A few slides have been removed from the original presentation, as they could not stand alone without narration.

Saving the Planet One Plant at a Time

How a community's renewed love of native plants can contribute to large-scale biodiversity conservation

We are living in an era of unprecedented environmental change, largely attributed to human activity, coined the "Anthropocene." Conservation scientists are seeking solutions that can be rapidly applied and effective at large spatial scales. Scientists' reliance on the latest technology and advanced methods may make these solutions seem "out of reach" for much of the public. But, the truth is the application of this work is local, relies on active community participation, and is easy to integrate. By focusing on what we love, in this case through the creation of native plant gardens, we can literally bridge neighbors together, connecting ourselves to the greater landscape and providing invaluable contributions to wildlife conservation efforts.










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Saving the Planet One Plant at a Time

How a community's renewed love of native plants can contribute to large-scale biodiversity conservation

Legacy of Life

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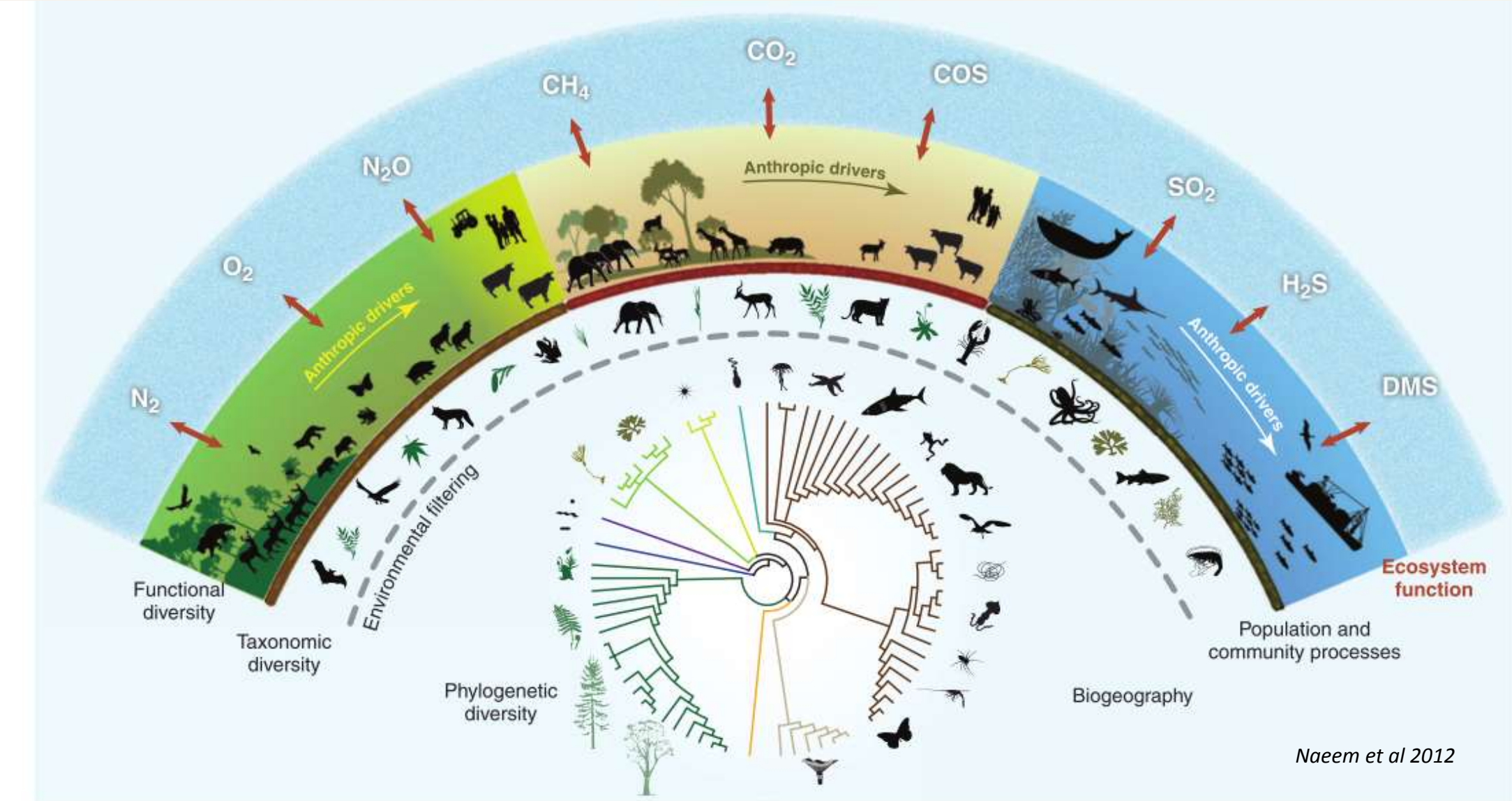
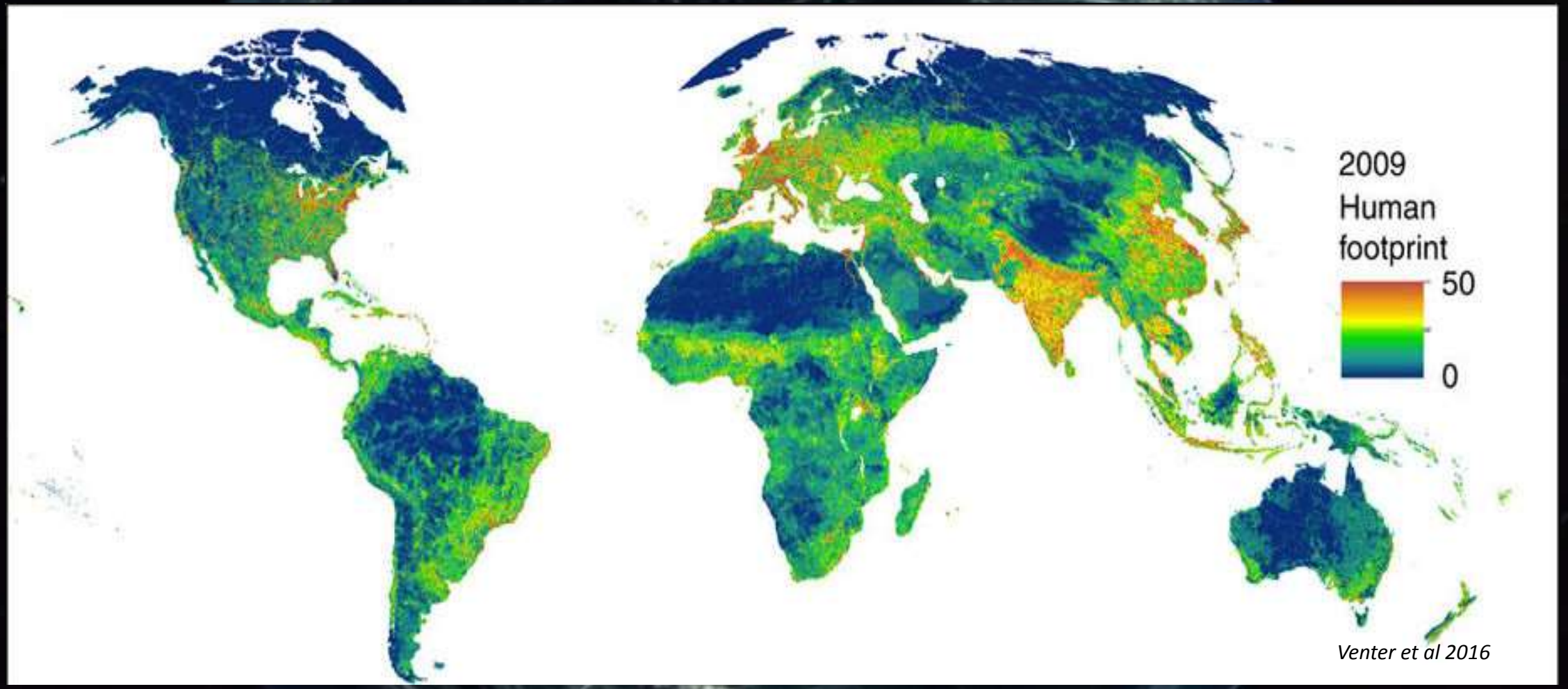
And Biodiversity is Necessary



