

# Biophilic DC

Nature in the Heart of the City

Stella Tarnay

**BEEAC - MWCOG**

Oct. 19, 2017









Photo: Chris Weiss





Photo: Chris Weiss







# Biophilia:

“Love of Life” “Friendship with the living world”

*The innate human urge to affiliate with other living species*



Pic: Rick Friedman for The New York Times



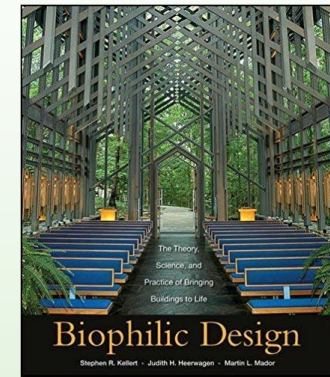


Pic: Wicoff Design Studio



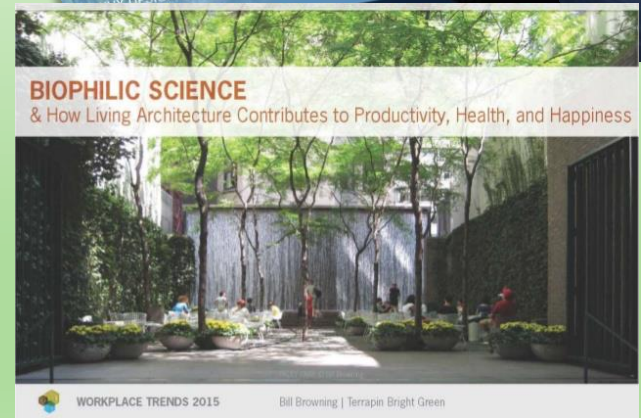
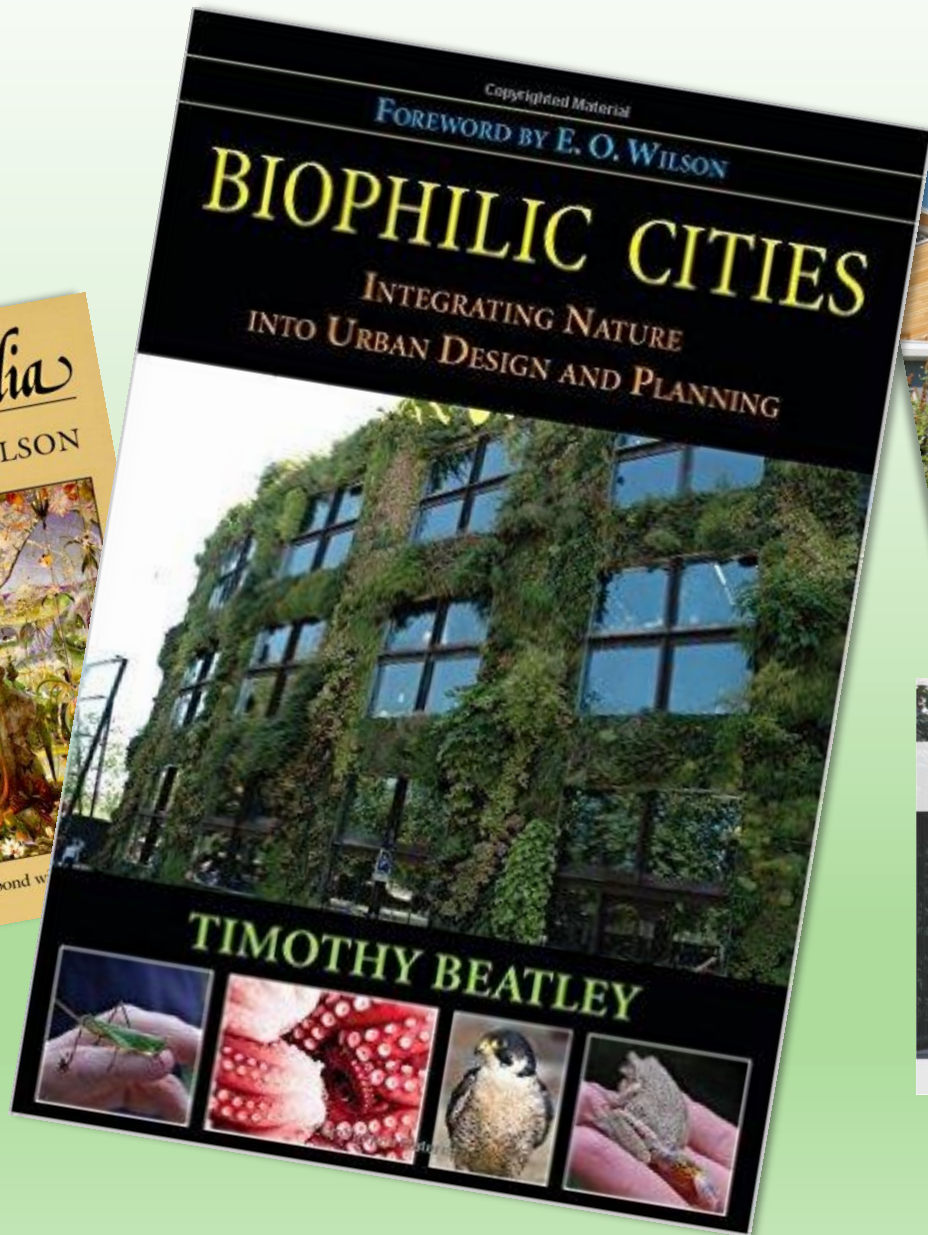
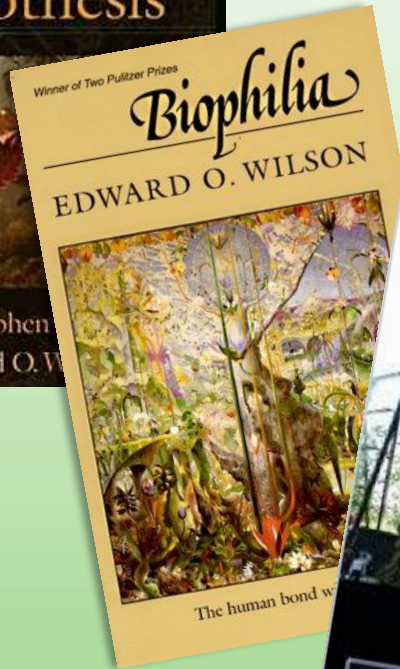
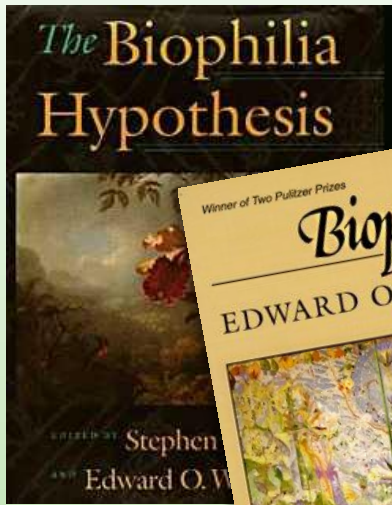






