LA STEW-MAP:
Examining the Who? Where? and How? of Environmental Stewardship in Los Angeles

Michele Romolini, Ph.D.
Director of Research, LMU Center for Urban Resilience
May 6, 2016

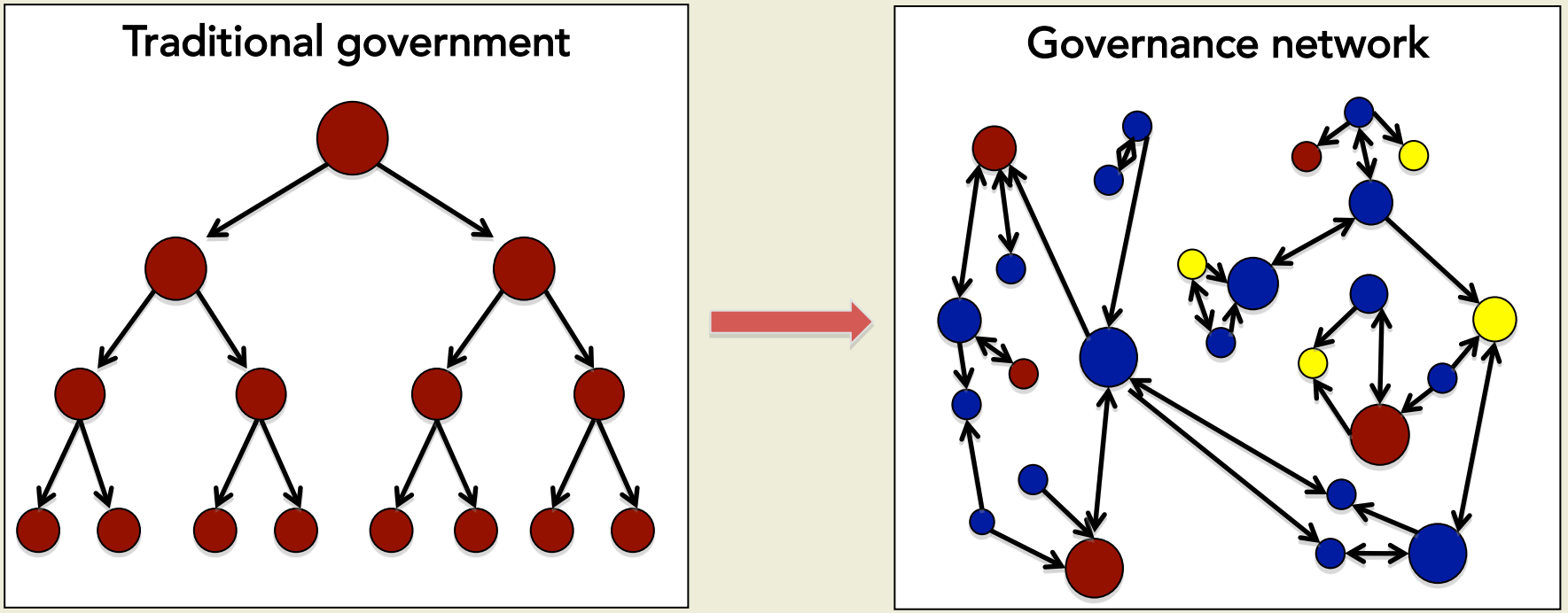
Cities & Climate Change

- *Cities as Climate Change Contributors*
  - Rapid urbanization of the 1900s to present = 81% of population in US living in urban areas
- *Cities as Sources of Climate Resilience*
  - Sustainability plans and offices have proliferated in the last decade
  - Cities are centers of innovation
  - Living in a city = adaptation strategy?

The "Sanitary to Sustainable" Paradigm

- *The Sanitary City*
  - Urban goals in the last century: making cities safe and healthy places to live
  - Environmental and social issues were studied, regulated, and managed separately
- *The Sustainable City*
  - In this century, goals include how to make cities more self-sufficient and adaptive
  - Scientists and policy makers now see cities as complex social-ecological ***systems***, to be studied, regulated, and managed as such

Sanitary City to Sustainable City: From Government to *Governance*



- Governance networks are generally complex and poorly understood
- Need to characterize the structure and function of these networks to better understand their outcomes

The Stewardship Mapping & Assessment Project

Stew-MAP

Stewardship Mapping & Assessment Project

- Research to understand the types, geographical extent, and networks of stewardship organizations in cities
- Projects in New York City, Baltimore, Seattle, Chicago, Philadelphia, San Juan, and Los Angeles

Why Environmental Stewardship?