Naeem et al 2012


MetLife

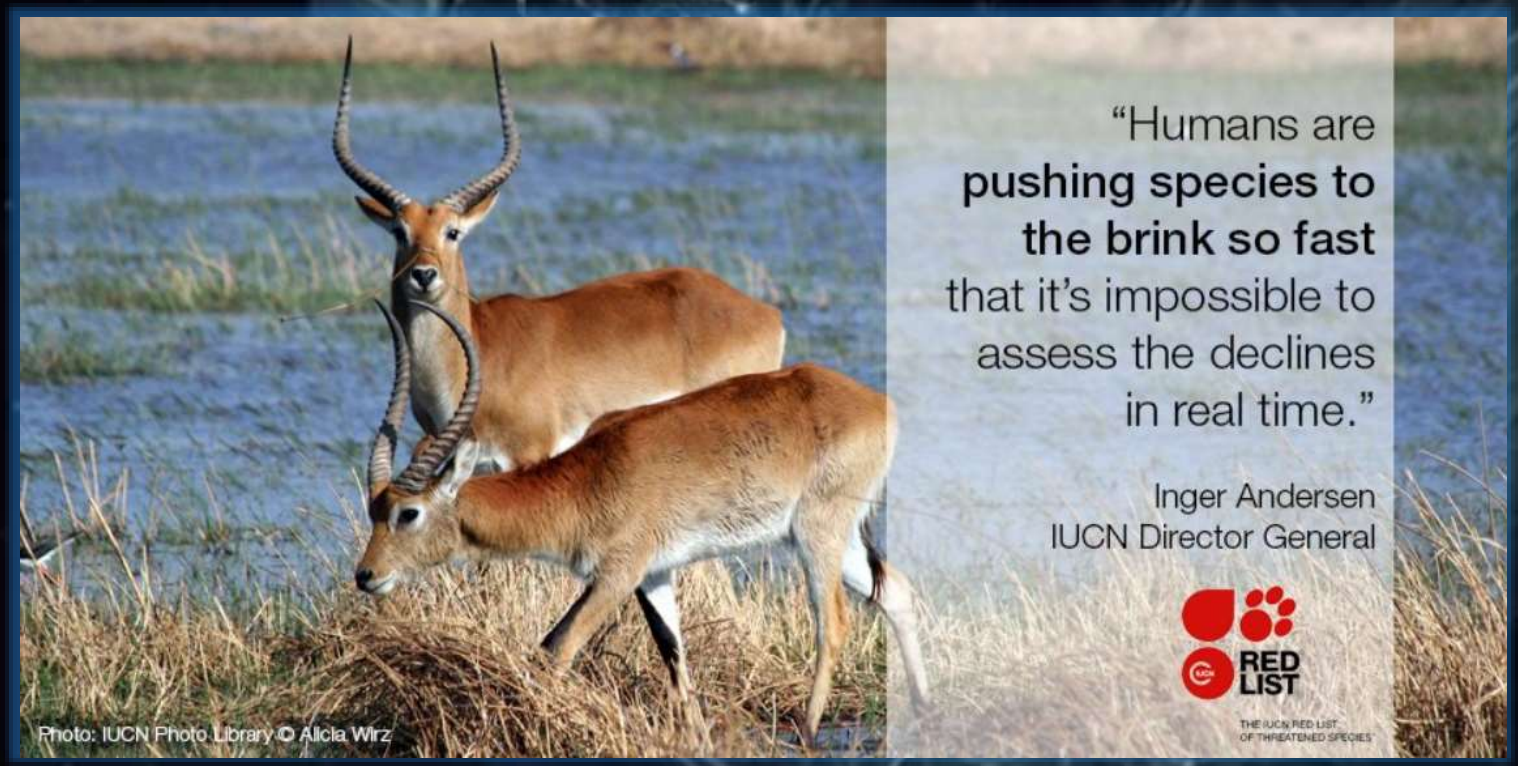
The Anthropocene



Venter et al 2016

Massive Biodiversity Losses

We are losing biodiversity… Fast



Why does this matter to HUMANS?

Ecosystem Function

The capacity of ecosystems to provide goods and services that satisfy human needs, directly and indirectly

Ecosystem Services

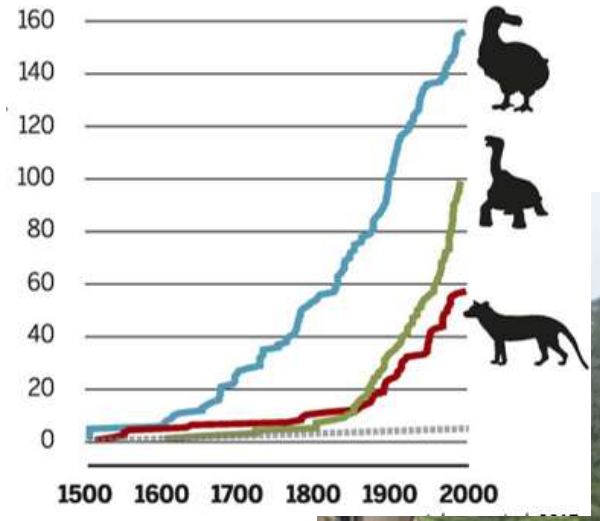
Contributions to human well-being

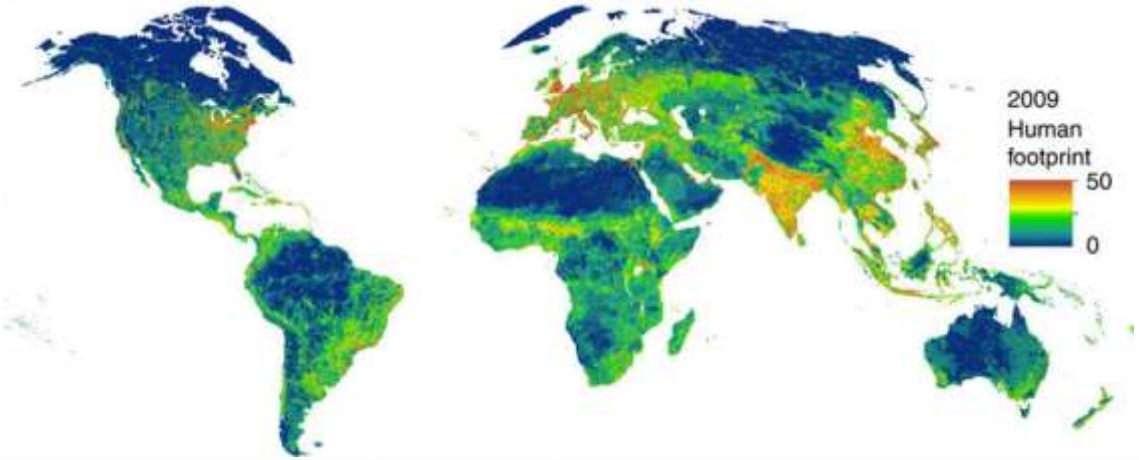
What are Ecosystem Function and Ecosystem Services?