Thorncrown Chapel  
by E. Fay Jones







# Cities as Hubs of Nature – new realities

- An urbanizing world—over 50% of humans on planet live in metropolitan areas and growing—their primary experience of nature will be in city.
- In some cases cities are repositories of biodiversity. Conservation has moved to the city.





Community and Public Health (Toronto)



# Biophilic Cities – a growing understanding

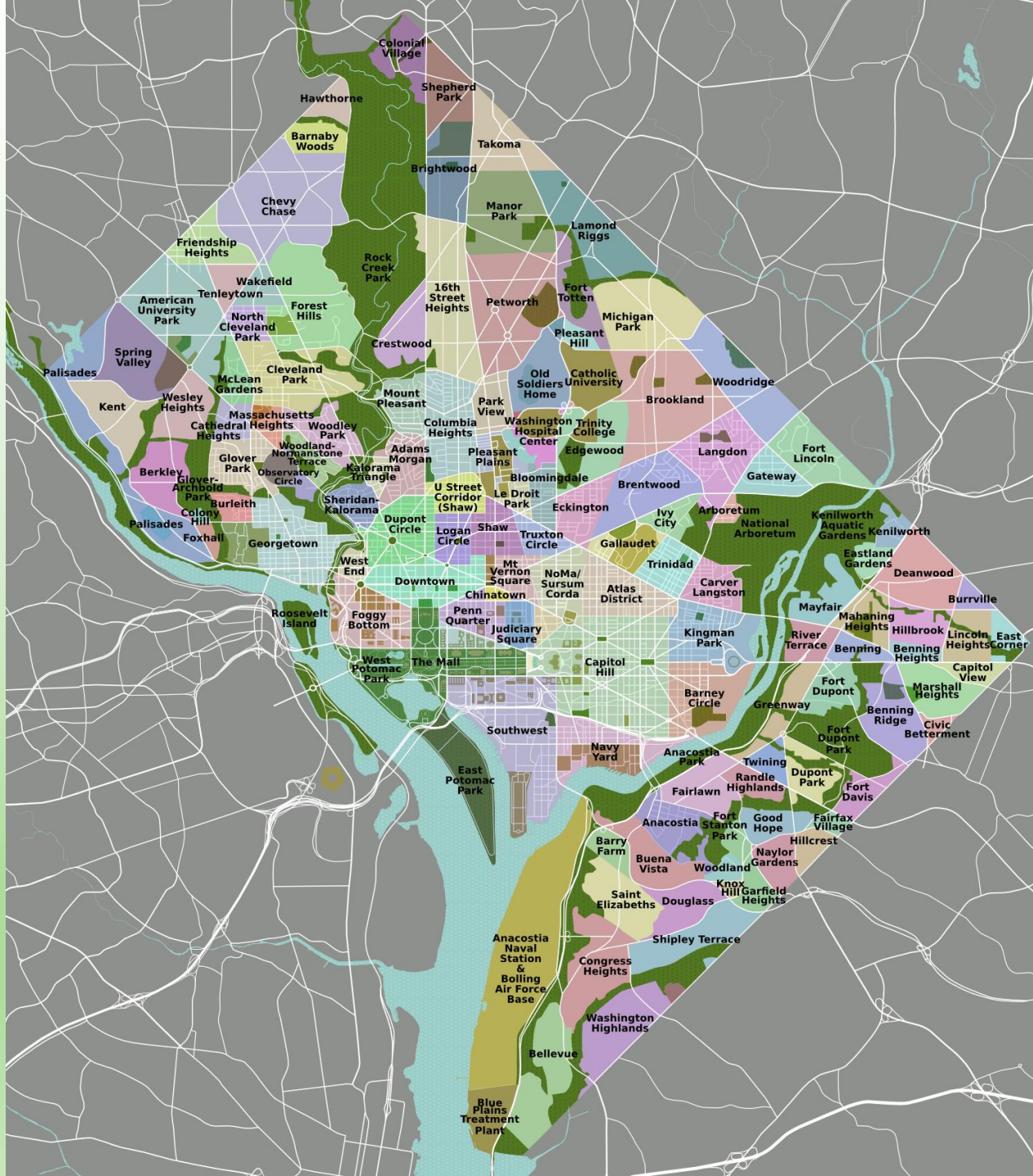
Biophilic Cities are cities that contain abundant nature; they are cities that care about, seek to protect, restore and grow this nature, and that strive to foster deep connections and daily contact with the natural world. Nature is not something optional, but absolutely essential to living a happy, healthy and meaningful life.