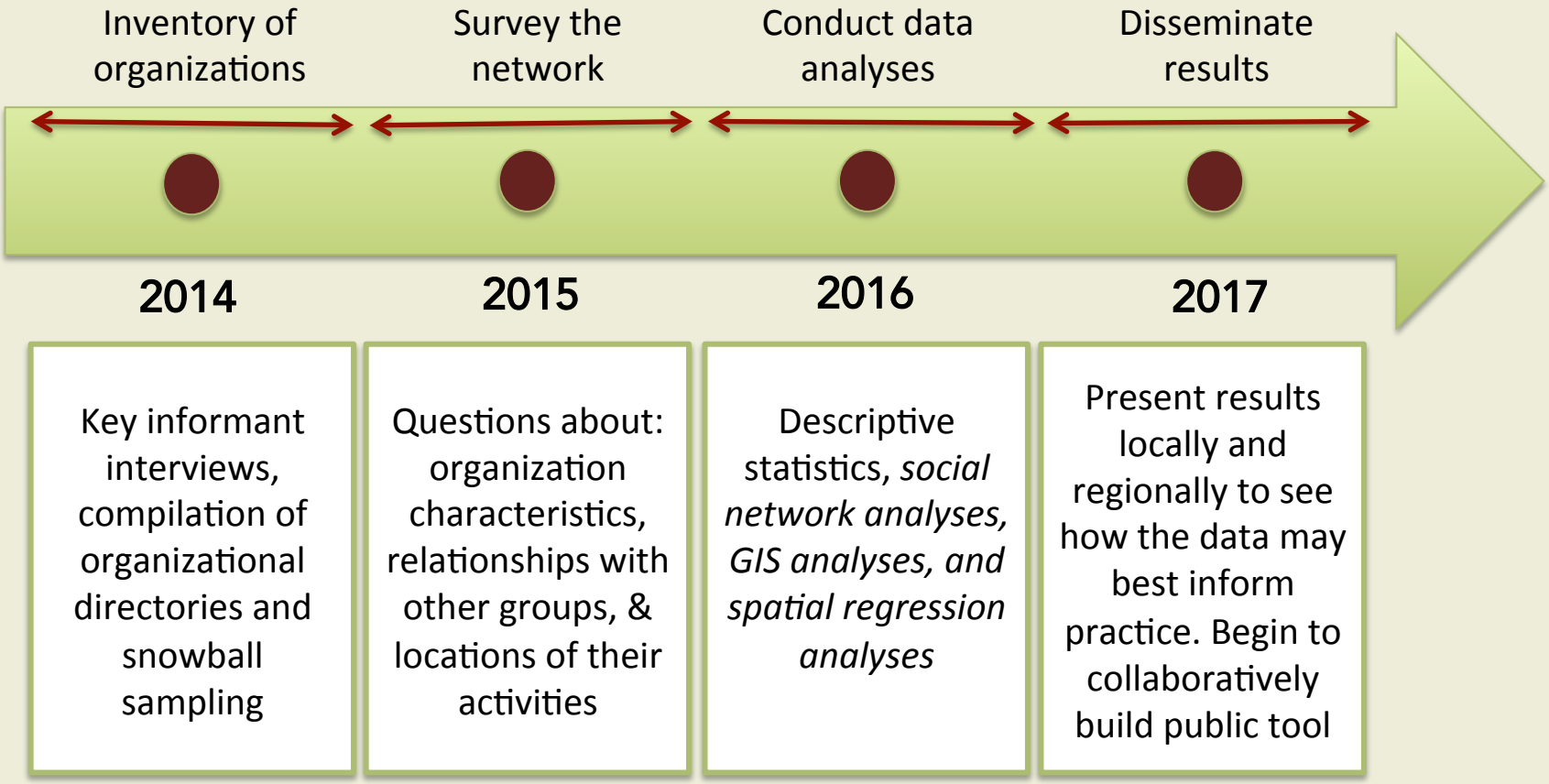
environmental stewardship:
the act of conserving, managing, monitoring, advocating for, and/or educating the public about their local environments

- Environmental and urban sustainability policies often rely on organizations outside the public sector for implementation
- Stewardship can be an organizing concept for groups from all sectors working on or for the environment
- Stewardship activities can have direct effects on sustainability goals and outcomes
- Stewardship is considered to have both social and environmental benefits

Stew-MAP Goals

1. determine the number and types of organization doing stewardship work
2. analyze network connections among stewardship groups
3. create an online map of stewardship organizations' self-described stewardship territories
4. develop an online database of stewardship groups

LA Stew-MAP Research Approach



Preliminary Stew-MAP Results – Los Angeles

Where do you work? (select all that apply)	Percent
Watershed/sewershed	38.57%
Park	37.14%
Trails/bike paths/greenway/rail-trail	35.71%
Natural/restoration area	34.29%
Public right of way	34.29%
Street tree	33.57%
Stream/river/canal	29.29%
Community garden	27.14%
School yard/grounds/outdoor classroom	23.57%
Wetland	22.86%
Vacant land/lot	20.00%
Grounds of public building	20.00%
Rain gardens/rain barrels/permeable pavement/bioswales	18.57%
Waterfront/beach/shoreline	16.43%
Green buildings	16.43%
Other: incl. nature center, groundwater, airshed, green streets	15.71%
Playing field/ball field/playground	14.29%
Recreation center	13.57%
Urban farm	11.43%
Residential building grounds	11.43%
Flower box/planter	10.00%
Forest/woodland	9.29%
Dog run/dog park	8.57%
Brownfield property	7.86%
Botanical garden/arboretum	7.14%
Courtyard/atrium/plaza	6.43%
Rooftop	4.29%
Prairie	3.57%

