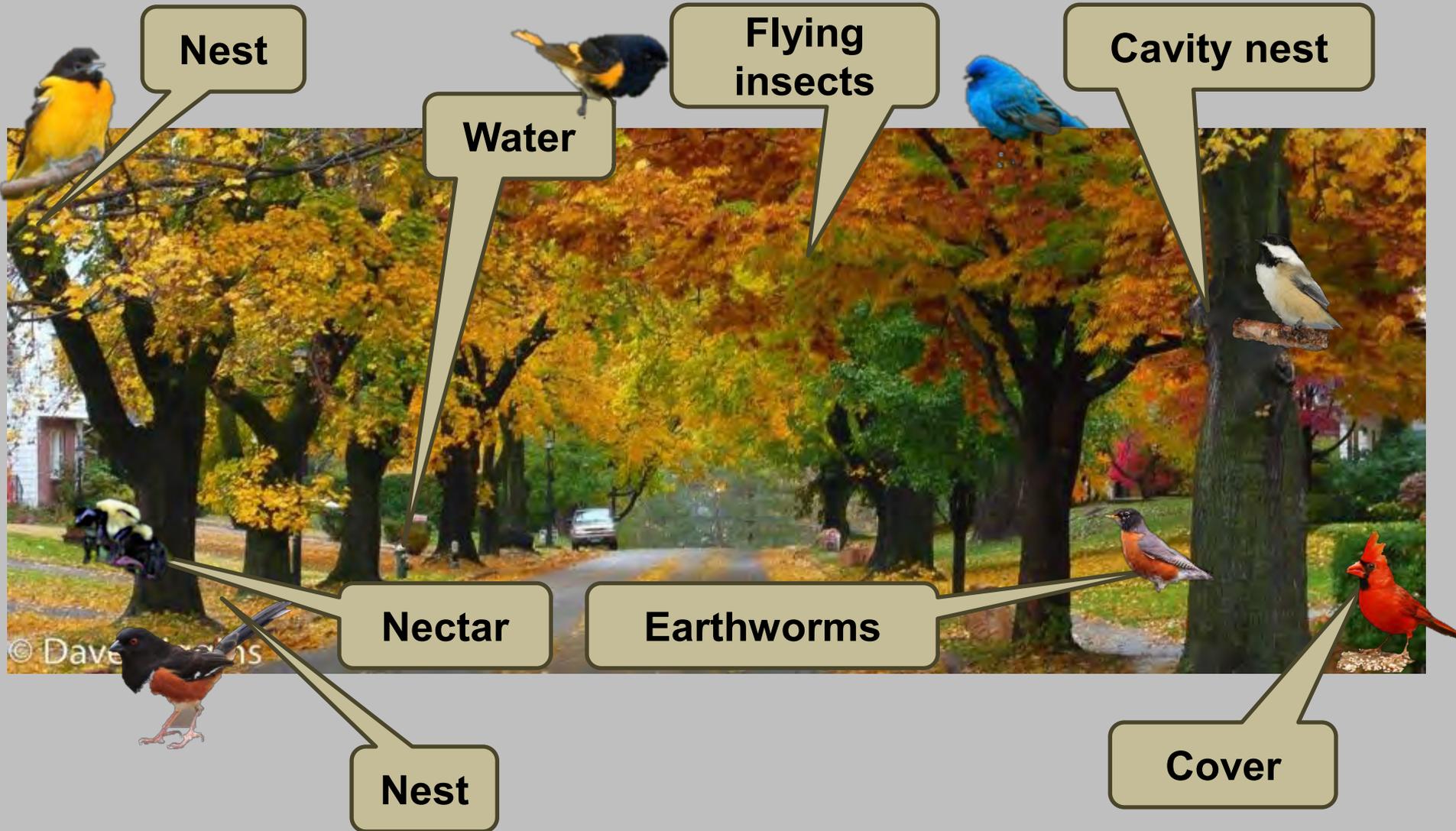
**Nest**

**Cover**



© Dave Higgins

# The Urban Forest



# Strategies for Enhancing the Urban Forest



Assessing  
Habitat

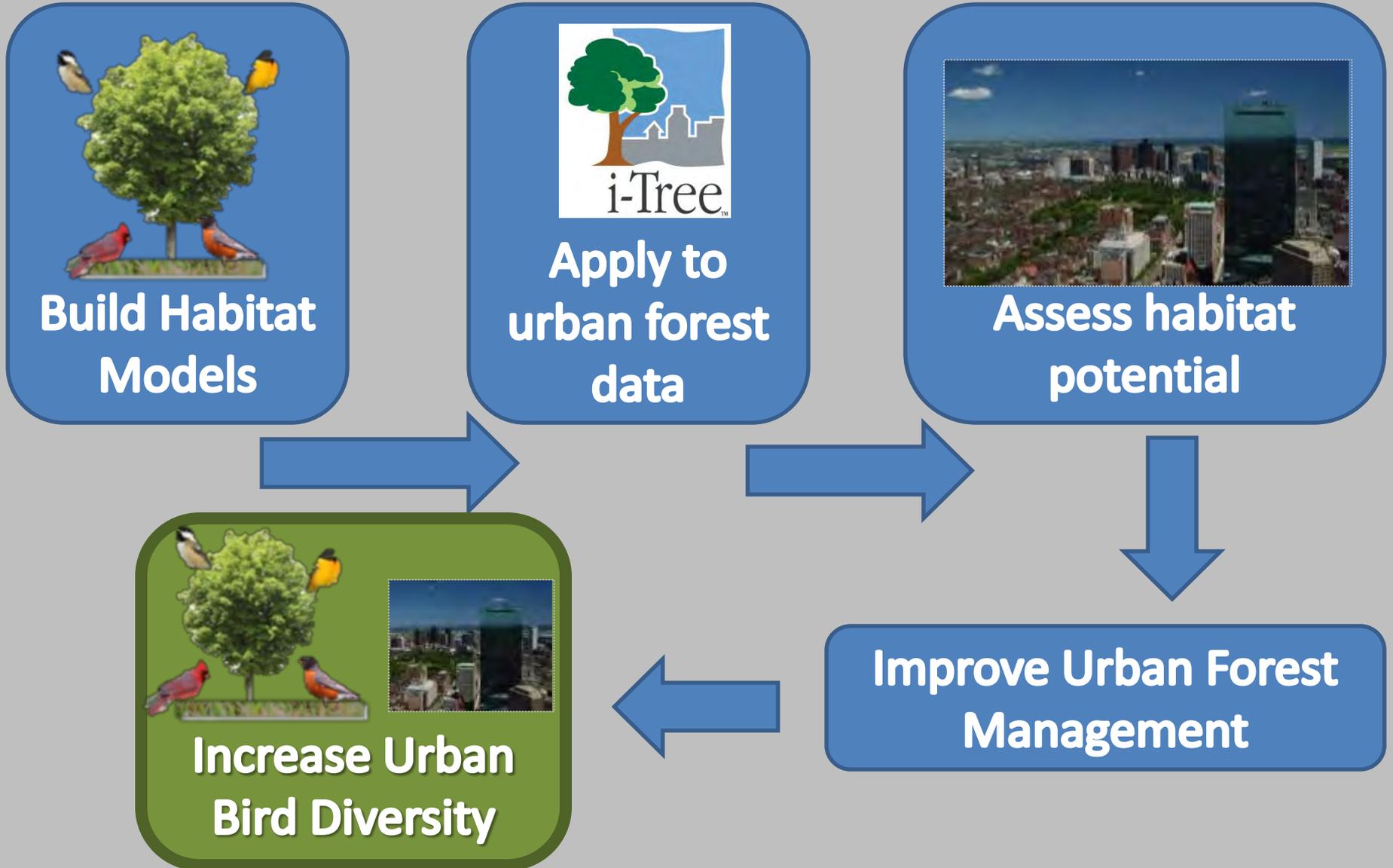


Conservation  
Partners



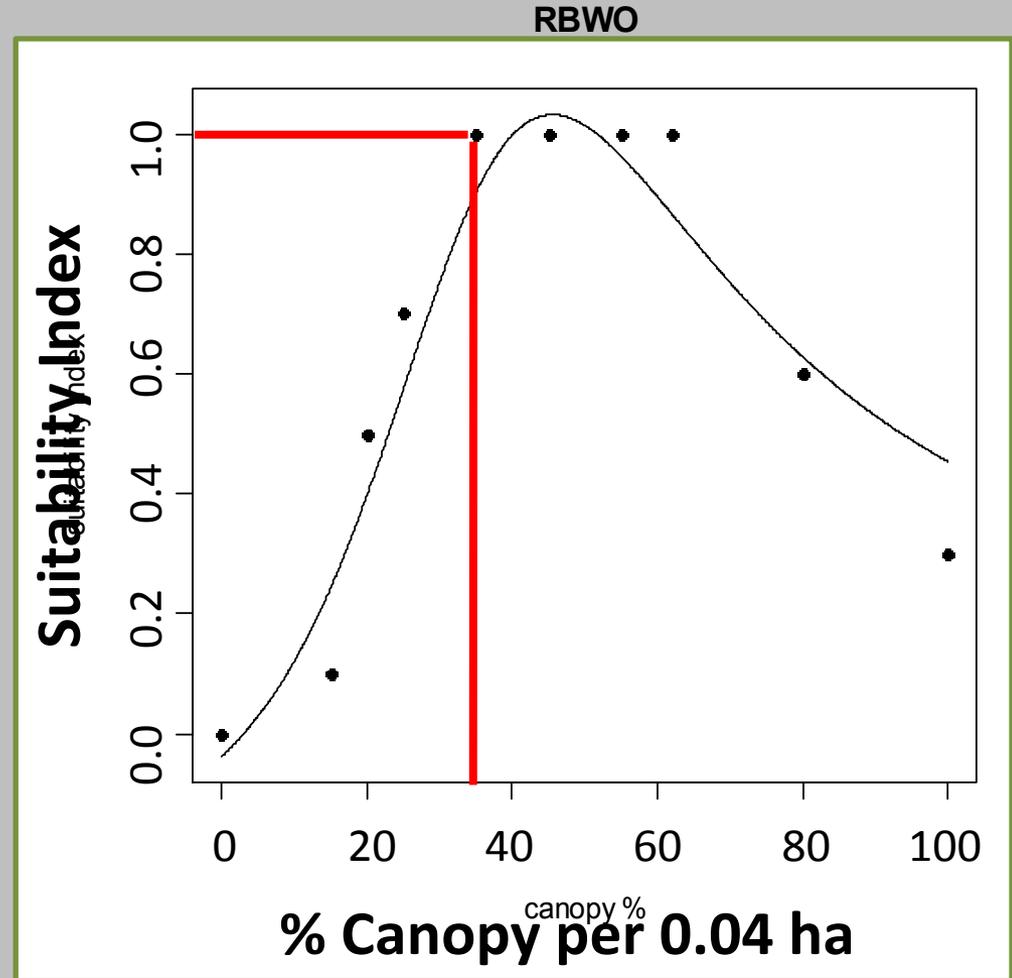
Creating  
Habitat

# i-Tree Wildlife





# i-Tree Wildlife





# i-Tree Wildlife



CITY	Canopy % (0.04 ha)	Lg Tree Density (0.04 ha)	Basal Area (m <sup>2</sup> / ha)	Deadwood Density (0.04 ha)
PHL				
NYC				
PHL				
NYC				



# i-Tree Wildlife



CITY	Canopy % (0.04 ha)	Lg Tree Density (0.04 ha)	Basal Area (m <sup>2</sup> / ha)	Deadwood Density (0.04 ha)
PHL				
NYC				
<b>OPTIMAL</b>	35-62%	>6	8-14	1-3
PHL				
NYC				



# i-Tree Wildlife



CITY	Canopy % (0.04 ha)	Lg Tree Density (0.04 ha)	Basal Area (m <sup>2</sup> / ha)	Deadwood Density (0.04 ha)
PHL	12.5%	0.68	1.91	1.26
NYC	19.5%	0.63	1.47	0.3
<b>OPTIMAL</b>	<b>35-62%</b>	<b>&gt;6</b>	<b>8-14</b>	<b>1-3</b>
PHL	75.5%	5.11	10.91	9.06
NYC	36.0%	2.12	4.57	0.85