*Tim Beatley, Founder, Biophilic Cities Network*





















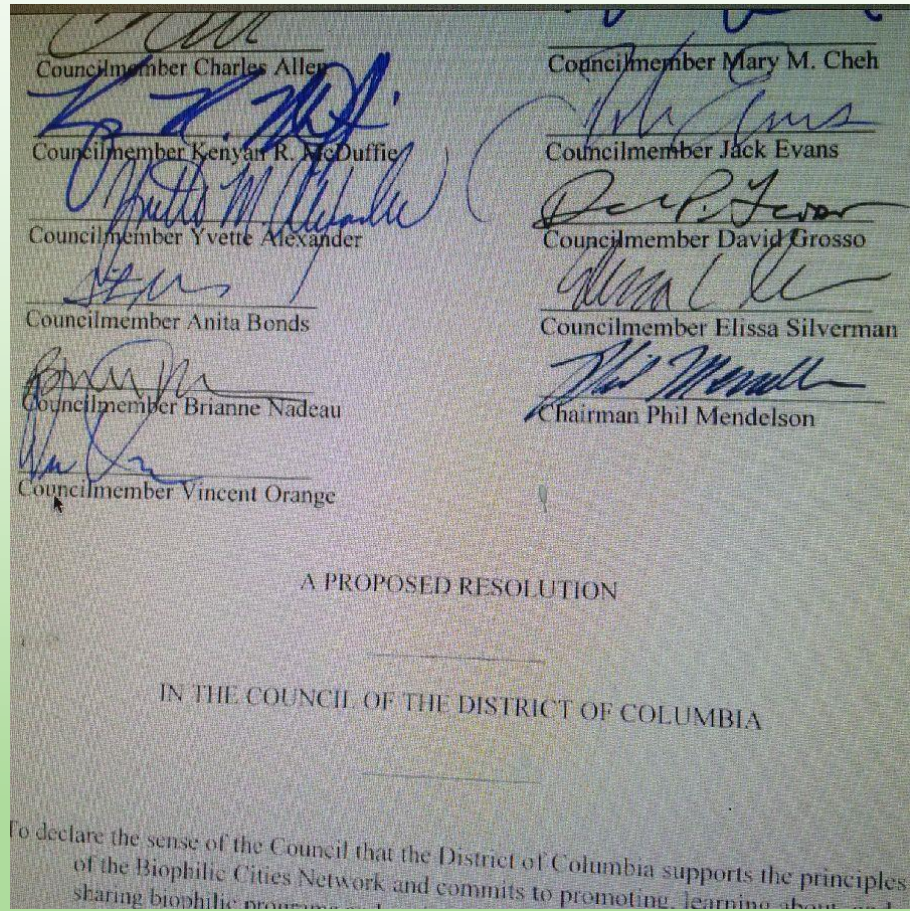




# Biophilic DC Working Group

- **Vision.** We envision a Biophilic DC:
  - that supports the health and wellbeing of its people
  - whose residents—especially children—have equal access to nature all the benefits that entails, and
  - where the ecologies and species we share our city with thrive
- **How.**
  - Develop culture of engagement with nature
  - Partner and collaborate across disciplines to promote biophilic policies and practices – Pilot projects? Initiatives? Research?
  - Public sector engagement







# District of Columbia

## Sense of the Council on Biophilic Cities

### Resolution of 2015



To declare the sense of the Council that the District of Columbia supports the principles of the Biophilic Cities Network and commits to promoting, learning about, and sharing biophilic programs and projects with other participating municipalities, to supporting urban biodiversity, and to creating opportunities for all District residents to connect to nature.







**BIOPHILIC CITIES** | MAY 23 | 4:00 - 6:30PM  
NATURE AT THE HEART OF UDC - STUDENT CENTER  
DESIGN & PUBLIC POLICY | VAN NESS METRO

How can nature-based design and policy support biodiversity and human health in our city? Will a Biophilic DC be a more resilient DC?

Introduction by Prof. Tim Beatley  
Followed by a discussion with  
Director Tommy Wells, Dr. Sabine  
O'Hara, Carl Elefante, Stella Tarnay

Award ceremony and celebratory  
reception to follow.

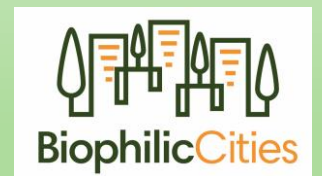
BROUGHT TO YOU BY: BIOPHILIC DC  
DC LIVING BUILDING CHALLENGE  
UDC COLLEGE OF AGRICULTURE  
URBAN SUSTAINABILITY & ENVIRONMENTAL SCIENCE  
AIA DC - COMMITTEE ON ARCHITECTURE FOR EDUCATION  
AIA DC - COMMITTEE ON THE ENVIRONMENT  
DC ENVIRONMENTAL NETWORK



