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VISUALIZING THE UNSEEN: MAPPING CIVIC STEWARDSHIP AS SOCIAL INFRASTRUCTURE

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I. INTRODUCTION: SOCIAL DRIVERS OF CHANGE

How does urban space transform? What are the forces, actors, and drivers involved in the seemingly magical transformation from one state to another? Change in urban systems can be *slow* in pace, like coastal erosion; *cyclical or seasonal* like the emergence of winter sneckdowns and spring potholes, or *sudden and fast* like a hurricane or a new condo development. While we can see these sorts of results, outcomes, or effects with our eyes, and we can track "natural" disasters and weather patterns in real time, the social forces that drive these shifts can often be harder to detect. Yet, we know that there are both powerful structural forces and lively actors that animate the urban terrain. But whose stories get told as part of these processes of citymaking? And how can we visualize the unseen?

If we look at a map of a city or walk its streets, we can clearly see the imprint of *private* property—fence lines, no trespassing signs, locked doors, brass boundary markers inlaid into sidewalks, surveillance cameras, ID cards required for access, security personnel, and other acts of exclusion abound. At the same time, proudly maintained lawns, well-used stoops, local business that serve as social hubs, and other private spaces that foster community pride and cohesion are evident as well. A capitalist system built on private property, with the real estate market playing a driving role in shaping the city as "growth machine" is clearly theorized by critical scholars and urban geographers (see Molotch 1976; Harvey 1996; Logan and Molotch 1997).

If we keep looking, we can see the hallmarks of the *public sphere*—parks, plazas, libraries, bus kiosks, and the great democratic space of the subway car. These are the spaces that often inspire design competitions and that become iconic symbols of urban centers. Great attention has been paid on our anchor public spaces, such as Central Park, but more recently interest has shifted to adaptive reuse of postindustrial spaces, such as the High Line. Even more fragmented, smaller, or quotidian spaces, such as traffic triangles in the public right-of-way that have become plazas, are now part of the design and planning lexicon. Building on the work of thinkers like William H. Whyte (Project for Public

Spaces), Jan Gehl (Gehl Insitute), and others, many cities are rethinking how their public sphere can best foster sense of place, inclusiveness, diversity, and liveliness (see Tsai in press).

But where is the third sector, civil society or the *civic realm*, in our cities? We can certainly locate it in our anchor nonprofit institutions like museums, churches, and concert halls, but it goes deeper than that. There is a network of civic groups that play a crucial role in the *social infrastructure* of the city. Many local civic groups have missions that span environmental protection and community development, with an emphasis on enhancing local quality of life. These diverse groups have different foci that span the social and environmental—youth, seniors, social services, housing, arts, and immigration—and work across multiple urban ecological site types— parks, community gardens, waterfronts, and brownfields (Svendsen & Campbell, 2008). Some are more visible, with charismatic leaders, compelling storylines, and front page stories in the *New York Times*. But others work with less notoriety, small- to-no budgets, all-volunteer workforces—a true grassroots movement powered by ideas, friendship, and sweat equity (Fisher et al. 2012). These groups and the individuals that comprise them can be considered "stewards" or even "citymakers," as Cassim Shepherd (2016) calls them. They work to shape the form, function, and meaning of urban landscapes, including their green, grey, and blue components.

II. METHODS: STEWARDSHIP MAPPING

As social scientists who study urban systems, we violate the magician's golden rule of never telling the secrets behind the tricks. We try and uncover the patterns, processes, and mechanisms that shape social-ecological systems, and our team has paid particular attention over the last decade to how we understand, visualize, and support *civic stewardship* as part of the social infrastructure of the city. We define stewardship as acts of environmental caretaking that include conservation, management, monitoring, education, advocacy, and transformation (Fisher et al. 2012; Connolly et al. 2013; Campbell et al. in press). This impetus to visualize the unseen, to quite literally put civic stewardship groups on a public map, all with an aim toward building more equity and transparency into the system is what motivates our Stewardship Mapping and Assessment Project (STEW-MAP).

STEW-MAP is a U.S. Forest Service national research project designed to answer the following questions: *Who are the active environmental stewardship groups in my area? Where, why, and how are they caring for the local environment— including land, air, water, waste and toxics?* The project captures environmental stewardship through a combination of methods that includes 1) an organizational survey to identify organizational characteristics, 2) mapping the geographic area of influence, and 3) depicting the social networks among civic, private, and governmental organizations (Svendsen et al., 2016).

CAPACITY: Capacity can be captured by measuring organizational characteristics, such as year founded, budget, legal status, number of employees and volunteers, mission, site type, and primary focus. These data demonstrate the way in which environmental stewardship practices are embedded in the work of diverse civic groups. It describes the resources that groups bring in pursuit of their mission and vision and can reveal trends in the form and emphasis of stewardship in a city.

