



BIODIVERSITY



and its role in a healthy environment



Biodiversity -

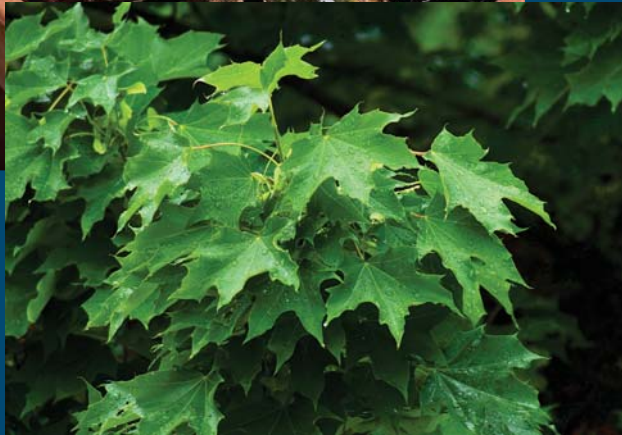
Where is it right now in city plans and policies?





Common
misconception:

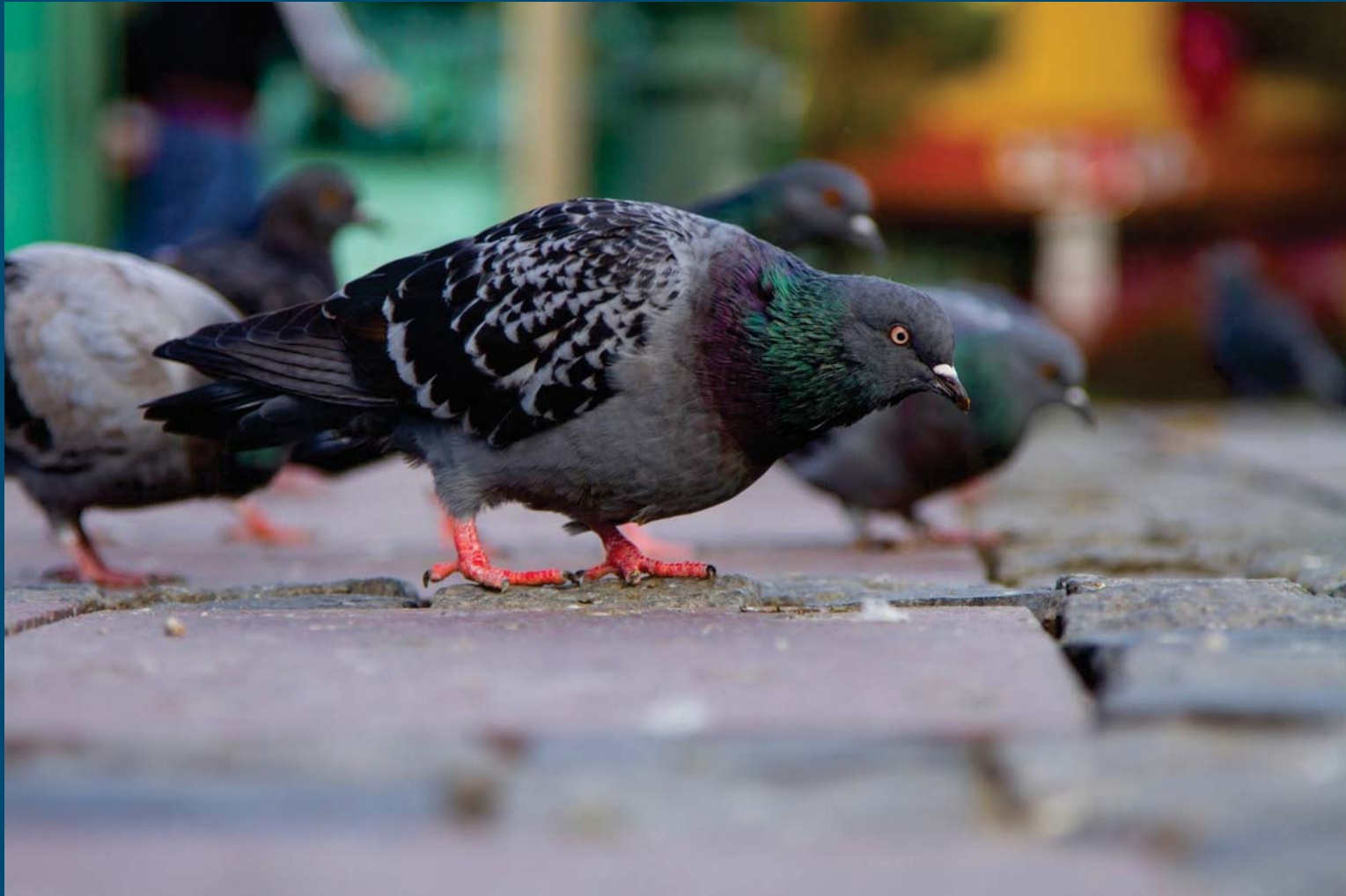
The more
species the
better, no matter
what!!



