

Urban Environmental Stewardship Practices as Indicators of Social Resilience:

The Case of Living Memorials

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Pre-Publication Draft 2019

Background

Urban environmental stewardship (UES) is the act of caring for the environment to enhance the quality of life for the greater public good¹ “with the underlying assumption that doing so will improve the social–ecological functioning of specific urban areas”².

Indeed, a critical motivation for urban environmental stewards is to nurture places that are valuable for social as well as ecological reasons.³ Though important, the contributions of UES to ecological resilience (e.g., promoting biodiversity) are under-recognized,⁴ yet the contributions of UES to social resilience are perhaps even less recognized.⁵ Natural resource agencies, including our own, the USDA Forest Service, tend to focus on ecological resilience.⁶ This is likely because natural resource management (both the academic field as well as the practice) emphasizes the biophysical resource rather than social structure and organization that cares for, governs and benefits from the resource.

More integrated fields of study (e.g., those that are based in social-ecological systems and biocultural approaches) and practice are increasingly recognizing the need to address both, and in fact, understand the reciprocity and synergy that exists between the biophysical and social worlds.

Social Resilience:
the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change.

While we believe ecological and social resilience are inherently interrelated, here we focus on social resilience, “the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change.”⁷

Research suggests social resilience “may be more influential than environmental resilience in determining the outcome of a collapse and recovery scenario”⁸ and that the “capacities for human (rather than environmental) transformation that lie at the heart of adaptation.”⁹ Applied at the community level, social resilience is the “existence, development and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability and surprise.”¹⁰ We contend that supporting social resilience at the community level is especially important in dense, urban areas¹¹ and so it is our focus in the community-managed, green spaces we describe here. UES groups can strengthen the networked ties between civic, government, and private sectors thereby giving rise to new social innovations and practices,¹² which are components of social resilience.

¹ Burch et al. 1993

² Connolly 2013, p. 76

³ Krasny et al. 2014, Tidball 2014

⁴ Barthel et al. 2005

⁵ Clayton and Meyers 2015

⁶ Benson and Garmestani 2011

⁷ Adger 2000

⁸ Maher and Baum 2013, p. 1470

⁹ Tanner et al. 2015, p. 23

¹⁰ Magis 2010, p. 401

¹¹ Meerow et al. 2016

¹² Connolly et al. 2013, Fisher et al 2015, Svendsen and Campbell 2008, Svendsen et al. 2015

But, how do we know social resilience when we see it? Are there empirical examples of social resilience that can be identified in real time, and therefore more readily supported and promoted through programs and policies?

To answer these questions, we focus on a particular kind of UES, the care of living memorials created in response to the losses suffered due to the terrorist attacks on September 11, 2001.¹³

As 16 years have passed since 9/11, we are also able to examine the following issues:

-) if the benefits of stewarding these living memorials are limited to the specific reasons they were created and to the specific sites where they were created?
-) Is there evidence that their effects expand outward to other sites, issues, and scales beyond the immediate site?
-) Do we see evidence that the care of these living memorials promotes social resilience more broadly, beyond recovery from 9/11 and beyond the specific sites themselves?
-) Can living memorials to 9/11 be seen as both indicators of resilience to a specific disturbance and demonstrations of general resilience, as they adapt to subsequent social-ecological disturbances over time?

In the following discussion, we break the theoretical construct of social resilience into its components and then we identify specific empirical examples of these components to illustrate how these concepts occur and can be observed in practice. We conclude by describing how these living memorials have contributed to general resilience or the adaptive capacity of communities to respond to disturbances and we draw on these examples to propose future research.

Background and Methods

The Living Memorials Project (LMP) was initiated by the Forest Service in 2002 to support those who had experienced loss due to 9/11 and wanted to commemorate their loved ones or remember the events of the day through the creation of nature-based, living memorials.

The initial phase of the project included funding to support communities' efforts in creating their living memorials and then documenting the memorials and their meanings. Since this initial phase, the LMP continues as a longitudinal research project to document the creation and evolution of living memorials and to deepen an understanding of the roles of community-managed greenspace and stewardship in social-ecological resilience.