Ecosystem Function

Ecosystem Service

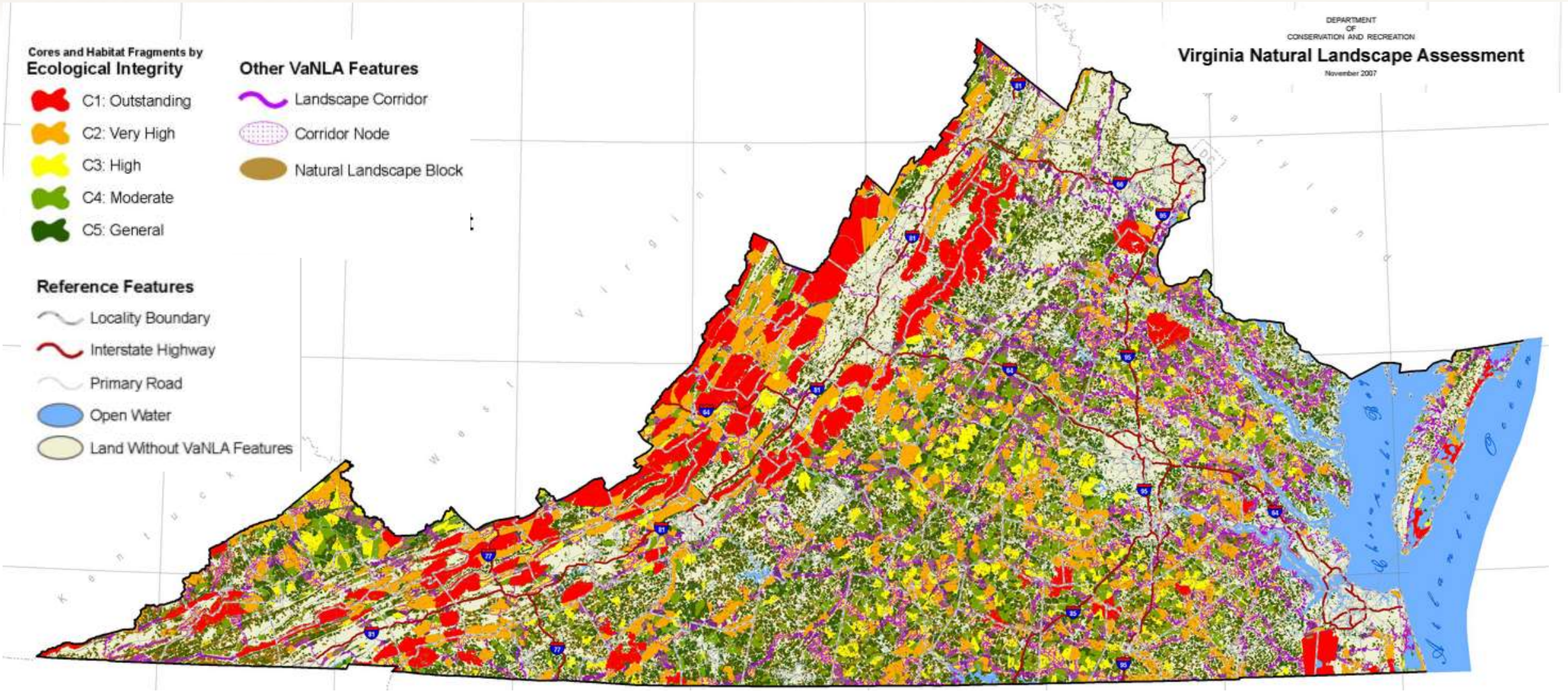
Conserve species <-> Conserve services





Our quality of life is tied to the environmental health of where we live.

Our Reality



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Innate Curiosity & Love of Nature

Obstacles to Conservation – Related Action

Conversion of natural land to residential and commercial development is the primary mechanism by which habitat is lost permanently in Virginia.

Call to Action

Hope springs eternal in the human breast;
Man never is, but always to be blessed:
The soul, uneasy and confined from home,
Rests and expatiates in a life to come.

— *Alexander Pope, An Essay on Man*

Obstacles to Conservation – Related Action

Do What you LOVE!

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Why “go Native”?

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What is a Native Plant?

What is the source of this plant?

Is this plant native to my region?

Was this plant grown from local stock or does the plant have a local origin?

Am I gardening in close proximity to a natural area? Is my planting for restoration?

http://vnps.org/conservation/faq/

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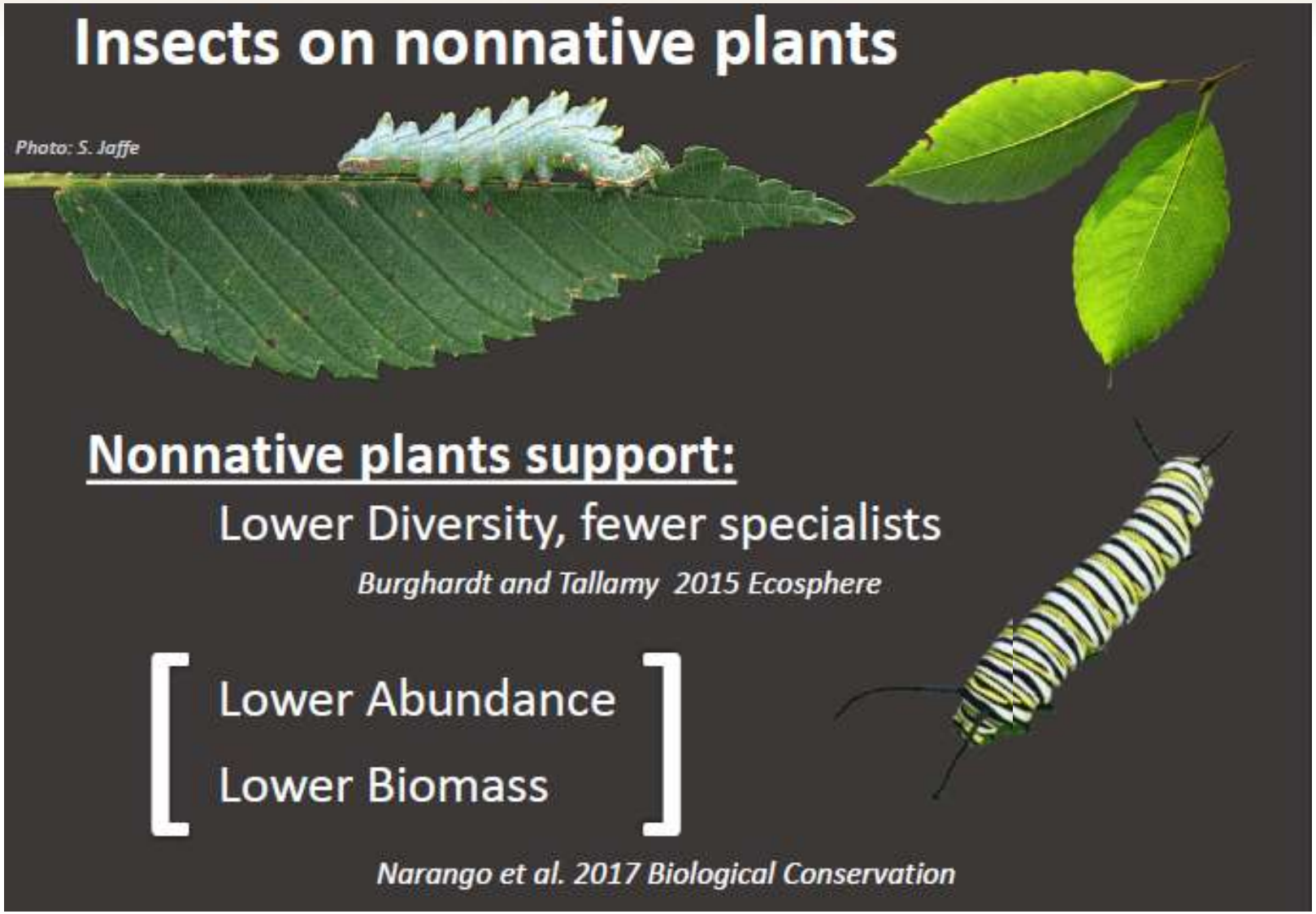
Science!