# i-Tree Wildlife



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NYC (0.15)	19.5%	0.63	1.47	0.3
<b>OPTIMAL</b>	35-62%	>6	8-14	1-3
PHL (0.7)	75.5%	5.11	10.91	9.06
NYC (0.3)	36.0%	2.12	4.57	0.85



# i-Tree Wildlife



## Highlights

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



# 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 km<sup>2</sup>**

- 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



# Sustainability Begins at Home

Human Behaviors

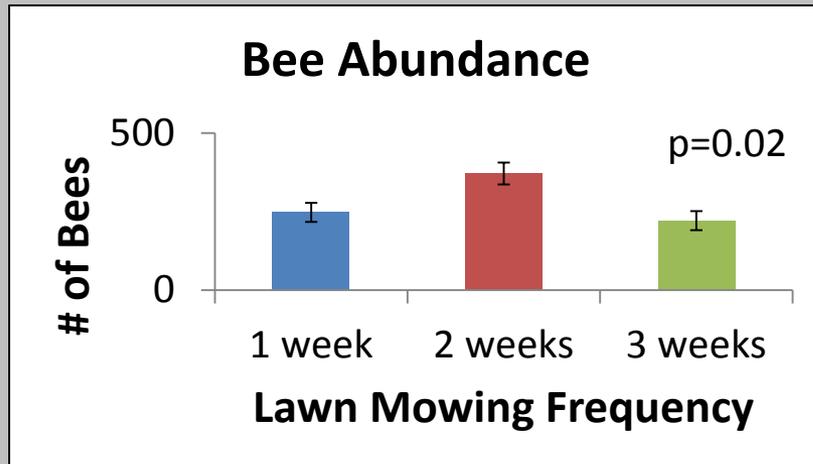


Ecological Processes  
Biological Outcomes

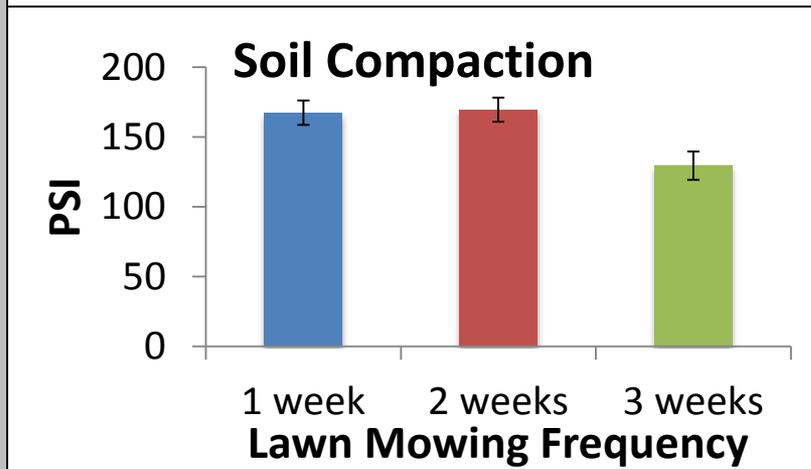
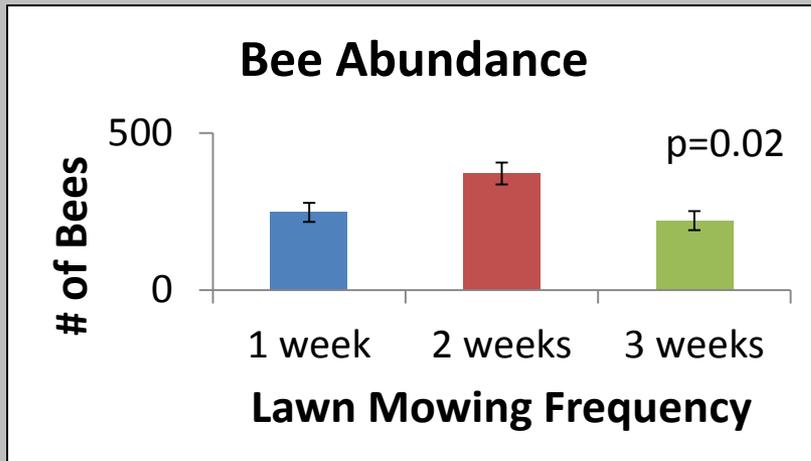


How does mowing frequency influence ecosystem services?