Over time, we understand these living memorials to be part of a patterned human desire to “do something” that is life-affirming and recovery-oriented after a personal or communal disturbance. The LMP includes data that were gathered through semi-structured interviews (n = 117 memorials), site observations, and photo documentation (2002–2004).¹⁴

Here we report on follow-up research, conducted in 2015–2016 on a subset of living memorials in the NYC metropolitan area (New York, New Jersey, Connecticut). Site visits and interviews were conducted (July–October 2015) at 19 living memorials and 22 telephone interviews were conducted (September 2015–April 2016) with stewards from additional sites that could not be reached for a site visit.

¹³ McMillen et al. 2017b, Svendsen and Campbell 2010

¹⁴ For full results from the 117 interviews, see Svendsen and Campbell 2010

Interviewees were men and women, primarily between 30 and 50 years of age, and they represent a range of people who were affected by the events of 9/11, from surviving family members to community members to coworkers to religious and civic leaders, among others. We also took photographs to capture memorials' overall design, specific features of interest, and events held on site.

Using three social-ecological resilience frameworks,¹⁵ we deductively coded our qualitative data from recorded and transcribed interviews. Working iteratively between the theoretical frameworks and the dataset, we identified five indicators as most significant for contributing to social resilience across scales and site types: place attachment, collective identity, social cohesion, social networks, and knowledge exchange and diversity. In the following section, we identify and interpret how these abstract concepts are manifested through UES at the living memorial sites.

Results

These living memorials reflect the place-based resources, attitudes, lifestyles, and cultures of the communities that created them. Most were initiated by individuals, informal groups, and civic organizations rather than by government agencies—though they often collaborate with the public sector for access to space and resources.

They vary greatly in form, from single trees to forests, and involve both the rededication of existing green space as well as the creation of new green space. They are in forests, oceanfront, parks, community gardens, town centers, found space (e.g., traffic islands, vacant lots), and on school and hospital grounds. They honor victims from among the nearly 3,000 who perished, as well as responders and survivors.

Some of these sites have changed over time to commemorate other events and losses in addition to the initial event of 9/11; and the creators of these sites bring the social learning, relationships, and practices that were fostered on one site to their interactions with other sites and groups. The creation and ongoing stewardship of memorials both demonstrates and supports social resilience in a number of ways.

Place Attachment: Demonstrated Through Site Selection, Caretaking, and Planning for the Future

In some cases, an existing attachment to a particular place drove the decision to create the memorial there; a process that, in turn, heightened the attachment to place. For example, in Babylon (Long Island, NY), a beachfront site was chosen because surviving family members had fond memories of spending time with their loved ones at the beach. Although they were from different places in town, “the one thing [we] had in common, we’re a coastal community. Everybody went to the beach.”

Once the memorial was created, another layer of meaning and attachment was formed and enacted through memorial ceremonies and rituals, acts of planting and maintenance, and visitation for quiet contemplation. In addition, a number of environmentally-oriented projects, done in service to the larger community and in commemoration of those affected by 9/11, have been created at the site. There are native species plantings, bird houses to support native birds, and plans to create a demonstration site for sustainable energy (Figure 1). This site illustrates how the social resilience of the community has inspired the promotion of ecological resilience as well, a demonstration of the interrelationships between social and ecological resilience.

¹⁵ Berkes and Ross 2013, Chapin et al. 2009, Rockefeller Foundation 2014



Figure 1: Babylon Beach, Long Island, New York

Stewards in Babylon and at other sites expressed a strong sense of pride in their sites for their physical appearance, but also for the important (sometimes sacred) roles they serve in honoring those lost, supporting those grieving, and offering a place for reflection.

The attachment stewards feel to their site is expressed through the rights they feel to the space as well as their responsibility in maintaining it. One widow whose husband died in the World Trade Center has rewritten her will to allow for the ongoing maintenance of the Richard Cudina Memorial in Lebanon, New Jersey, after her death.