Preliminary LA Stew-MAP Results – Data Analysis in Progress

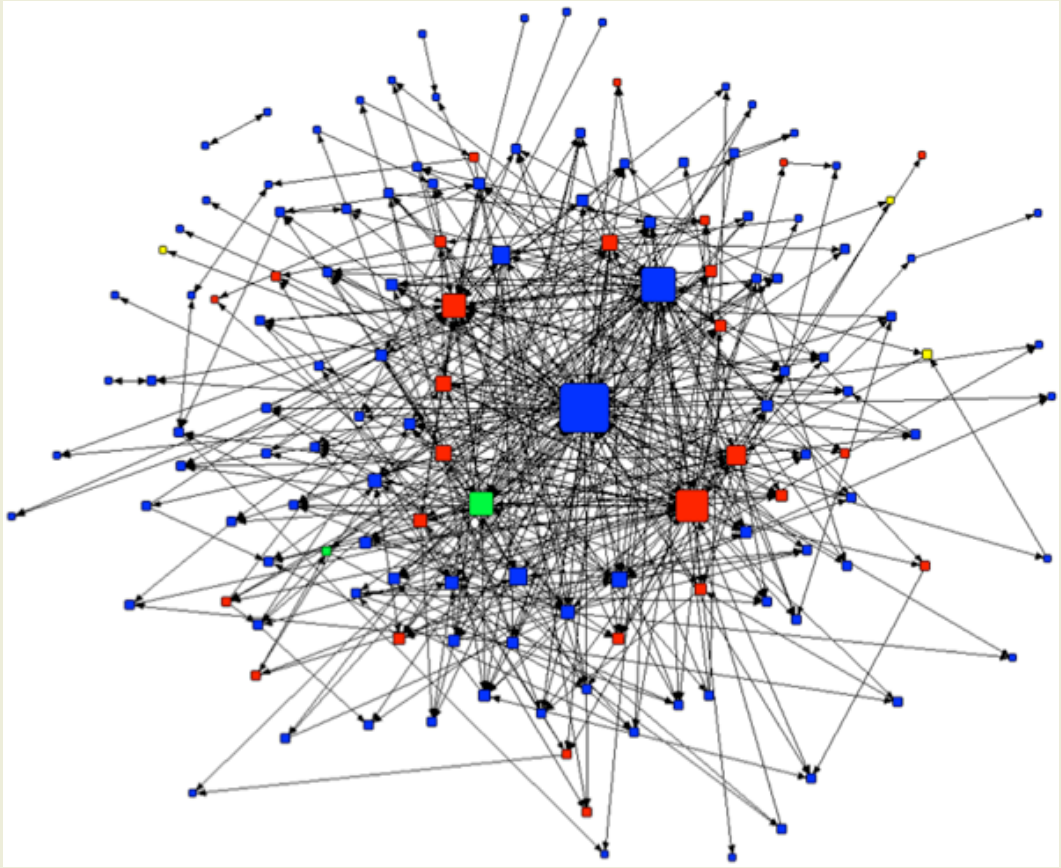
- The 140 responding organizations reported over 1300 regular collaborations, supporting the idea that urban environmental work occurs as part of a large active network
  - Social network analysis is currently in progress to understand the structure of this network
- 115 groups provided text responses to describe the geographic locations of their stewardship activities
  - Spatial analysis of these data will help us to produce the eventual "Stew-MAP" depicting the geographical extent of stewardship in Los Angeles

Examples of Future Stew-MAP Results – Baltimore, Seattle & NYC

Groups Share Info Through Networks

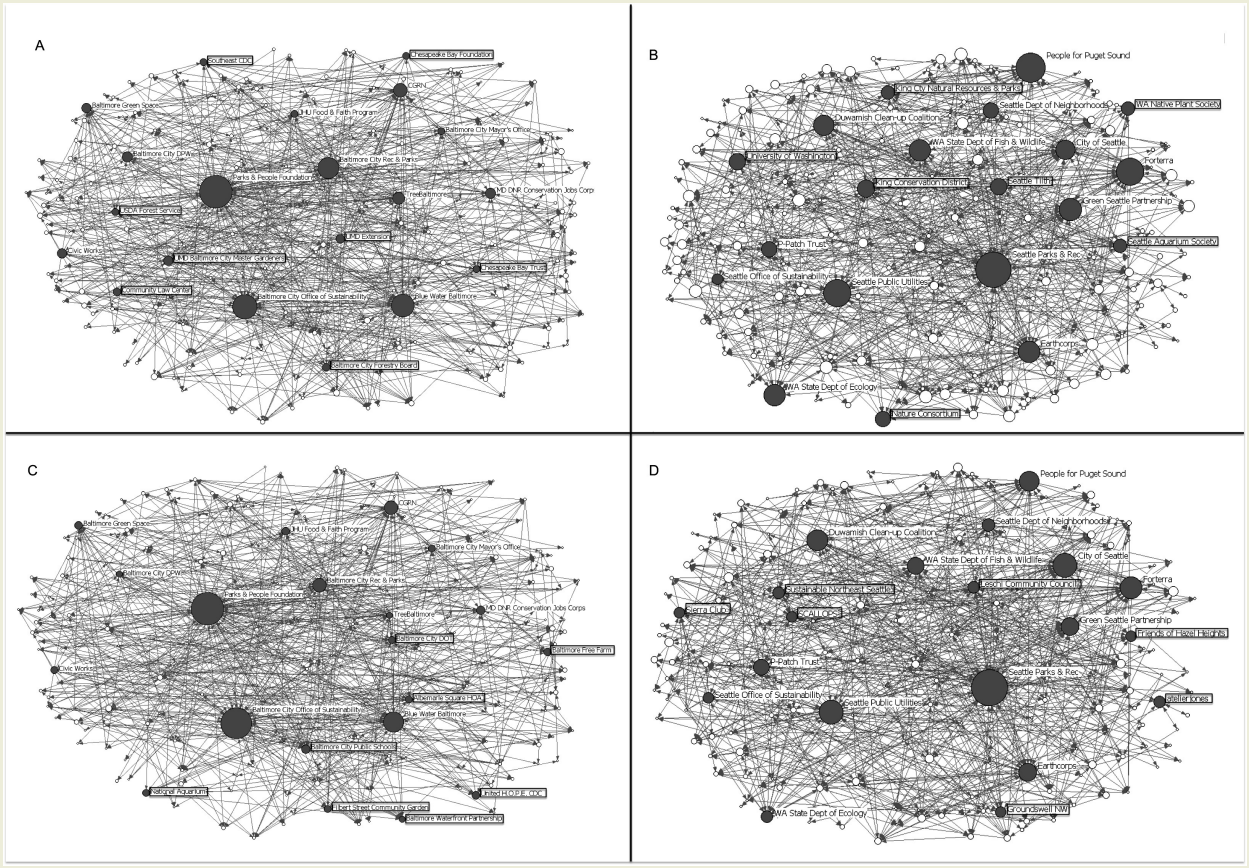
Network of organizations (n=390) providing & receiving information about environmental stewardship in Baltimore City. 45 organizations are isolated from the network. Network is 18% centralized (3% of the organizations hold more than 1/5 of all the ties).