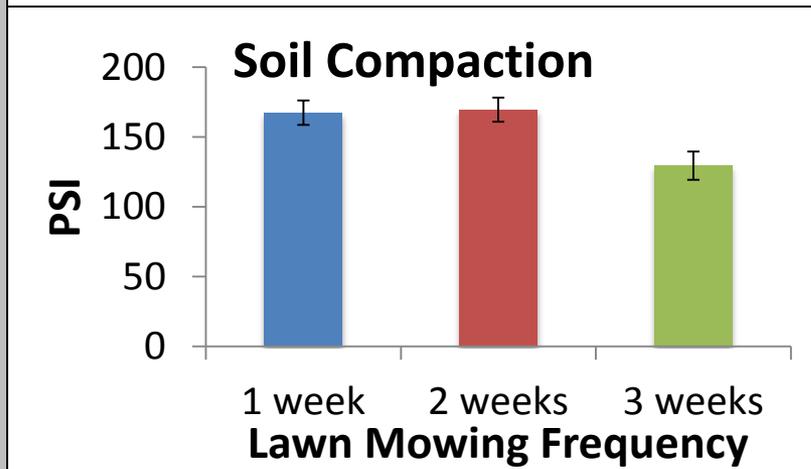
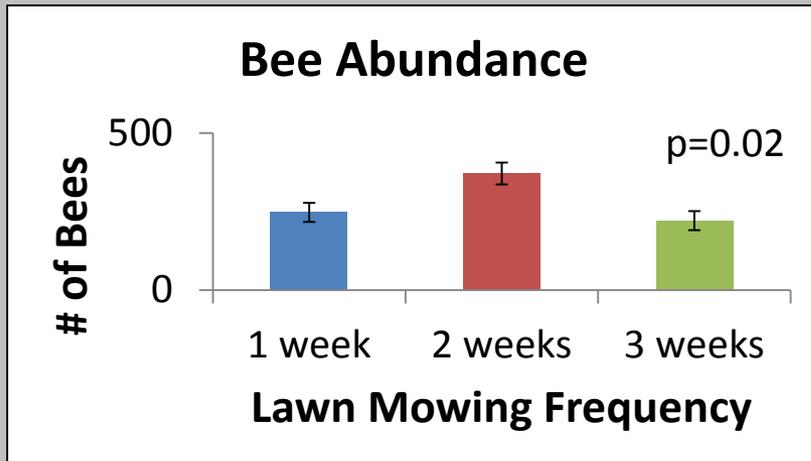
# Sustainability Begins at Home