Nonnative plants reduce reproductive success of an insectivorous bird
Desiree L. Narango, Douglas W. Tallamy, University of Delaware
Peter P. Marra, Smithsonian Migratory Bird Center
Smithsonian Conservation Biology Institute
@DLNarango

Making Connections…



How do nonnative plants affect the relationship between plants, insects, & breeding birds?

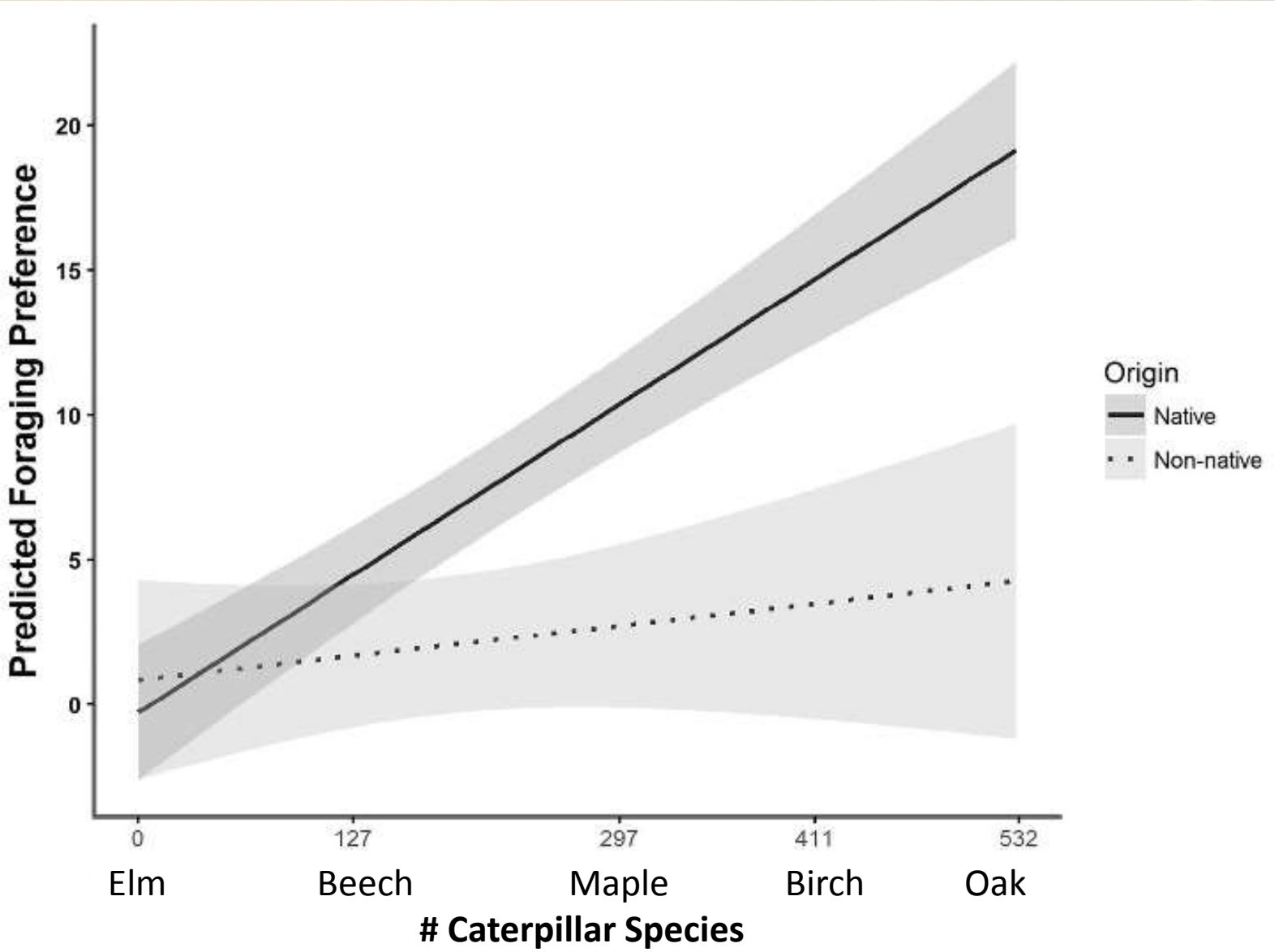
Nonnative plants support fewer high quality prey (caterpillars)

Nonnative plants reduce population growth in chickadees

- Low reproduction but not survival

To support avian populations, homeowners should plant and retain native, insect producing plant species