Other stewards demonstrated strong place attachment through carefully training the next generation of volunteer stewards to ensure their site carries on beyond their tenure and is maintained in the long term. Striking examples of place attachment as well as the ability to bounce back from disturbance have been demonstrated when stewards defended their sites from development and restored them following significant damages resulting from Hurricane Sandy.



Social Cohesion and Collective Identity: Seeing as a Group

The process of working together in creating and maintaining sites helped to foster and reinforce a sense of shared identity. **“Being in that location brought a sense of community and camaraderie and that sense of building something together... a sense of purpose together”** said one steward of the Living Memorial Grove (NYC, NY). Others referred to the process as “community building work” and reflected

on the “**natural kinship all of us felt in being New Yorkers [while working together at the memorial]**” and how “**we have tears together.**”

In this way, living memorial sites are social innovations, community-based responses to facilitate the mourning process by offsetting feelings of helplessness, strengthening social support and well-being, and enhancing the appearance of the neighborhood.

Stewards referred to the sacred nature of the collaborative work saying, “We were grieving and our desire to do something...action in grieving...typical New Yorker reaction...all of us felt like we needed to do something...Digging by hand was a manifestation of some kind of spirituality.”

Creating an identity not only as those in mourning, but as survivors who encourage growth and life has been an important thread woven into the narrative of many memorial sites. At the same time, many sites include literal and symbolic demonstrations of patriotism (e.g., American flags, eagles, and the colors red, white, and blue), calling upon a collective identity people that some people feel as Americans, and perhaps in

distinction to other groups who they perceive as “other.” It is important to bear in mind that **crafting of collective identity is a process that can both bind or divide**; we must attend to processes of both inclusion and exclusion that occur in the formation and expression of collective identities.

Memorial anniversary events at the sites can also reinforce the identity and social cohesion of the group, for example when bag pipes are played to commemorate fallen fire fighters and police officers, when signage and speeches are in Russian, or when a Native American tradition is adapted for other populations.

In some cases though, a strengthened sense of identity and cohesion among some can lead to exclusions among others. For example, many stewardship groups described struggles in defining who counts as being “from” a community in placing names on memorial plaques. Defining who is “from” a place can be challenging in an era where people often move several times from their childhood home, to where they are educated, to where they later live and work as adults.

Other groups struggled with defining who “counted” as a 9/11 victim, given that there were delayed losses of life related to stresses and exposures of survivors and first responders who worked in recovery efforts. We also see examples of sites that seem to be less resilient or adaptive. **Those that are rigidly focused on 9/11, or on the death of one person, without expanding their narrative and outreach risk losing relevance as the community inevitably shifts its focus over time.** These sites seem brittle, rather than flexible, and so they become vulnerable as the original stewards progress in age, and new generations have no direct memory of or less attachment to the time of 9/11. We found examples of adaptation, however, with sites adding additional names on these plaques to include these later victims and with sites expanding their narrative to commemorate victims of other acts of terrorism, war veterans, and all children; and to promote peace.



September 11 Family Group

The residents of Russian descent who created a memorial at their neighborhood park in Coney Island, Brooklyn, New York changed their name from the “Russian Family Group” to the “September 11 Family Group” in order to signal their broader inclusiveness, as they support public school group tours, involvement from local politicians, and family days for all neighborhood residents of any descent.

Overall, the bonding that happens at these events can promote the formation of support networks that go beyond site boundaries and existing social groups, and these have the potential to promote resilience more broadly. These stewards explained how creating the 9/11 memorial brought them together. Previously, they had not known each other but 15 years later, their families had grown together and supported each other through unexpected life events.