# Sustainability Begins at Home



# Sustainability Begins at Home



## Mow less

- Supports beneficial insects
- Implications for stormwater mgt

# Final Thoughts

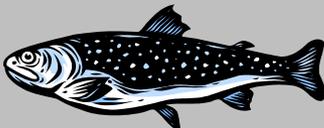
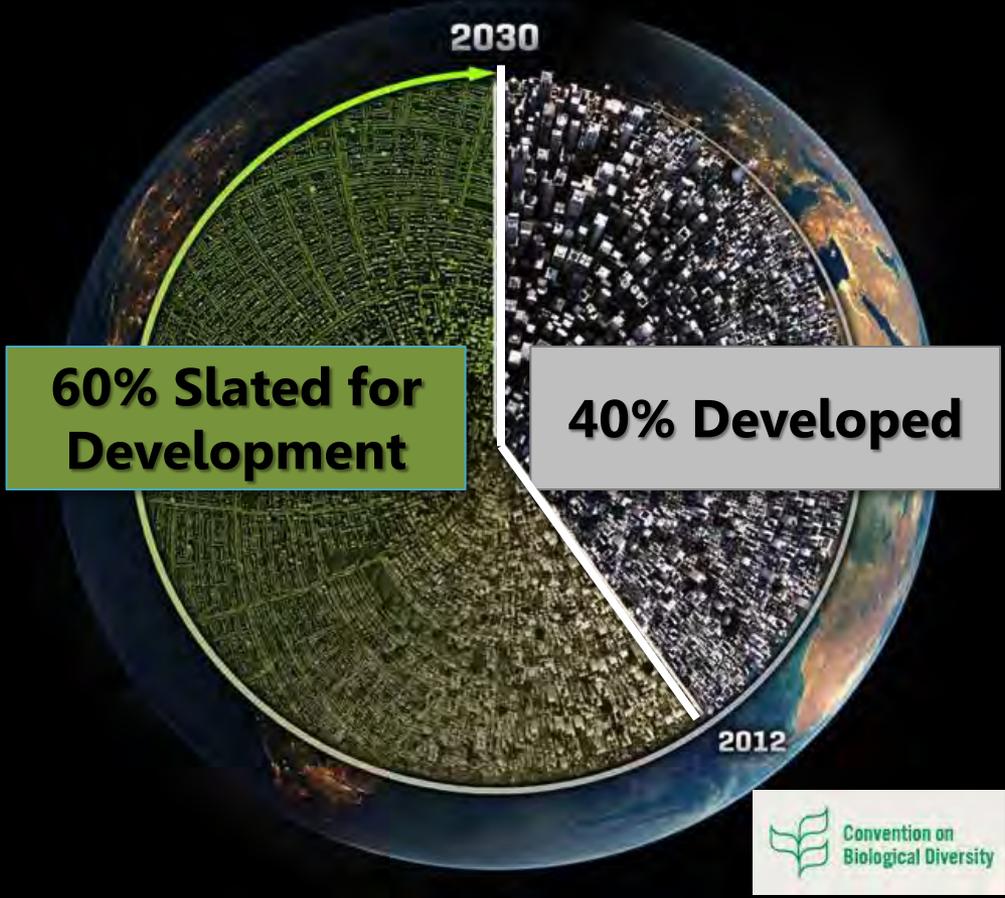