Native Preferences



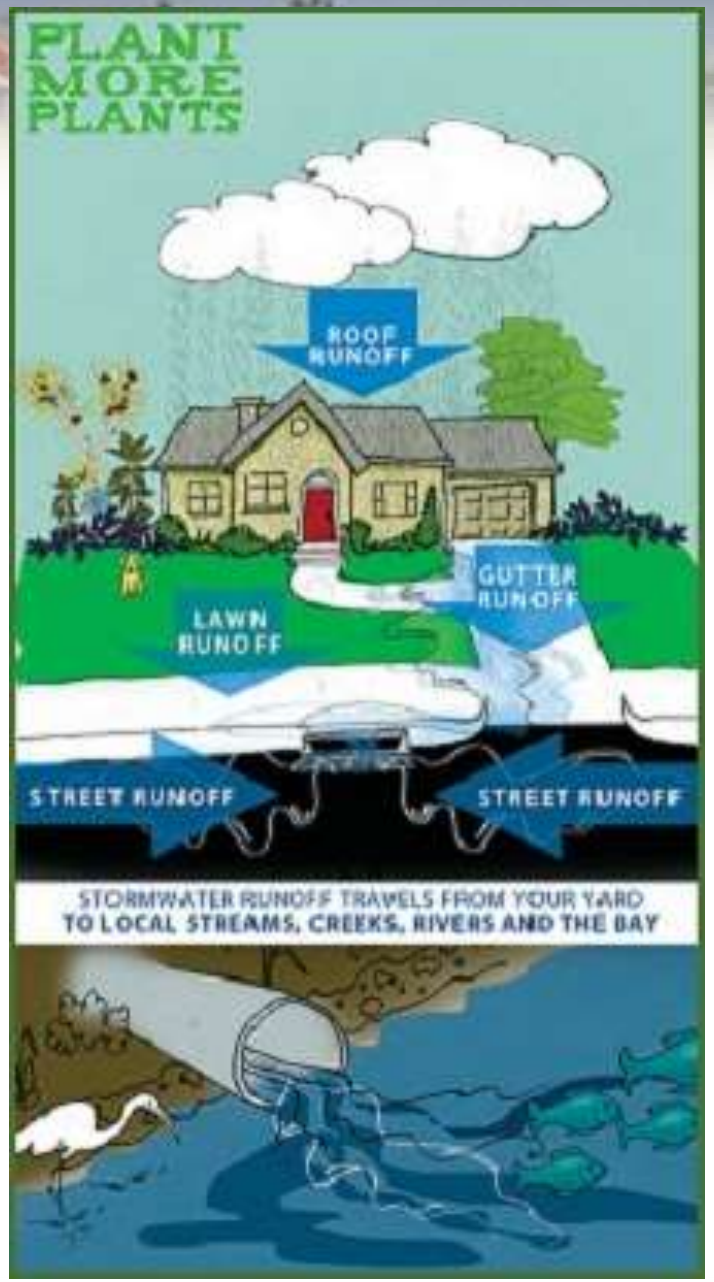
Relationship between

- *total number of caterpillar species and*
- *foraging preference of chickadees*

in Washington D.C. residential yards.

It's catching on!

Benefits of Native Plants

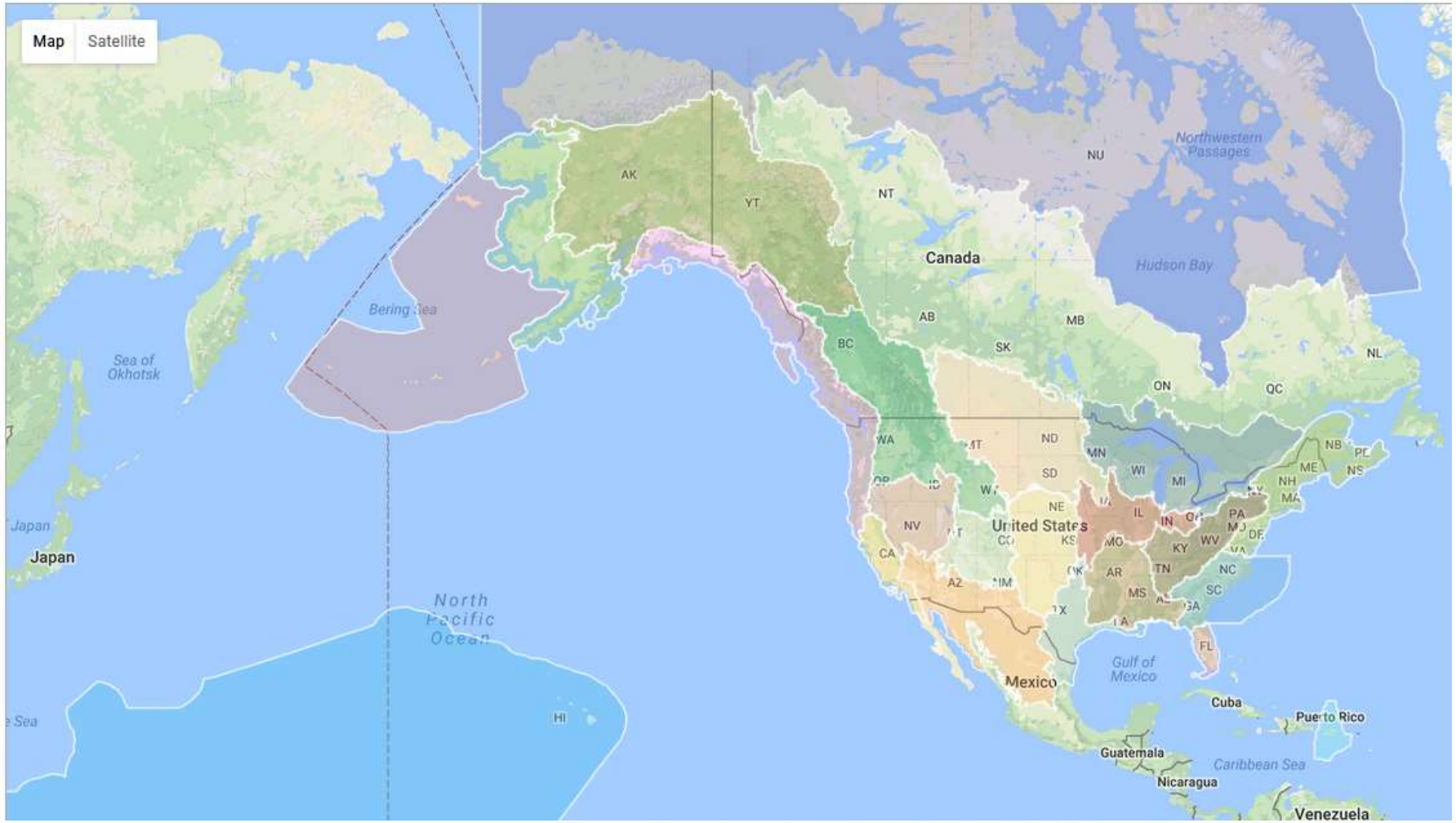


It's catching on!

- ***Seeds for Education Grant Program***
- ***Virginia Conservation Assistance Program***
  - Conservation Landscaping.
  - Rain Gardens
  - Dry Well
  - Vegetated Swales
  - Bioretention
  - Infiltration Trench
  - Impervious Surface Removal
  - Porous Pavement/Pavers

Address the problem at a bigger level.