[Stewardship Expands the Breadth and Scope of Social Networks for Individuals and Organizations](#)

As group identity is reinforced, social cohesion can be strengthened and social networks can be expanded—other well described indicators of social resilience. Community engagement has long been associated with social integration. Stewardship, as a form of community engagement, facilitates interactions among diverse groups, allowing for opportunities to develop relationships and expand their social networks. For example:

-)] At the Garden of Healing in Staten Island, NY, the Summer Youth Employment Project, Federated Garden Club, Veterans, Fire Department, Public School 23, Gateway Rotary, Boy Scouts, an artist group, a poetry group, and students from the College of Staten Island all joined in the work with the Garden Club stewards.
-)] At Sterling Forest in Tuxedo, NY, family members affected by 9/11 were joined by survivors of violence from Sierra Leone in planting trees to restore the forest and recovering from their losses.

-) At the Crescent Beach Flagpole Memorial in Staten Island, NY, creating the memorial and carrying out subsequent commemorative ceremonies became an extension of their annual block party when the whole neighborhood gathers to socialize.

We found that through the processes of creating and maintaining memorials, stewards develop new or strengthen existing relationships at both the interpersonal level and the organizational level.

Interpersonal relationships among stewards can be much like those among members of support groups who help each other cope with and recover from a difficult event or experience. These relationships did not end with commemorating the events related to 9/11; they became social resources that were drawn upon in response to other disturbances, from the inevitable changes in one's personal life to acute external events including Hurricane Sandy.

For example, although the storm destroyed the Crescent Beach Flagpole memorial, the relationships among neighbors endured. **“Just because the site came down, I don't think the relationships diminished...we still see those people in the neighborhood.”** When Sandy damaged the power lines in his neighborhood, the chief steward and his friend (an electrician) helped their neighbors return their electrical power and **“people were so grateful. Oh, how we ate! There was always dinners coming every night to us from those we helped out.”**

Individuals can also serve key roles within networks of individuals and organizations involved in community recovery. For example, the creator of a living memorial, The Sunflower Project NYC, who was also a long-term volunteer at Ground Zero, went on to become a member of a Certified Emergency Response Team. Some of the friends she made in the process even went on to respond to Hurricane Katrina in New Orleans, and she applied her training in the recovery efforts following Hurricane Sandy.

A widow who lost her husband who was a fire fighter. In addition to her initiatives at the Sterling Forest memorial, she also started a nonprofit organization to support resilience training for fire fighters and others in disaster response. Her organization was also very active after Hurricane Sandy because many firefighters live in the Rockaways, NY, a coastal peninsula greatly affected by the hurricane.

Finally, we see that stewardship organizations have capacity to alter or expand their programs in response to different disturbances.

The Daffodil Project was created as a response to 9/11 and originally focused on distributing bulbs for individuals and groups to plant in NYC parkland to commemorate recovery from the event; however, in response to Sandy, organizers expanded their efforts and the reach of their bulb distribution to neighborhoods most affected by the hurricane. The disturbance created by Sandy was seen as an opportunity to expand their outreach and involvement beyond parks to:

-) public schools;
-) the New York City Housing Authority garden and greening program on public housing grounds;
-) individual residents with places to plant;
-) senior centers; and
-) street tree stewards working on the streetscape.

The need created by Hurricane Sandy gave the project and the sponsoring organization, New Yorkers for Parks, a renewed sense of purpose—to be more involved with neighborhoods, especially in the Sandy affected areas. The Daffodil Project is now focusing on returning open spaces to normalcy after Hurricane Sandy, and working with neighborhoods that are under-resourced.

For some groups, 9/11 is still a resonating narrative, for others, less so. Across sites, we see that people and organizations involved in the stewardship of specific living memorial sites can become involved in supporting others in need as well as supporting their fellow stewards in coping with and responding to other challenges.

Promote Knowledge Exchange and Diversity:

Learning from Others in the Past and Present

We also see living memorials as sites that promote the exchange and transmission of diverse kinds of knowledge. As with biological diversity, a diversity of ways of knowing is a resource to draw upon in developing creative and adaptive responses to disturbance.