Non-profits Are Central to Information Sharing



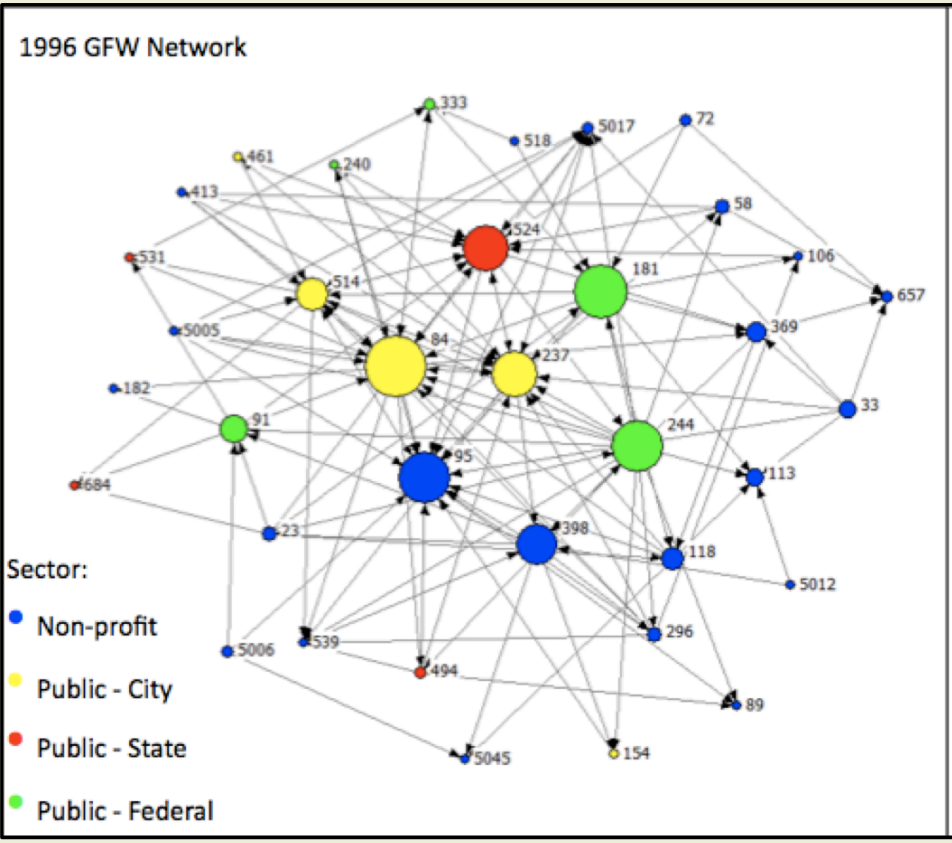
Baltimore Respondent Network
(n=163)

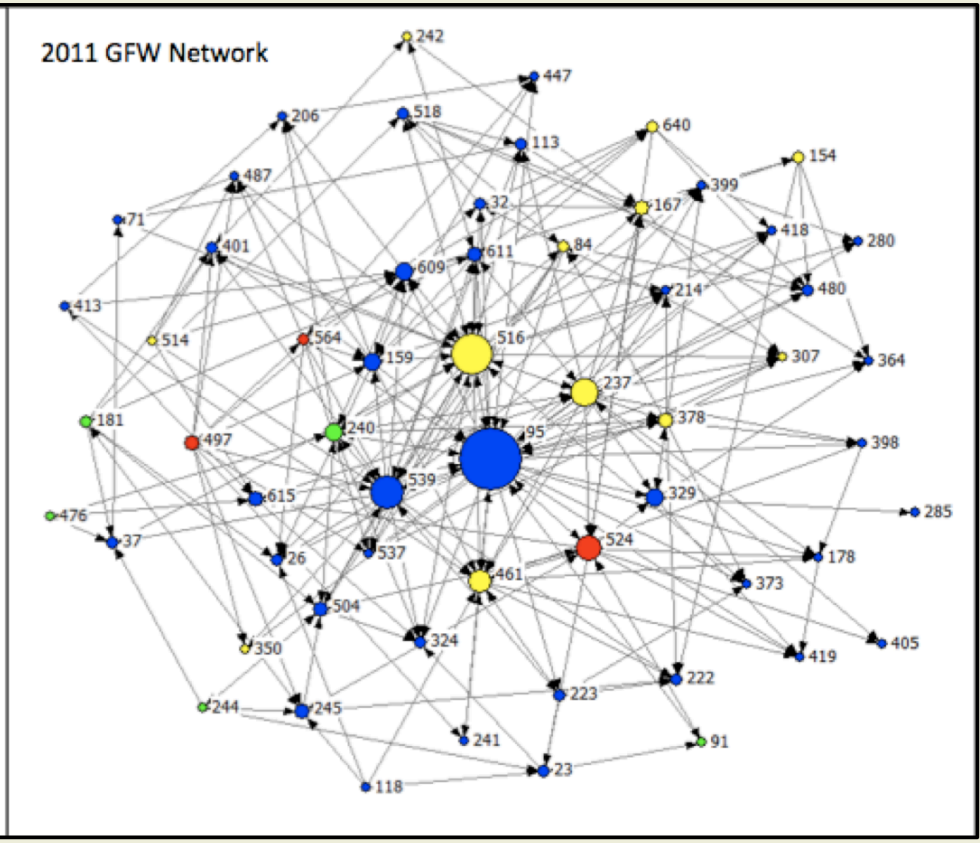
Active Groups Not Always the Most Influential