Image courtesy  
of OMA + OLIN



May 23, 2016 at UDC

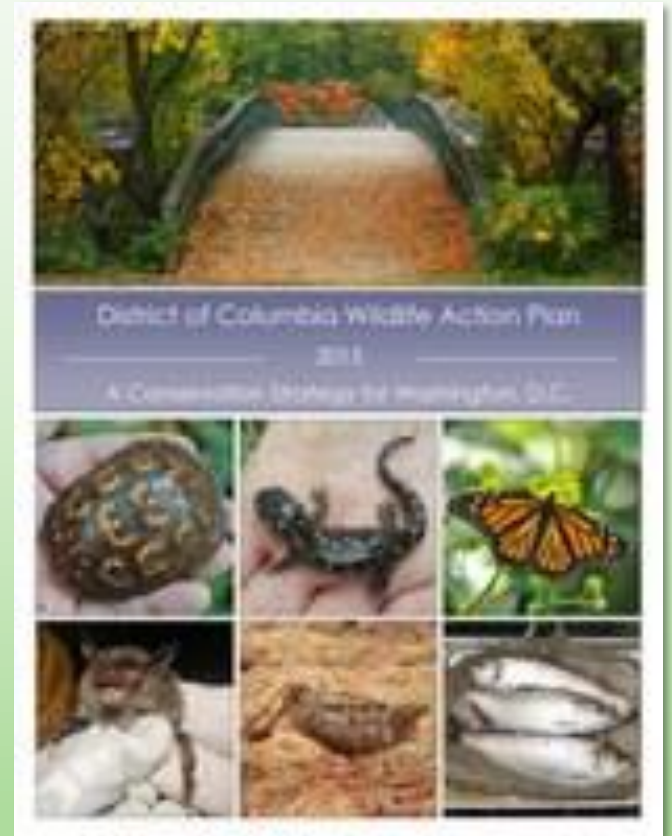
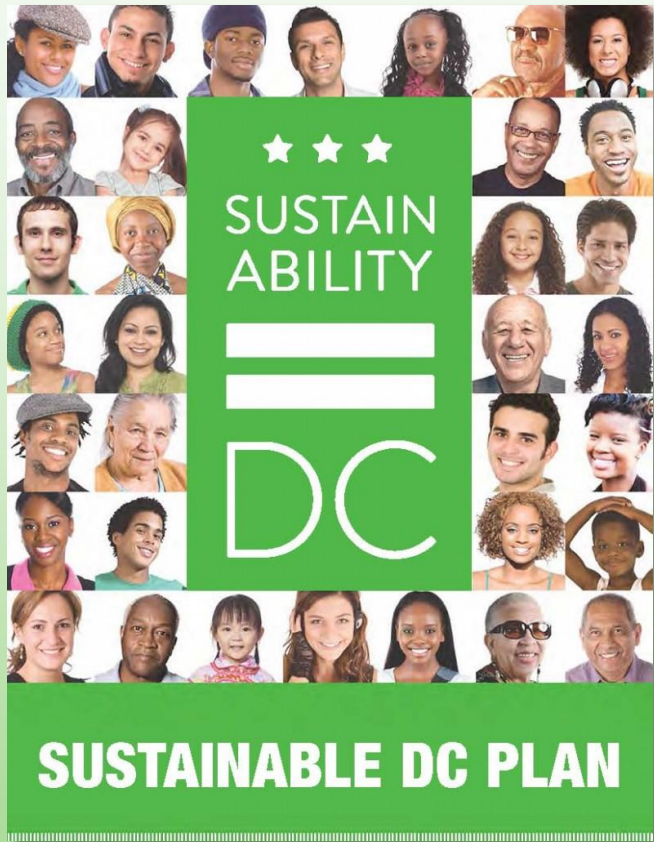




# Public Policy











## RiverSmart Homes

Clean Water Starts in This Yard...and Yours!



**Rain Barrel**  
Collects water from the roof to water the yard.



**Rain Garden**  
Captures rain water and allows it to soak into the ground.

**Biocscaping**

Uses native plants that are drought resistant.



**Permeous Pavers**

Replaces impervious surfaces and reduce runoff.



**Shade Trees**

Shade and filter storm water, decrease heating and cooling costs.



Make your home RiverSmart to help reduce stormwater runoff, which will help the District's streams and rivers.