Examples include integrating Native American perspectives and traditions on healing; experimenting with coastal restoration plantings; and integrating interfaith programming about peace, tolerance, and understanding. Some sites also foster the retention and transmission of stories with lessons about adapting to disturbance, be it natural, personal, or political. In addition to the informal sharing of information that happens among stewards as they tend their sites, stewards also shared examples about involving school groups at the sites to learn about history, remembering those who died, and teaching about ethics. Stewards referred to their sites as a “keeper of history” and a way to “keep the memory alive.”

For example, John Bowne Agricultural High School in Flushing, Queens (NYC) has taken on the responsibility of caring for those seedlings grown from the “survivor tree” that survived at the crash site in Manhattan, also referred to as Ground Zero.

The 9/11 survivor tree, like other survivor trees, are those that have witnessed and withstood extreme disturbances and become compelling symbols for communities seeking to respond, recover, and reconnect following a tragedy.¹⁶ This individual tree that survived the destruction on 9/11 at the Twin Towers in New York City (NYC), and its progeny have become symbols of resilience, strength, and unity. Their propagation has become an integrated lesson in history, tolerance, and horticulture.

The faculty member at the school who runs the program, described the impact on students:

“[The students who care for the trees] were emotionally attached [to the trees]...for a lot of reasons...it really helped them through difficult times having caretaker roles, and then through us, they were taught about 9/11 and then became the teachers for other kids about 9/11... even if they didn’t live at that time...As an educator I see the importance of this project not only for education, nursery stock, but, my God, the importance of not forgetting. Three thousand died at this site, but this tree can give meaning to them, so it was powerful.”

¹⁶ McMillen et al. 2017b

The distribution of offspring from the Survivor Tree has created a network of sites and communities that are connected and inspired by the tree.¹⁷ We documented six living memorial sites in the NYC area that had planted survivor trees; however, the distribution of these trees goes beyond 9/11 memorial sites.

Other sites that plant the tree as a symbol of resilience and renewal following other tragedies include Joplin, MO, to commemorate recovery from the 2011 tornado; Newton, CT, to commemorate recovery from the 2012 attack at Sandy Hook Elementary School; and Orlando, FL, to commemorate recovery from the 2016 Pulse Night Club Shooting.¹⁸