Differences in activity (top) and influence (bottom) of information sharing in Baltimore (A/C) & and Seattle (B/D) stewardship networks. Node size indicates relative centrality score. Shaded nodes are within the top twenty for that particular measure. Nodes that only appear in the top twenty for one measure of centrality are highlighted with a box around the organization name.

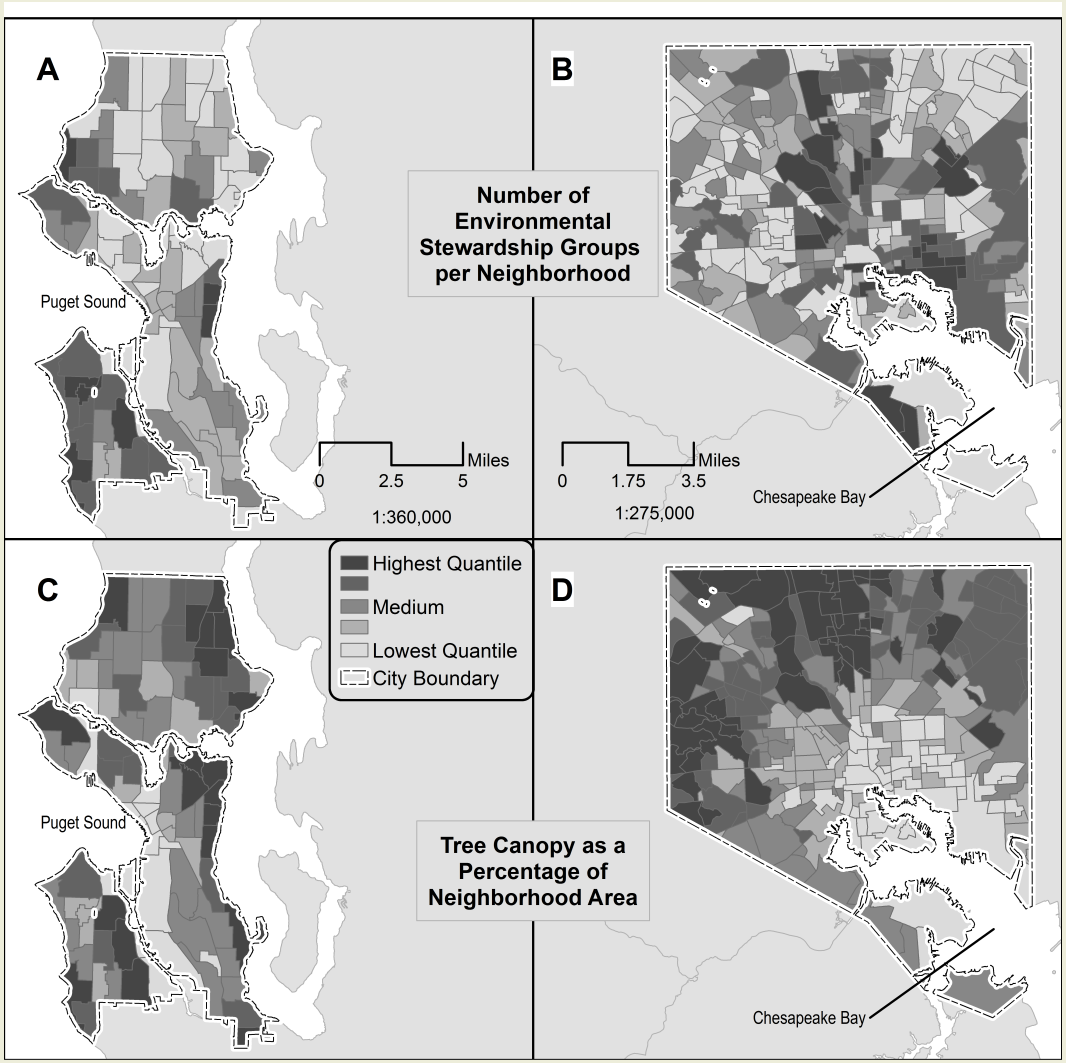
Network Composition Changes Over Time



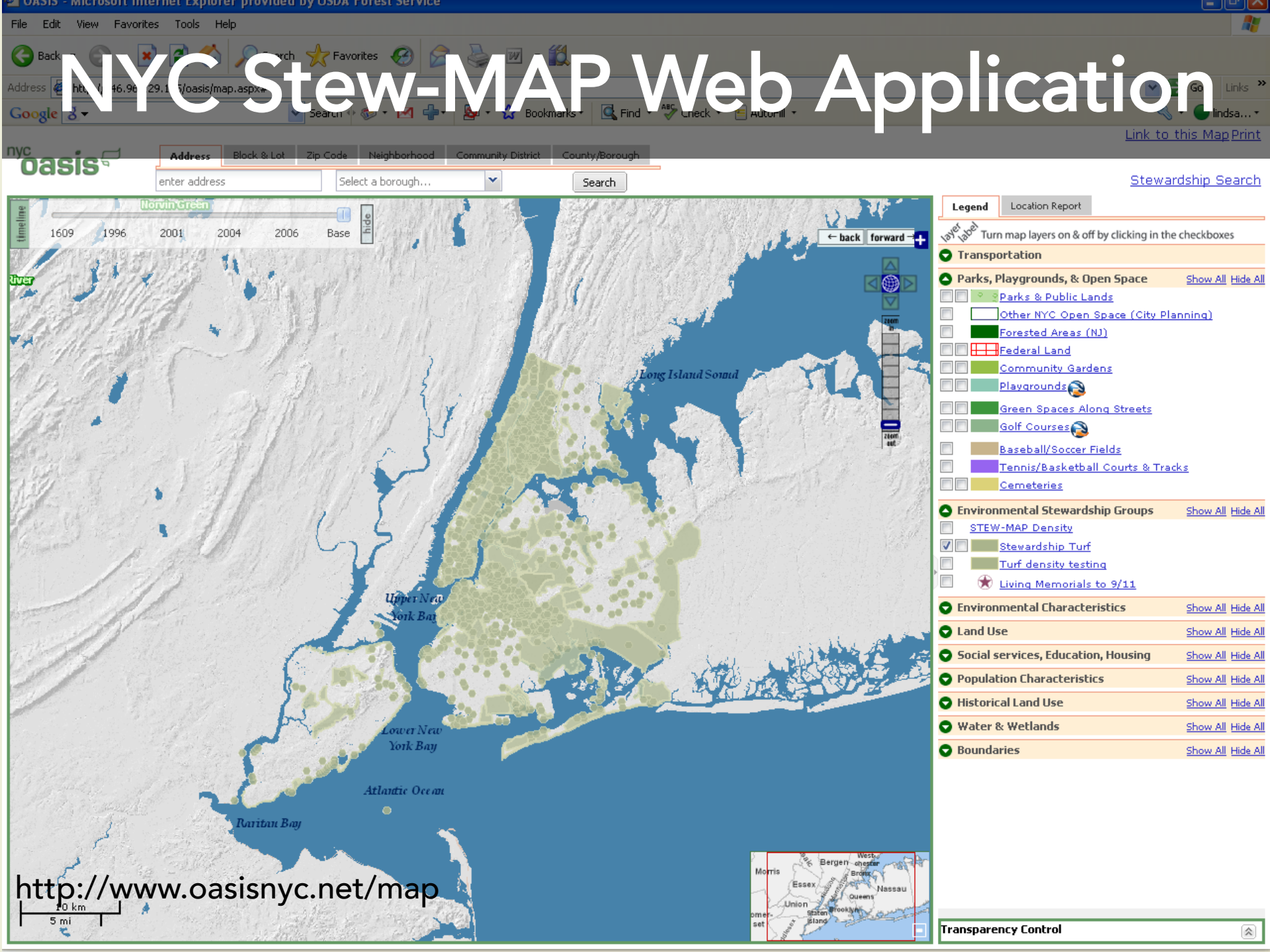


Changes in the environmental network of Baltimore's Gwynns Falls Watershed from 1996-2011. As shown, the network increased in size and density, with the non-profit sector taking a leading role and local public sector actors taking a larger role than federal and state actors.