The RiverSmart Homes program is funded wholly, or in part, by the Government of the District of Columbia, District Department of the Environment, Watershed Protection Division

For more information visit: [ddoe.dc.gov/riversmarthomes](http://ddoe.dc.gov/riversmarthomes)

**RiverSmart**  
clean water starts here







Ludlow Taylor School

Natural Resources Design



# Non-Profit and Culture



























Photo: City Wildlife







SAFETY  
FOR  
MIGRATING  
BIRDS



DOEE



# Biophilic DC Education Series: Learning from the Experts



**Biophilic DC**

**AIA DC**

**AIA  
Design +  
Wellbeing  
DC**

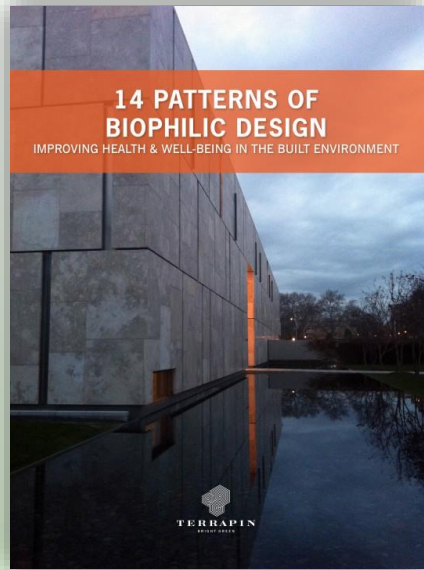
**COTE<sup>AIA/DC</sup><sub>dc</sub>**

**POTOMAC  
ASLA**

**Nature in the Heart of the City:  
An Introduction to Biophilic Design**  
Monday, Sept. 19th, 2016 AIA District Architecture Center

Bill will share the science behind healthy, nature-based spaces, including some great examples and key principles for designing biophilic buildings and spaces. This will be a great foundational program.





# 14 PATTERNS OF BIOPHILIC DESIGN

FOR HEALTH AND WELL-BEING IN THE BUILT ENVIRONMENT

## NATURE IN THE SPACE

1. Visual Connection with Nature
2. Non-Visual Connection with Nature
3. Non-Rhythmic Sensory Stimuli
4. Access to Thermal & Airflow Variability
5. Presence of Water
6. Dynamic & Diffuse Light
7. Connection with Natural Systems

## NATURAL ANALOGUES

8. Biomorphic Forms & Patterns
9. Material Connection with Nature
10. Complexity & Order

## NATURE OF THE SPACE

11. Prospect
12. Refuge
13. Mystery
14. Risk/Peril

PHOTO COURTESY OF MICHAEL BAKER STUDIO PLAIN B ARCHITECTS, WITH A TOUCH OF TO MODERNIZE AND TERRAPIN BRIGHT GREEN



**TERRAPIN**  
BRIGHT GREEN



# Learning from our Peers



bioPhilly



## Learning from Philadelphia: Urban Habitat Mapping Charrette

Wednesday, Dec. 14<sup>th</sup> 2016

National Geographic



“The ultimate goal is a habitat map for the entire city, which re-imagines Philly as a place of wild nature, habitat for a multitude of species living with and among us as humans.”



# Learning from St. Louis





# Learning from Singapore







Pic: [tropicalenvironment.com](http://tropicalenvironment.com)