Find my Landscape Conservation Cooperative



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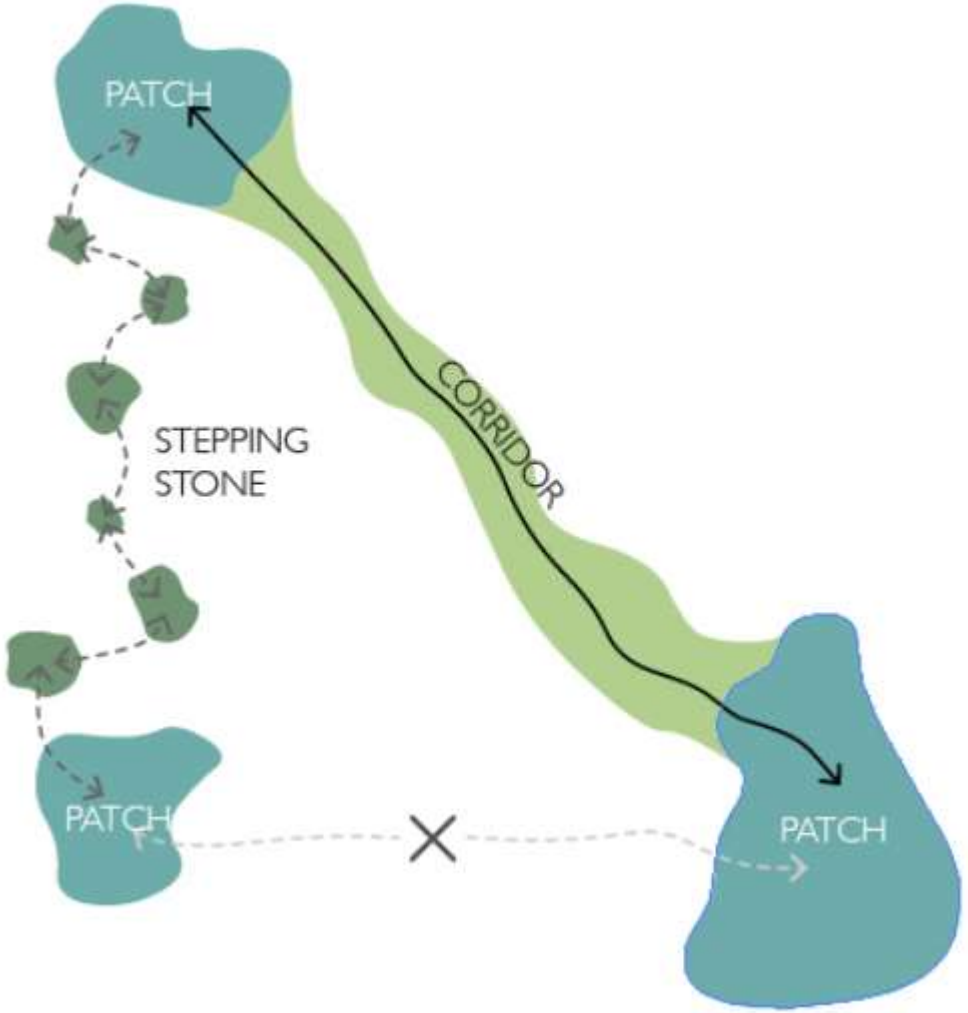
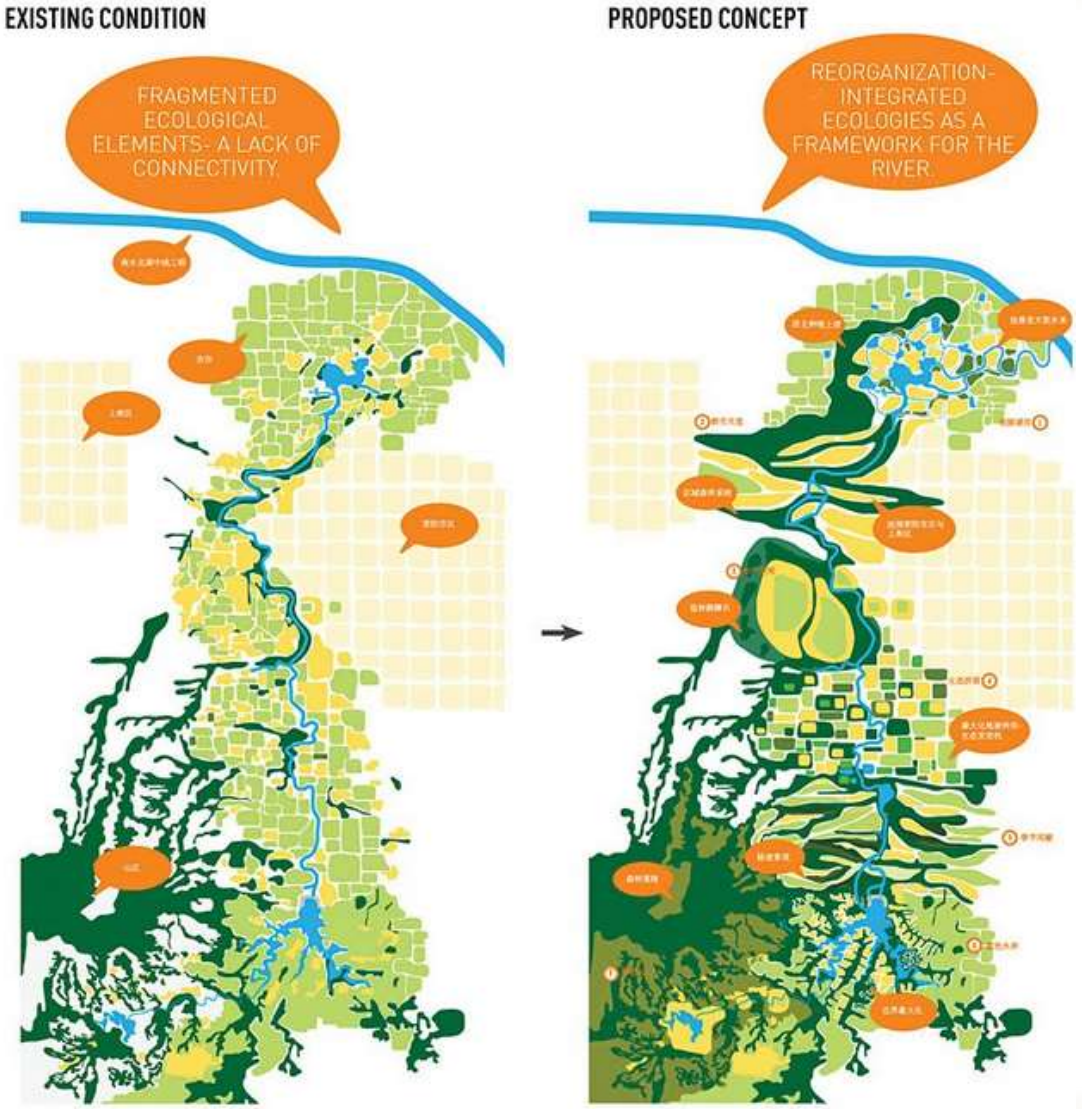
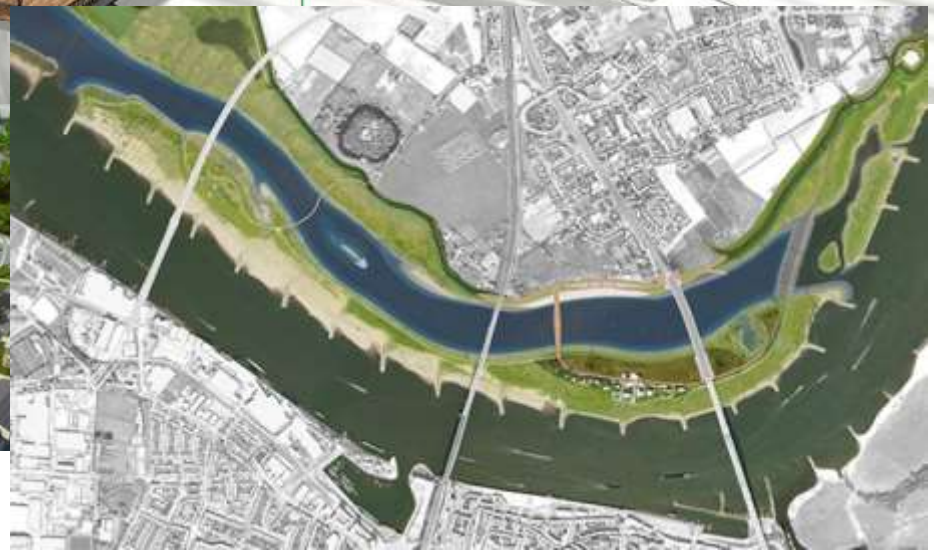
Landscape Connectivity