There are three types of biodiversity:

- Genetic - within species
- Species - between species
- Ecosystem - between ecosystems





Threats to biodiversity -

- Pollution
- Deforestation
- Habitat loss
- Non-native species
- Climate change



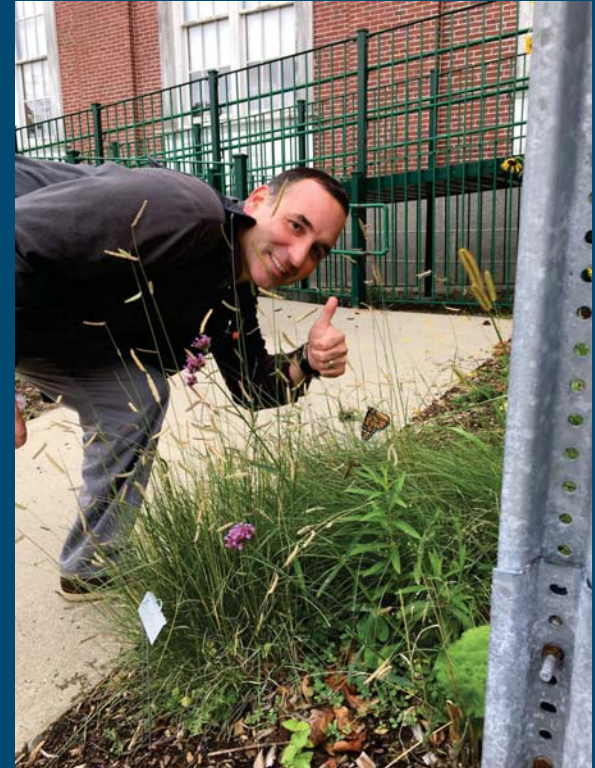
Ecological restoration and Ecological regeneration

A few local examples:

- Morse Kelley native pollinator garden
- Alewife Wetland in Cambridge
- City Hall Native Pollinator Garden

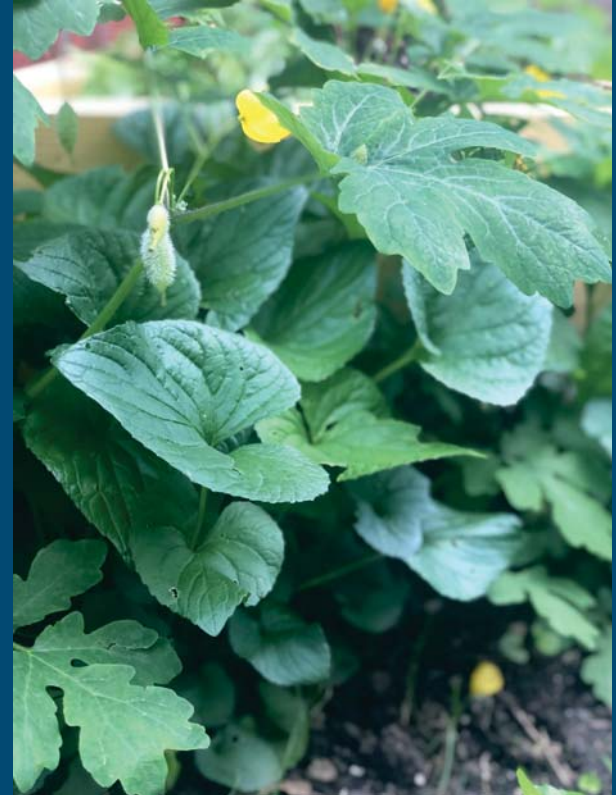
What else can we do?