TURF: A turf refers to the geography of where a group works in the city or region, as defined by the group itself. It is not only a mailing address. It can be as small as a single tree or as large as a region. It can be defined by where they physically work, in the case of hands-on land managers, or a wider catchment area in the case of social-service providers. It helps us better understand the territorial basis of power at the group level, as well as the patterns, gaps, and overlaps in space across groups.

NETWORKS: Networks are the relationships between groups, which include information, resources, and collaborative ties. They can be analyzed by sector to identify relationships between civic, public, and private actors. Networks identify central nodes or "brokers" in the network as well as groups on the periphery. Networks helps us understand that connections can jump scales or transcend Cartesian space.
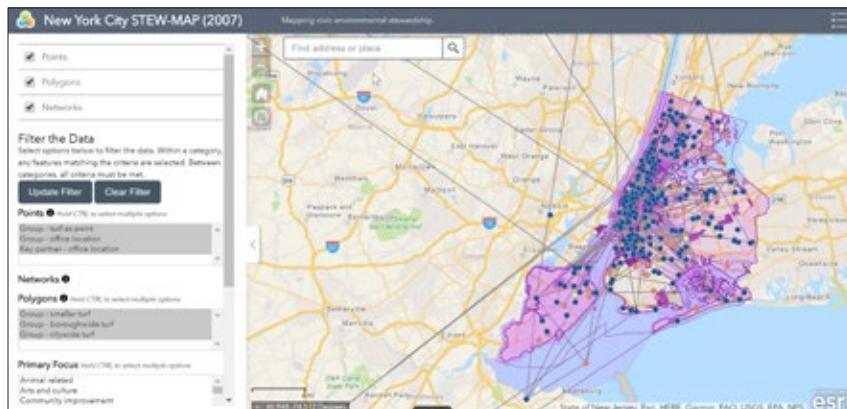
STEWARDSHIP MAPPING AND ASSESSMENT PROJECT INTERACTIVE MAP:
TURFS AND NETWORK CONNECTIONS SOURCE: 2007 STEW-MAP

The original New York City STEW-MAP was developed in 2007 in response to the need for a common database and map of civic stewards. It was implemented by a team of Forest Service and university researchers working with dozens of municipal agencies and citywide environmental nonprofits. In 2017, we conducted the first longitudinal update to STEW-MAP in New York City by repeating the survey and expanding our approach. Over 55 data providers contributed to the final data set in 2017, as compared to 28 in 2007. We also engaged a wider arena of practitioners across diverse fields, including not only the environmental sector, but also resiliency planning, arts and placemaking, and community development. Additionally, we expanded the geographic scope to include the greater metropolitan region (defined as the New York-Newark NY-NJ-CT-PA Combined Statistical Area).

III. RESULTS: VISUALIZING THE UNSEEN

The 2017 STEW-MAP survey received responses from civic groups with various legal statuses, including 501(c)(3) and 501(c)(4) nonprofits, school-affiliated groups, community boards, and public-private partnerships. The groups that are often least visible from a citywide perspective, yet vital to neighborhood quality of life, are the

community-based groups without formal non-profit status. Many work without a budget. Civic groups like these can work at many scales, though the groups in our 2017 dataset who did not have formal non-profit status or an annual budget tend to work at a local level, whether focusing around a block or small part of one neighborhood, or around an environmental asset, like a park or community garden. It can be incredibly difficult to find information about these groups, which may not have any online presence and often use flyers and word of mouth to share information, but the unseen work they do is no less important. They have a range of histories and missions, but often are focused on the hyper-local and born out of residents' concern and care for their communities. Themes of activism, community building, health, safety, and beauty run throughout their missions and visions for how to transform their communities.

When sharing their group's history and missions, multiple groups cited gun violence and crime as an impetus to get to know their neighbors better. The West 88th Street Tree Project in Manhattan has no formal mission statement, but shared that they grew out of a block association that was founded with the hope that coming together to take care of their block would lead to a reinvigoration of the community, and an enhanced sense of safety. Equally important, they strive to make sure that people in the neighborhood know one another. They began with community potlucks, then stoop parties, and finally block beautification. Founded in 1991, the West 88th Street Tree Project has seen—and helped create—a major transformation of New York's Upper West Side. The Friends of St. Marks Children's Park is another group that formed in part to create a safer community. Their mission is to use the resources of various city and private agencies to empower the under-resourced community of Crown Heights, Brooklyn. In a neighborhood with a long history of gun violence, the 900 block of St. Marks Avenue aims to maintain a safe and beautiful park. In order to achieve their ultimate desired outcome of "greater understanding and collaboration toward greening Crown Heights," they work to organize and educate the residents on how to care for their shared spaces.