A Paradigm Shift



The Wildlife Value of A Messy Garden

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The Changing Landscapes Initiative

Our goal: To preserve northwestern Virginia's natural areas and cultural heritage and their contribution to quality of life for current and future generations of people and wildlife.

Obstacles to Conservation – Related Action

Science informed policy change requires the sharing of knowledge across disciplines, geography, and jurisdiction

CREDIBILITY

SALIENCE

LEGITIMACY

Cash et al 2002

Our Process

1 DESCRIBE THE LANDSCAPE

Recent Trends

Poorly Planned Growth

Planned Growth

Balanced Growth

2 DEVELOP SCENARIOS

3 MODEL POTENTIAL FUTURES

4 GUIDE REGIONAL PLANNING EFFORTS

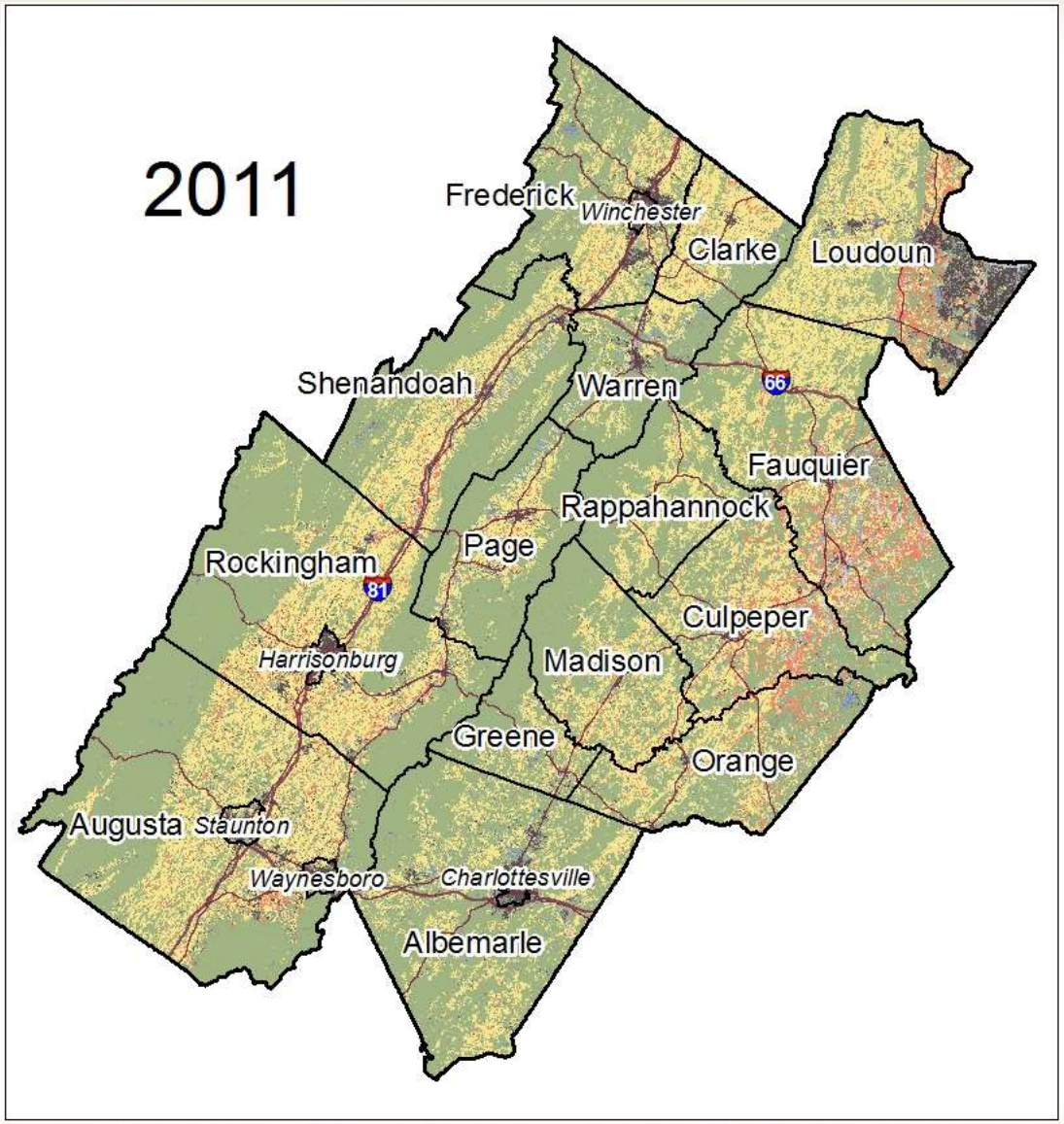
Realized Future Landscape

Stakeholder informed scenarios

Visualizing potential futures

Land Use Change Modeling

Understanding Potential for Change

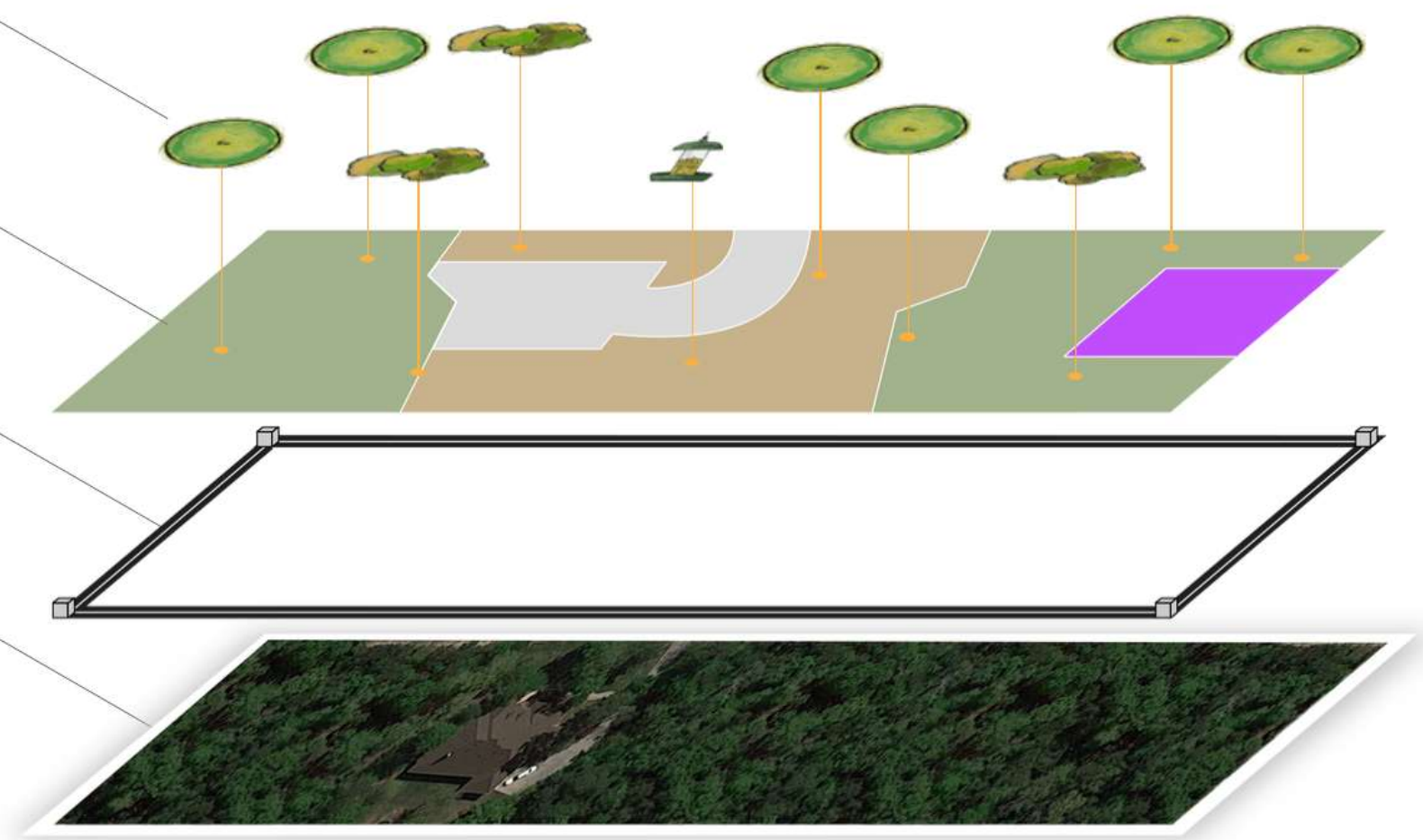


The responsibility is on us as individuals

My Place

Yardmap.org