# Learning from Oslo



Pic: MMag



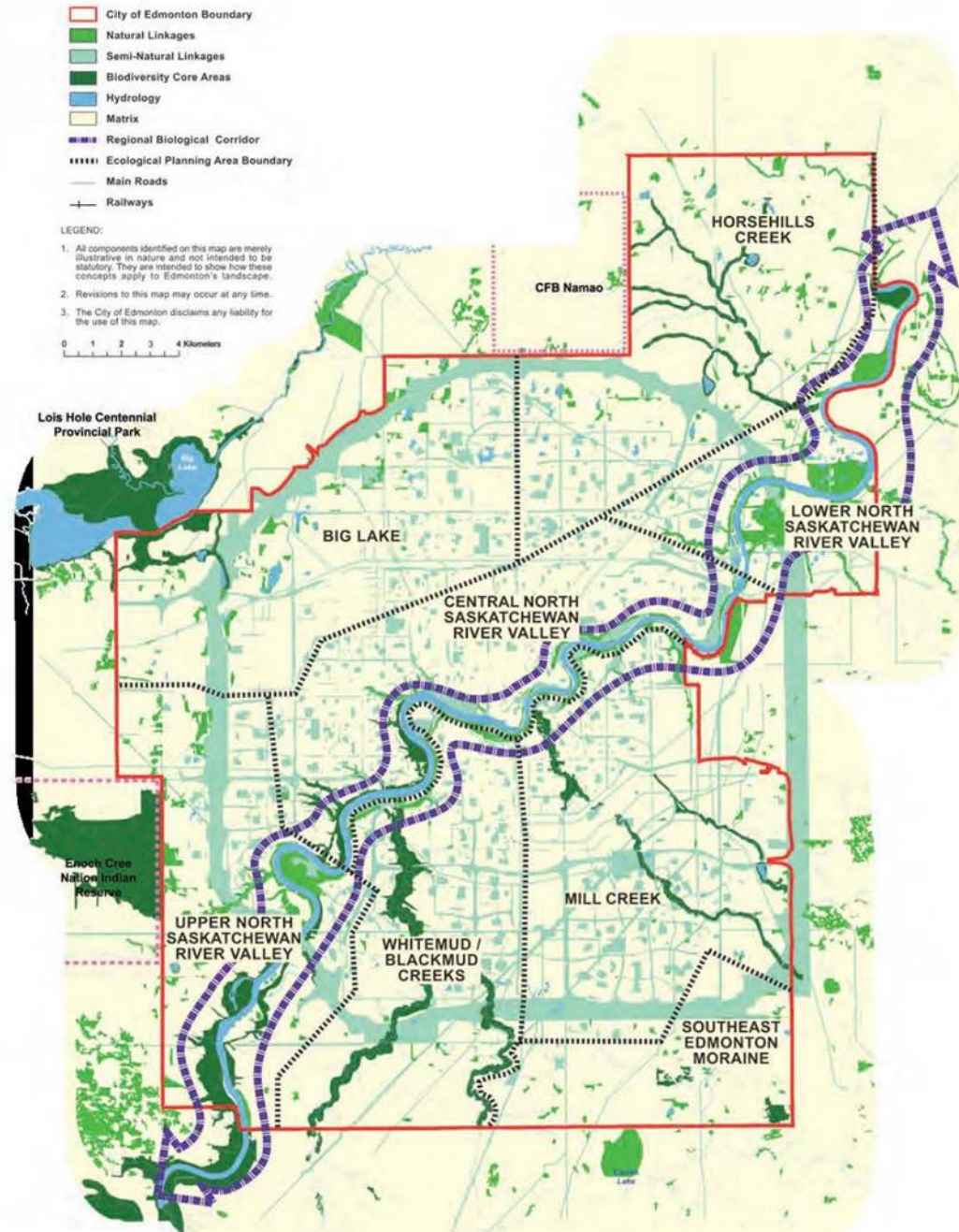
# A Functioning Ecological Network

## Components of a functioning ecological network...

- A **wide vegetation corridor** along major watercourses
- Several large natural areas known as **core areas**
- **Connectivity** for movement of species among the core habitat areas, either through wide, continuous corridors or a series of 'stepping stones'
- A **diverse mixture of natural areas** throughout the developed parts of the city that can serve as wildlife habitat or connect other, larger natural areas