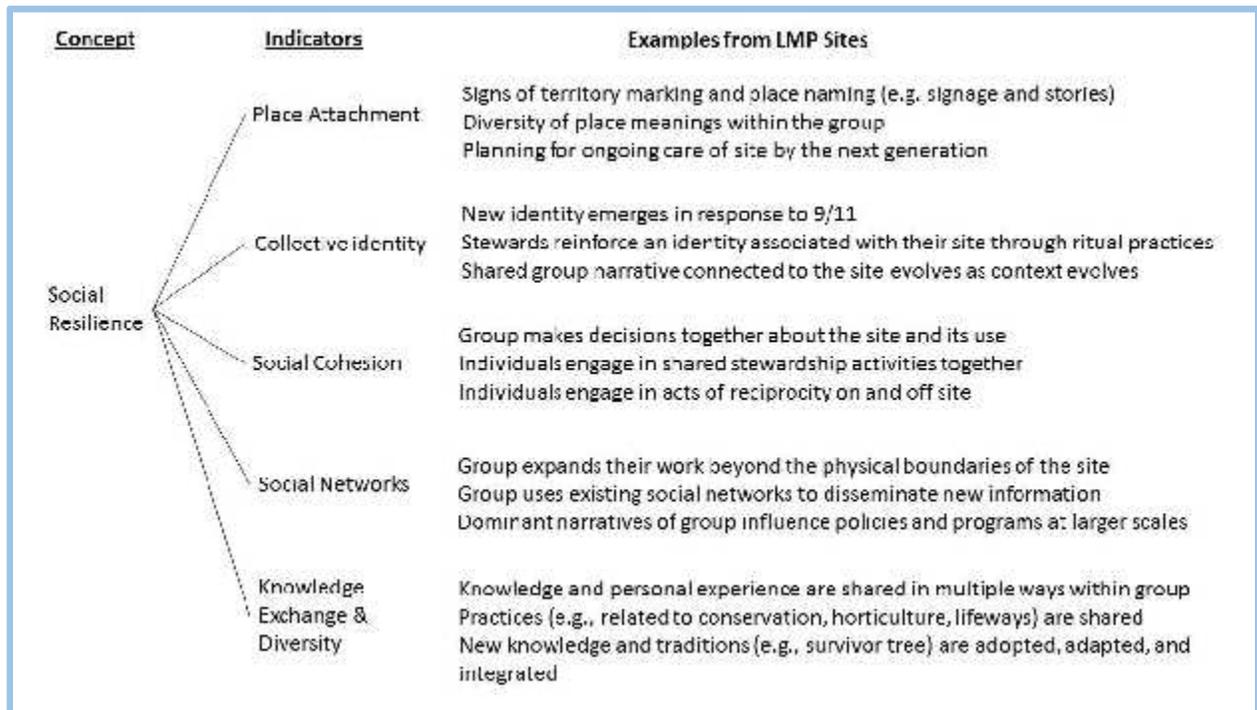


¹⁷ McMillen 2017a

¹⁸ USDA Forest Service 2017

Discussion

We described the specific practices through which these indicators of social resilience can be observed in living memorials. Here we discuss how these practices translate to other sites so others can recognize and evaluate social resilience at the community level through: attachment to place, collective identity, social cohesion, social networks, and knowledge exchange and diversity.



These suggestions of how to recognize resilience are meant to help **“train the eye”** of both researchers evaluating the near term and future sustainability of stewardship practices as well as practitioners aiming to support stewardship and strengthen communities’ readiness for and recovery from disturbance.¹⁹ We see these living memorial sites as both indicators of social resilience to the specific disturbance of 9/11 but also as indicators of general resilience. In other words, the creation and maintenance of some memorials (described above) strengthen adaptive capacity and the ability to respond to subsequent disturbances following 9/11.

Demonstrating Social Resilience Over Time

We believe attachment to place undergirds and is a prerequisite for other indicators of social resilience.²⁰ These attachments may not and need not be homogeneous within the community. In fact, communities with a “diversity of place meanings” and multiple kinds of attachment to place may be more resilient and adaptable to social change.²¹ The broader importance of these concepts for managers is that stronger connections to a place, through both sense of place and place attachment, are tied to

¹⁹ See also Svendsen et al. 2014

²⁰ cf. Campbell and Wiesen 2009

²¹ Stedman 1999, p. 769

pro-environmental behavior²² as well as the inclination to develop or participate in climate adaptation planning processes,²³ which has implications for strengthening general resilience more broadly.

Many urban environmental stewards act upon a sense of rights and responsibilities to a particular garden, memorial, or park. To recognize place attachment at the community level, we recommend looking for signs of

-) territory marking and place naming (e.g., through signage and stories);
-) plans for transfer of site stewardship into the next generations (e.g., individual leadership turnover, new organizations formed); and
-) the strength of the local protective response if the site is threatened by change (e.g., memorial as preservation strategy in the face of development pressures).

Community-based stewardship is not only momentary or ephemeral; when place attachment is strong, we expect that we will see these acts of claiming territory and managing it over time despite changing external conditions and changing internal group dynamics.

To recognize collective identity around a specific site, one can examine:

-) who is included or excluded in tight-knit groups;
-) whether stewards articulate an identity associated with their site (e.g., garden, living memorial) through ritual practices;
-) whether a new identity emerged following an acute event (e.g., first responders, 9/11 family members); and
-) if the group has a shared narrative connected to their site.²⁴ These identities can be expressed publicly through spoken narratives, written statements, and/or physical acts.²⁵

When collective identities are site-specific or place-based, there can be clear overlap with some of the practices described as part of place attachment above. Other identities may emerge through communities of interest or shared experiences (e.g., 9/11 survivors) that are not place-bound, but rather are relational links spanning across space.