Sometimes, grassroots civic work stems from pride in place and the desire to maintain important natural resources. Friends of Wood Duck Pond, a stewardship

Stable Brooklyn Community Group

Mission Statement:
Community group working on responsible development. We focused on rezoning our residential blocks to (try to) prevent out-of-scale development and improving safety for pedestrians, bicycles, and horse riders going to and from Prospect Park and surrounding streets.

Where We Work:
We are one of the gateway neighborhoods around Prospect Park; our 2009 community plan included the redesign of Park Circle.

THE REVEALED TURF FOR STABLE BROOKLYN COMMUNITY GROUP SOURCE: 2017 STEW-MAP

KENSINGTON STABLES, WINDSOR TERRACE, BROOKLYN

group based in Staten Island and founded in 1993, wants to encourage neighborhood residents to see the pond as an asset worthy of preservation. Initially, the group emerged as advocates in response to the threat of development, effectively organizing the government to purchase the area and keep it public. Today, they strive to increase participation in their neighborhood cleanups, which has dwindled in recent years. Carpenter Avenue Community Garden is another group that came together to preserve a shared asset, in this case creating a community garden to end the practice of dumping in a vacant city-owned lot in the Bronx in 1985. The group's participants want to see an increase in civic pride and well-being in their community as a result of the enhanced connection to nature through community urban gardening and care of street trees. Additionally, the group has advocated for capital improvements in their adjacent playground, demonstrating how environmental stewardship can bridge seamlessly to civic engagement.

Another example of the narrow line between environmental and civic stewardship can be seen in the work of Stable Brooklyn, a Windsor Terrace group that borders Prospect Park by Park Circle in Brooklyn. In 2009, they were active in the rezoning of their neighborhood, aiming to prevent out-of-scale development with a specific focus on improving safety for pedestrians, bikers, and horseback riders. After 2009 the group became relatively dormant, and is currently reorganizing in response to the impending sale of Kensington Stables and rezoning on Canton Place. This illustrates the capacity gained through civic stewardship work, even when the context changes.

Despite the often small size and local geographic scope of these groups, they do not work in a vacuum. STEW-MAP captures social network data, and recognizes the support given to these groups in the form of collaboration, knowledge, and resources. These social networks are a crucial part of sustaining the work of smaller stewardship groups and comprise the structure of networked environmental governance in the city (see Connolly et al. 2013, 2014). Whether through financial assistance in the form of grants from umbrella organizations such as Partnerships for Parks or Citizens Committee for New York City, visibility through events like Brooklyn Botanic Garden's Greenest Block in Brooklyn, or material resources from New York City agencies in the form of compost (DSNY) or trees (NYC Parks) following the flows of funding and information, the collaborative ties among groups reveals further, unseen dimensions that shape whether, where, and how stewardship manifests in the city.

IV: CONCLUSION: THE MAGIC OF STEWARDSHIP

Stewards and stewardship groups are powerful, positive agents of change in urban environments. The "trick" of STEW-MAP is to reveal that these actions are not anomalies, but rather are part of a patterned human response that we can measure, monitor, and describe through rigorous and replicable research methods. Indeed, while it was initially a New York City project, STEW-MAP has grown into a multi-city research endeavor across a dozen locations and growing. [To learn more about the network, visit: https://www.nrs.fs.fed.us/stew-map/.] Each new STEW-MAP project is not a replicate, but rather a locally implemented adaptation that demonstrates how stewardship manifests consistently or uniquely across locations as varied as San Juan, Puerto Rico; North Kona and South Kohala region of Big Island, Hawaii; and Paris, France.

Visualizing these unseen stewardship groups provides them a chance to be politically recognized. The potential recognition from city government and umbrella stewardship organizations can lead to partnerships and collaboration, funding, or even simply the acknowledgement and gratitude they need to continue to invest their time in taking care of the local environment. While the majority of STEW-MAP respondents are eager to have their group shared on the public map, some prefer not to be made visible. Perhaps these groups do not have the time and capacity to manage outside interest in their work, perhaps they fear being made identifiable by government, or maybe they are simply comfortable serving anonymously. Regardless, they continue to work to improve their neighborhoods, and consequently, improve the lives of their neighbors.

Transformation is a tangible reality in cities. Physical changes like rezonings and the creation of new green spaces—as well as unintended changes like storm damage and retail vacancies—can all be easily viewed and measured. But day-to-day, there are many unseen forces shaping our neighborhoods. These often come in the form of neighborhood-level civic stewardship groups working to improve quality of living in their community by engaging with their local environment. They help preserve natural resources, beautify their streets, and enhance civic capacity through relationship building. By exposing and sharing the sometimes-less-visible work of these groups through STEW-MAP, we hope to inspire more potential stewards to get involved in the "magic" of stewardship.

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