## Building public support

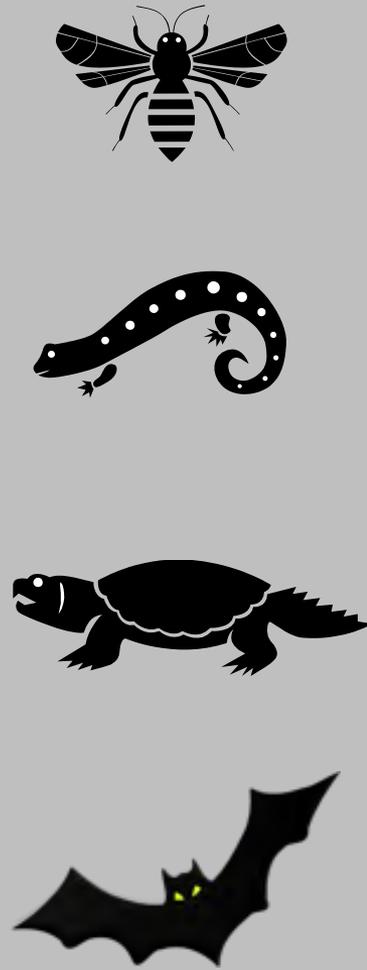
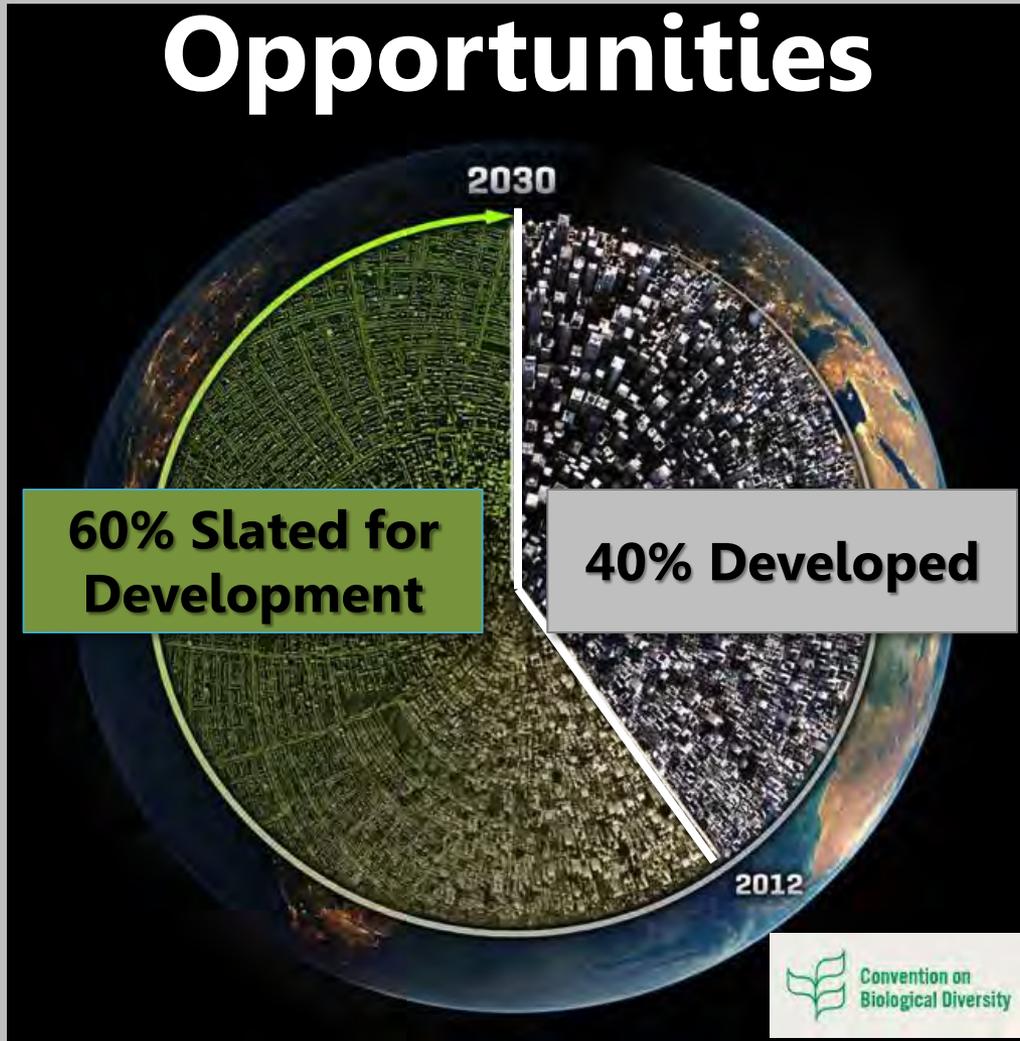
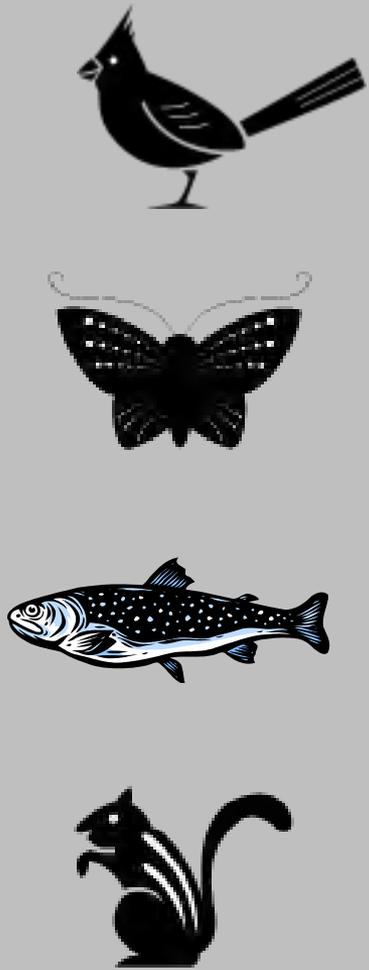
- Improves urban sustainability
- For the birds and the bees



# Opportunities



# Opportunities



SEES Fellows Program  
DEB #1215859



Keith Nislow  
David Nowak  
Peter Marra

Joan Milam  
David Bloniarz  
Alix Contosta

Steve DeStefano  
David King  
Erika Svendsen