While the evidence we presented from LMP sites shows clear attachment to place, many of the actions undertaken by stewards might also be explained by a more personal sense of place identity.²⁶ For example, selecting a memorial site may be entwined with one's own personal identity as much as it reflects an attachment to a particular place. We find that stewardship of a specific site presents an opportunity for groups to express a particular collective identity or to negotiate multiple identities through shared creation and management of land.

Social cohesion can be understood by considering the strength and number of bonding ties within the group as well as the degree to which: a group makes decisions together about the site and its use;

²² Bendt et al. 2013

²³ Kudryavtsev et al. 2012

²⁴ Fominaya 2010

²⁵ Proshansky1983

²⁶ Kearns and Forrest 2000

individuals engage in stewardship activities together; and individuals engage in acts of reciprocity on and off site. **Collective decision-making is an indicator of a cohesive group with governance capacity.**²⁷

We believe that the strength of social networks can be indicated when: a group expands their work beyond the physical boundaries of the site; a group uses existing social networks to disseminate new information; and when newly formed weak ties among members emerge (including those related to enhanced trust and reciprocity).

Going beyond the specific management of the site, we see the way that interaction and sociability enabled through site stewardship, for example, can strengthen reciprocity among members. Through the acts of planting, weeding, and collectively creating a living memorial, stewards have greater opportunities to know each other and strengthen social bonds that go beyond the memorial site itself. T

he strength of social networks is also indicated when dominant narratives of the group become entwined in policies and programs at larger scales. For example, community-based narratives calling for local memorialization of 9/11 have challenged existing rules that limit the creation of new memorials in parks, and policies have been modified. Finally, a community's desire to plant on urban public land also challenges rules, catalyzing modifications to community and public land management practices.

Resilience is expressed in the narratives used to leverage resources for these spaces. Living memorials, in particular, make special use of the flora planted in their sites to tell stories and keep memories alive, including survivor trees as well as other flora with symbolic resonance.²⁸

We encountered examples of living memorial stewards keeping development and land use changes at bay because of the significance of their sites and the stories they represent. Resilience can be detected through:

-) examining how knowledge and experience gets shared and disseminated;
-) the degree to which material practices (e.g., related to ecological conservation, horticulture, lifeways) are shared; and
-) whether the group adopts, adapts, and/or integrates outside traditions for their own purposes.

Increasing the opportunities for new ideas from outside and exchanging knowledge within the group itself can expand the group's understanding of its purpose and relationship to other people, events, and issues, thereby creating a stronger and more solid bridge to other groups and issues.

²⁷ Campbell 2016

²⁸ McMillen et al. 2017b

Conclusions: Recognizing and Supporting Social Resilience

In this chapter, we have illustrated how UES can enhance social resilience through: attachment to place, collective identity, social cohesion, social networks, and knowledge exchange and diversity. Social indicators of resilience reflect dynamic processes critical to sustainability goals and objectives.²⁹

In NYC and other urban areas, UES is an important component in community-based recovery programs as well as in long-term sustainability planning initiatives. In the examples we shared here, we see that the meanings and effects of the LMP sites go beyond 9/11 and beyond the specific footprint of the sites.

With population growth and climate change issues at the forefront of urban policies throughout the world, it is expected that civic stewardship groups will continue to respond to disturbance and change through acts of creation, management, and caretaking. These stewards exhibit a sense of rights and responsibilities connected to place attachment and identity. How these acts are identified and interpreted by decisionmakers will relate to the successful development and adaptation of sustainability and resilience plans, embodying a greater attunement to the dynamics of social resilience.

We see the creation, ongoing maintenance and evolution of these LMP sites as first, part of the response to disturbance, then critical to the recovery of the community, and—as we have seen over time with the evolution of sites—and finally part of the readiness or adaptive capacity of communities to respond to and recover from subsequent disturbances.

Future research and practice should explore how to cultivate and support stewardship over time, including times when there are unexpected shifts or transitions in resources, conditions, and governance. Such work may inspire and shape the practice of collaboration across agencies and among managers, practitioners, and researchers as we learn more about how resilience is demonstrated and activated in our cities and towns.

²⁹e.g., Hicks et al. 2016

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