ANATOMY OF A HABITAT MAP



Habitat Network powered by yardmap | The Nature Conservancy | The Cornell Lab

http://app.yardmap.org

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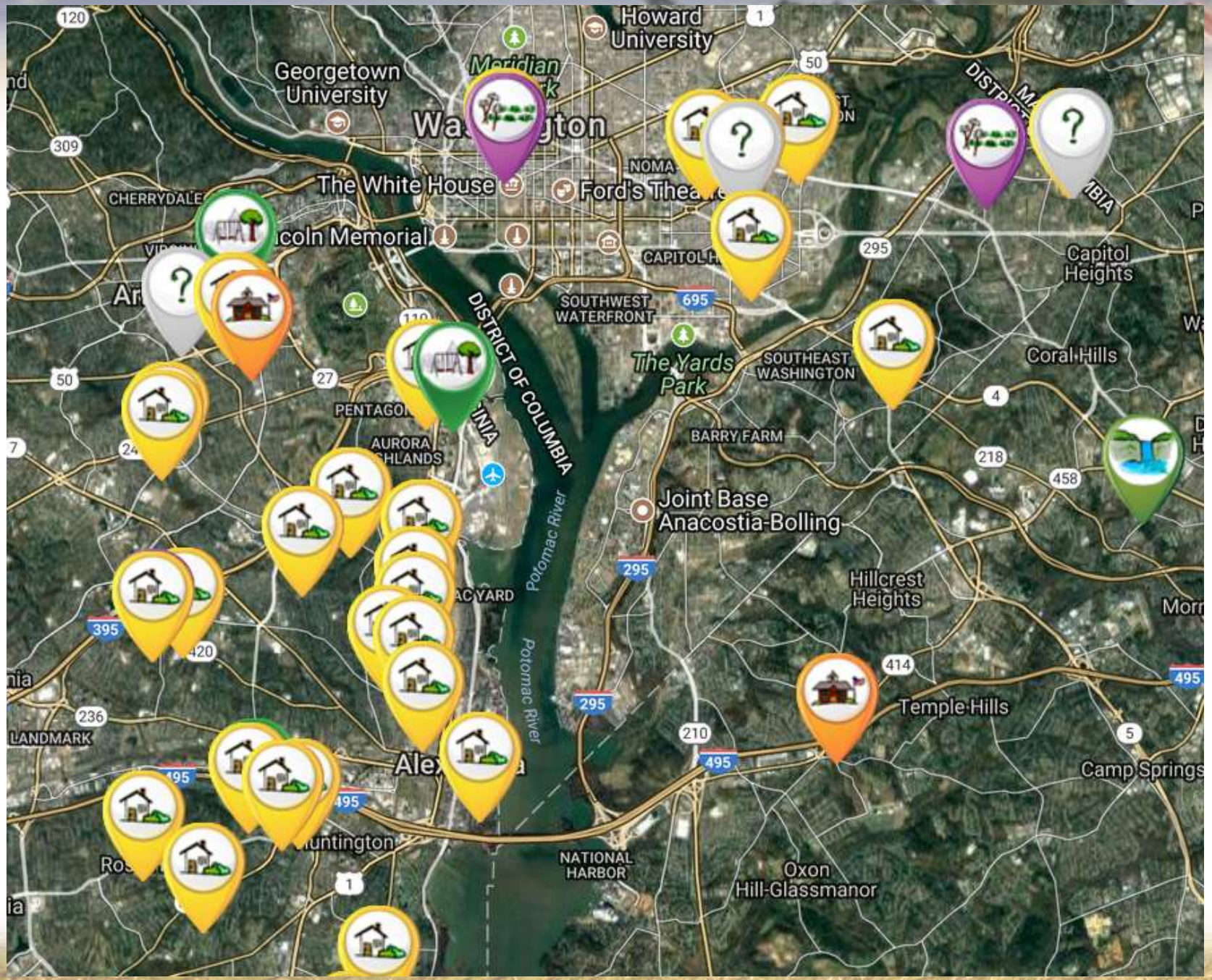
1+1

By nurturing what we love, native plants, we can begin a paradigm shift.

****Build bridges***

****Connect people.***

****Connect landscapes***



"By creating a native plant garden, each patch of habitat becomes part of a collective effort to nurture and sustain the living landscape for birds and other animals."

- Audubon.org

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Sources

- Yard Map
  - http://content.yardmap.org/learn/wildlife-value-of-a-messy-garden/
  - http://app.yardmap.org/map#!/map//siteexplorer/my-sites-list/0/habitat/list
- My habitat at home
  - https://www.youtube.com/watch?v=VDiTMcxCp0s
- PhD student met at Emerging Scientists
  - http://desireelnarango.weebly.com/research.html
- Timelapse of region since 1984
  - https://earthengine.google.com/timelapse/