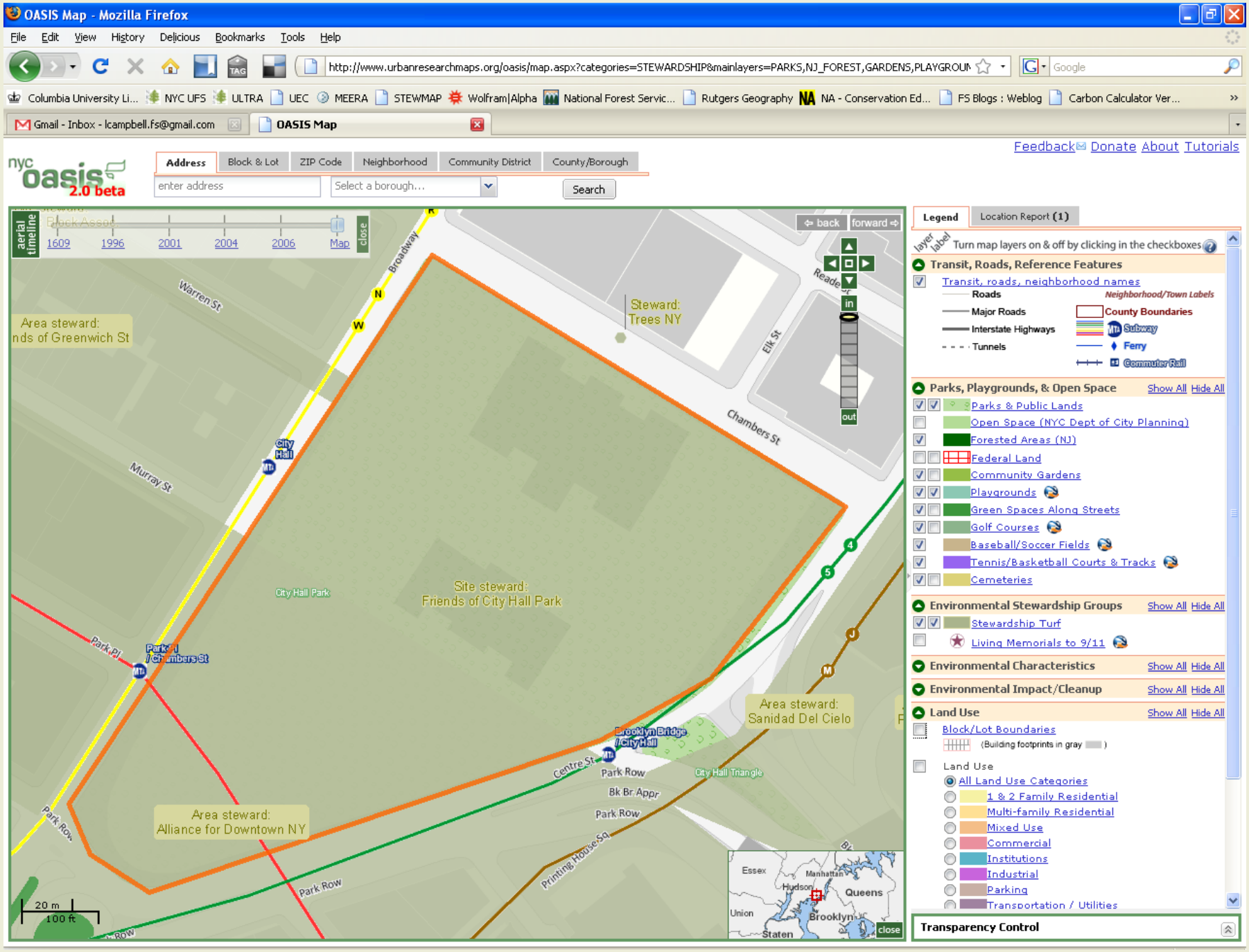
Stewardship Activities Vary Across Space & Correlate with Tree Canopy Cover (though not always as expected)