- restore wetlands
- replant corridors and borders
- remove invasive plants
- provide intentional habitat and safe passage
- use *genetically diverse* native plants



Native plants

A plant species is native to the ecoregion where it has evolved in concert with soils, climate, fauna and other members of the plant community. This process of adaptation and evolution is ongoing and helps to perpetuate species even as conditions change. - *University of Maryland Extension*



Number of caterpillars found on different tree species

Native trees

Quercus (Oak) - 534 species

Prunus (Cherry) - 456

Salix (Willow) - 455

Betula (Birch) - 411

Populus (Aspen) - 367

Non-native trees

Ailanthus - 6

Ginkgo - 5


Forsythia - 1

Styrax (Snowbell) - 0

Zelkova - 0

From Doug Tallamy: Bringing Nature Home

Worldwide Recognition of Pollinator Decline

 **PennState**
College of Agricultural Sciences

Department of
Entomology

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Center for Pollinator Research

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Globally, pollinators are in decline

World-wide, pollinator populations are shrinking and several factors are contributing to this disturbing global trend.



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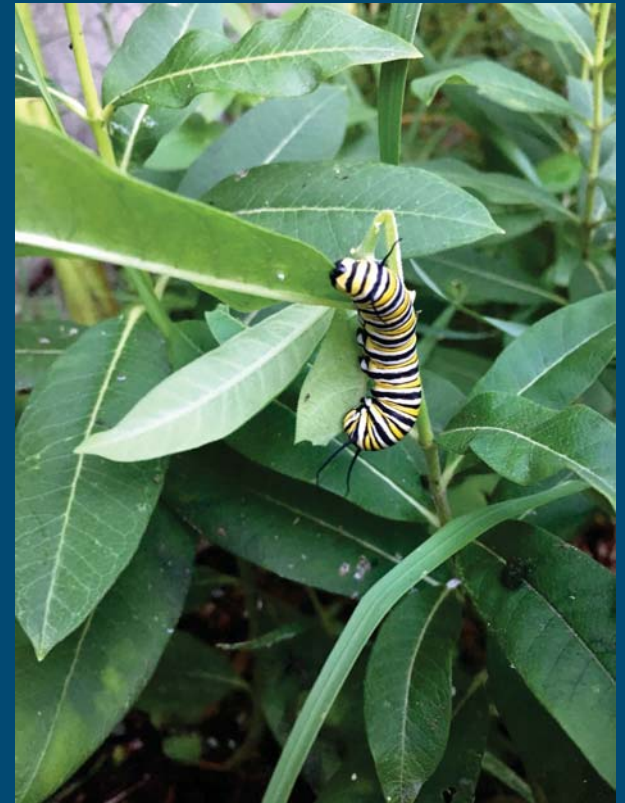
Reversing Pollinator Decline is Key to Feeding the Future



Resources for Continued Support and Education

Local groups working on biodiversity -

Earthwise Aware
Grow Native
Garden in the Woods
Somerville Conservation Commission (City Nature Challenge)
Green & Open Somerville
Native Plants of New England facebook group
Somerville Community Growing Center



Second only to habitat loss, the introduction of non-native or exotic species is a major threat to biodiversity - The Environmental Literacy Council



Restoring native plant habitat is vital to preserving biodiversity. Over the past century, urbanization has taken intact, ecologically productive land and fragmented and transformed it with lawns and exotic ornamental plants. - Audubon

If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago. If insects were to vanish, the environment would collapse into chaos. - E.O. Wilson



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