Source: Forman, 1995, Land Mosaics

## Edmonton's Ecological Network





# Learning from Each Other



## Regional Citizen Science Gathering

March 15<sup>th</sup> 2017 and Oct. 11<sup>th</sup> 2017

National Geographic









Arlington County





May 22<sup>nd</sup> 2017 UDC – One Year Anniversary



# Learning from Urban Environment











Healing garden design for Walter Reed

HOK









## Bird Friendly Coffee Farm



Smithsonian  
National Zoological Park  
Conservation Biology Institute



Quinn Evans / The Portico Group

April 2017



11th Street  
**BRIDGE  
PARK**











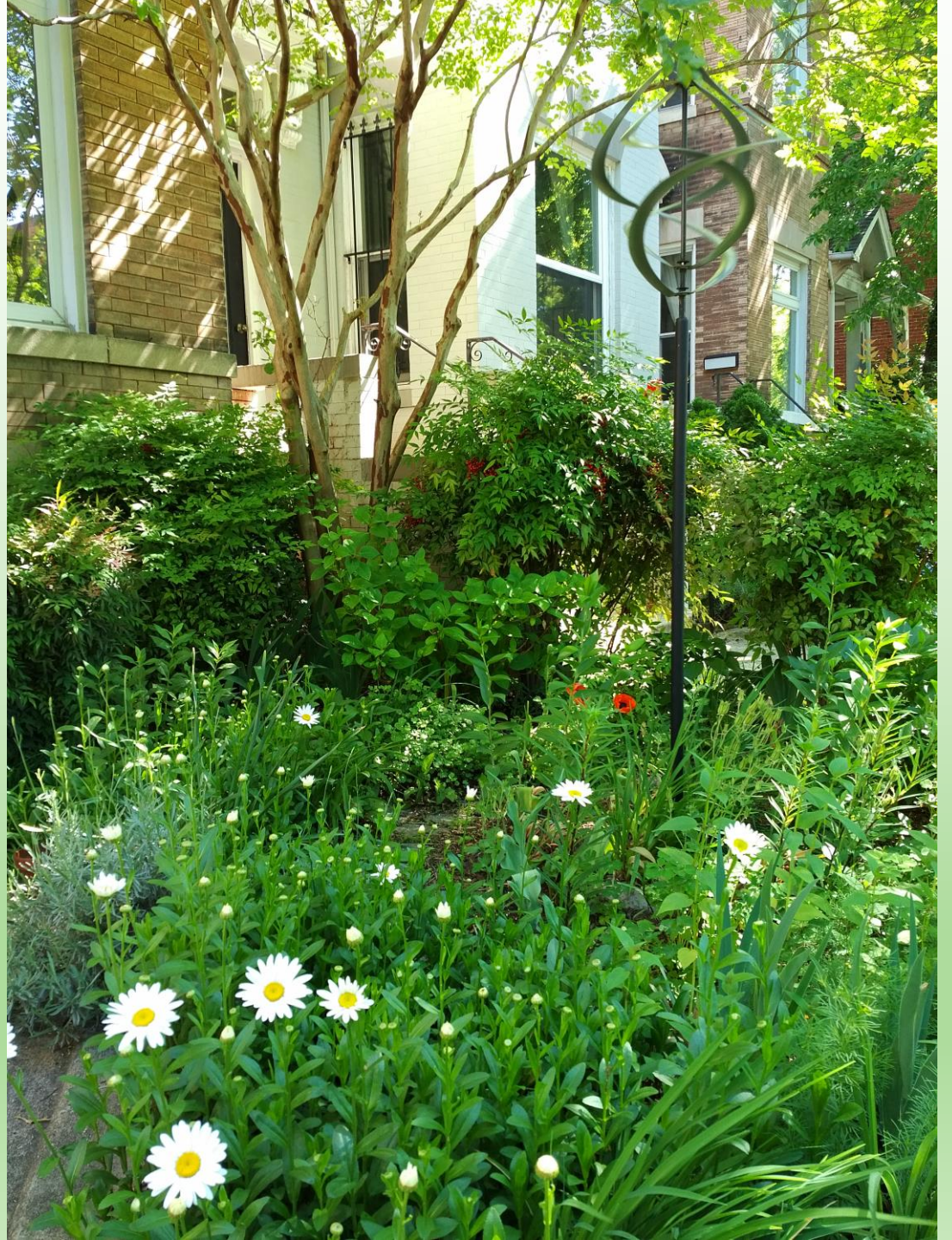












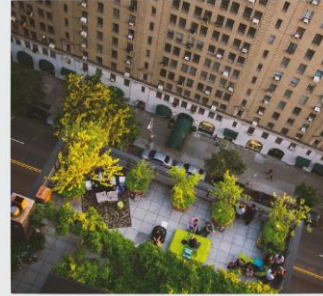


# Biophilic DC

*Biophilic DC is a civic initiative that supports nature engagement and nature-based design for the wellbeing of DC's human residents—and the species we share our city with.*




 Biophilic DC



 @BiophilicDC



 @biophilicdc

[#lovenaturedc](https://www.instagram.com/lovenaturedc)

Coming soon: [www](http://www.biophilicdc.org)

Contact: [biophilicdc@gmail.com](mailto:biophilicdc@gmail.com)