NYC Stew-MAP Web Application

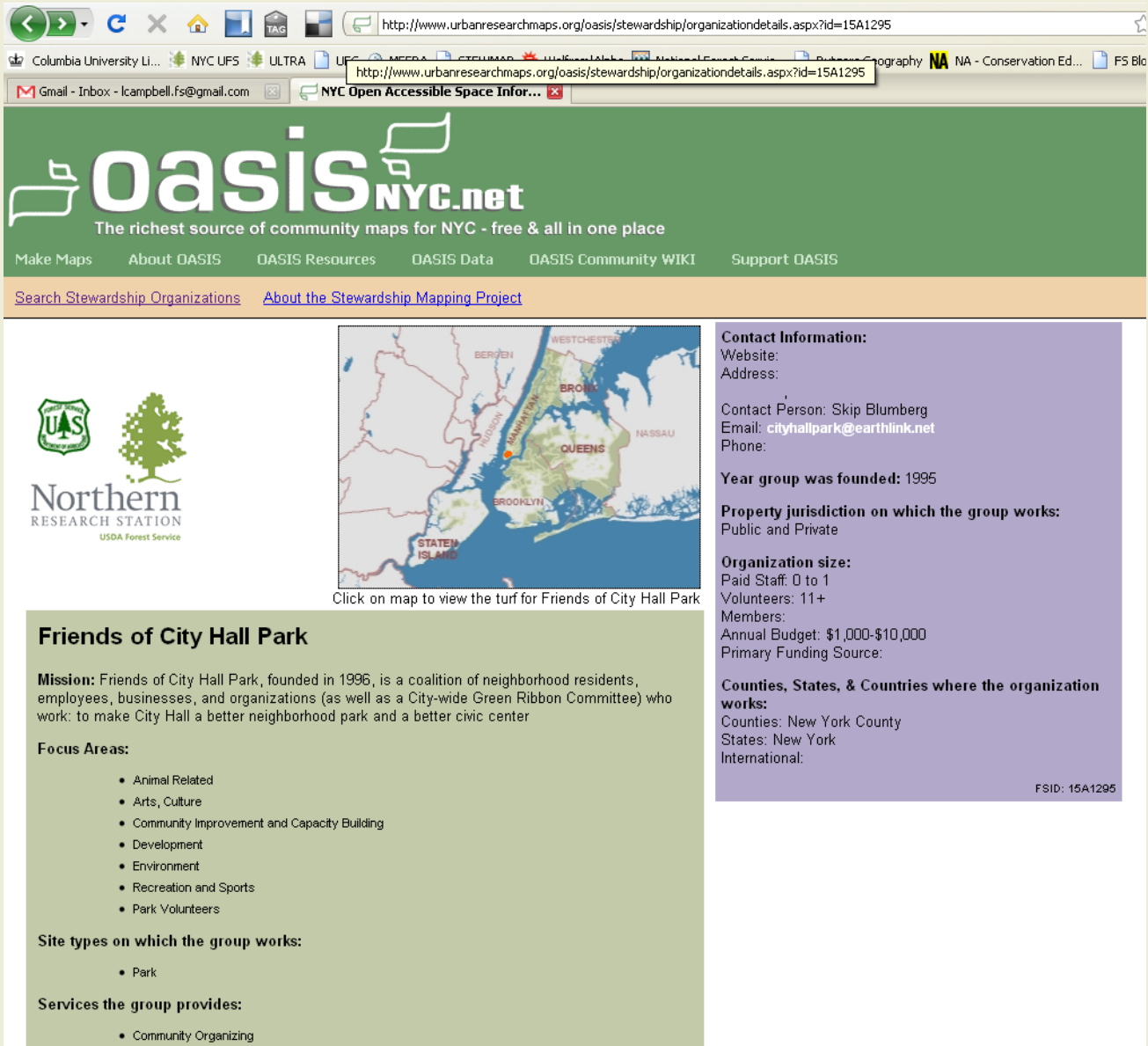


http://www.oasisnyc.net/map


OASIS Map - Mozilla Firefox
File Edit View History Delicious Bookmarks Tools Help
http://www.urbanresearchmaps.org/oasis/map.aspx?categories=STEWARDSHIP&mainlayers=PARKS,NJ_FOREST,GARDENS,PLAYGROUN
Columbia University Li... NYC UFS ULTRA UEC MEERA STEWMAP Wolfram|Alpha National Forest Servic... Rutgers Geography NA - Conservation Ed... FS Blogs : Weblog Carbon Calculator Ver...
Gmail - Inbox - lcampbell.fs@gmail.com
OASIS Map
Feedback Donate About Tutorials
nyc oasis 2.0 beta
Address Block & Lot ZIP Code Neighborhood Community District County/Borough
enter address
Select a borough...
Search
aerial timeline
1609 1996 2001 2004 2006 Map
close
back forward
Area steward: nds of Greenwich St
Steward: Trees NY
Site steward: Friends of City Hall Park
Area steward: Sanidad Del Cielo
Area steward: Alliance for Downtown NY
City Hall Park
City Hall Triangle
Warren St
Murray St
Broadway
Chambers St
Elk St
Park Pl
Park Row
Centre St
Printing House Sq
Bk Br Appr
Brooklyn Bridge / City Hall
Park Pl / Chambers St
City Hall
20 m
100 ft
Essex
Manhattan
Hudson
Queens
Union
Brooklyn
Staten
Legend
Location Report (1)
Turn map layers on & off by clicking in the checkboxes
Transit, Roads, Reference Features
Transit, roads, neighborhood names
Roads
Neighborhood/Town Labels
Major Roads
County Boundaries
Interstate Highways
Subway
Tunnels
Ferry
Commuter Rail
Parks, Playgrounds, & Open Space
Show All Hide All
Parks & Public Lands
Open Space (NYC Dept of City Planning)
Forested Areas (NJ)
Federal Land
Community Gardens
Playgrounds
Green Spaces Along Streets
Golf Courses
Baseball/Soccer Fields
Tennis/Basketball Courts & Tracks
Cemeteries
Environmental Stewardship Groups
Stewardship Turf
Living Memorials to 9/11
Environmental Characteristics
Environmental Impact/Cleanup
Land Use
Block/Lot Boundaries
(Building footprints in gray)
Land Use
All Land Use Categories
1 & 2 Family Residential
Multi-family Residential
Mixed Use
Commercial
Institutions
Industrial
Parking
Transportation / Utilities
Transparency Control

Online database of stewardship groups

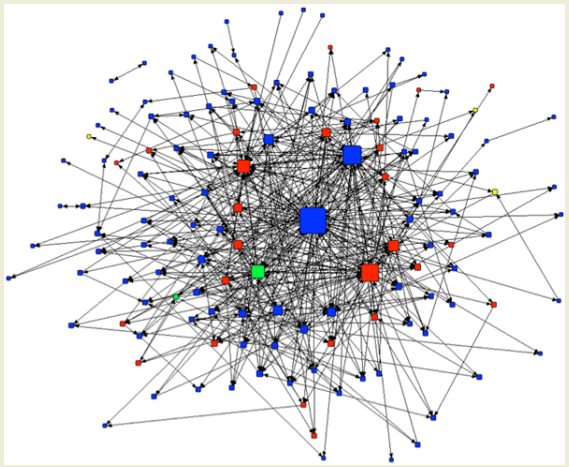
- respondents can "opt-in" to have their information included in the public database
- each organization is linked to its geographic stewardship territory



Data Informs Research & Practice

- Assessing and comparing relationships between urban environmental stewardship networks and land cover in Baltimore and Seattle (Romolini et al. 2013)
- Environmental governance of the sustainable city: examining changes in stewardship networks in the Gwynns Falls Watershed, 1996-2011 (Romolini et al. 2013)
- Toward an understanding of citywide urban environmental governance: An examination of stewardship networks in Baltimore and Seattle (Romolini et al. 2016)
- Networks and landscapes: a framework for setting goals and evaluating performance at the large landscape scale (Bixler et al. 2016)
- Network governance for large-scale natural resource conservation and the challenge of capture (Bixler et al. 2016)
- Demystifying governance and its role for transitions in urban social-ecological systems (Munoz-Erickson et al. submitted 2016)
- An applied social-ecological network analysis framework for engaging scientists and practitioners in urban natural resource governance (Romolini et al. submitted 2016)

Thanks!



Michele Romolini
michele.romolini@lmu.edu
(310) 338-7443
www.cures.lmu.edu