Human Dimensions of Roadside Vegetation Management

Ongoing Main Goals:

• Understand barriers to and opportunities to roadside vegetation management among diverse stakeholder groups.

• Explore the conditions within which individuals are willing to adopt Stormwise tree management strategies.

"The social science of vegetation management"

Principal Investigator:

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Students involved:

Dan Hale	MS 2019	Jacob Cabral	MS ongoing
Steven DiFalco	MS 2020	Emlyn Crocker	MS ongoing
Danielle Kloster	PhD 2020		

~20 undergraduates

Stakeholders involved:

Eversource employees - arborists, community liaisons (exploratory data)
Tree crews
Residents
Roadside forest managers

Who is to Blame? – Media Analysis

Taylor & Francis
Taylor & Francis Group

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A national and local media perspective on responsibility for and solutions to storm-related power outages in the northeastern United States

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ABSTRACT

Major storms in the northeastern United States in 2011 and 2012 caused widespread power outages, bringing attention to the vulnerability of utility infrastructure as a result of extreme weather and environmental change. Media coverage of such focusing events provides context for and can affect government and public response. Our objective was to analyze gatekeeping, agenda setting, and framing in the *New York Times* (NYT) and local newspapers covering power outages related to large storm events in 2011 and 2012 (Tropical Storm Irene, October snowstorm, Hurricane Sandy). Government and utility officials focused on structural solutions to mitigate future storm impacts, whereas residents and businesses targeted individual actions. NYT interviews included residents more frequently than local newspapers, influencing coverage of impacts and solutions. Geographic differences between NYT and local newspapers' foci may relate to coverage of solutions to and responsibility for outages. Our findings demonstrate the importance of collective action toward shared solutions.

Wood Product Recovery - Tree Crews

Tree Crew Perspectives on Wood Product Recovery from Utility Vegetation Management

By Danielle P. Kloster, Anita T. Morzillo, John C. Volin, and Thomas E. Worthley

Abstract. Utility vegetation management generates large quantities of wood that require disposal. To explore opportunities for reducing wood waste and promoting wood recovery, we evaluated the perceptions and experiences of utility-contracted tree crews regarding a wood recovery program. We conducted interviews with tree crew members both involved ($n = 24$) and not involved ($n = 58$) with the pilot program. Interview questions focused on workflow, interactions with homeowners and the public, and opportunities for implementation of a wood recovery program from the crew member perspective. Participants generally had positive attitudes toward a wood recovery program, wanting to provide benefits for communities through revenue from log sales and to reduce wood waste. Potential challenges associated with such a program included: (1) increased time required for tree removal; (2) safety concerns for removing larger logs; (3) physical obstacles such as mailboxes and stone walls; (4) homeowners wanting to keep the wood; and (5) low-quality wood (i.e., containing rot or metal). The protocol was modified to address such concerns. With the input of tree crew members, our findings suggest that a wood recovery program has the potential to be successful in reducing wood waste from utility vegetation management and generating benefits for communities, particularly in urban environments.

Keywords. Interviews; Tree Pruning; Tree Removal; Utility Vegetation Management; Waste Wood Recovery; Wood Products.

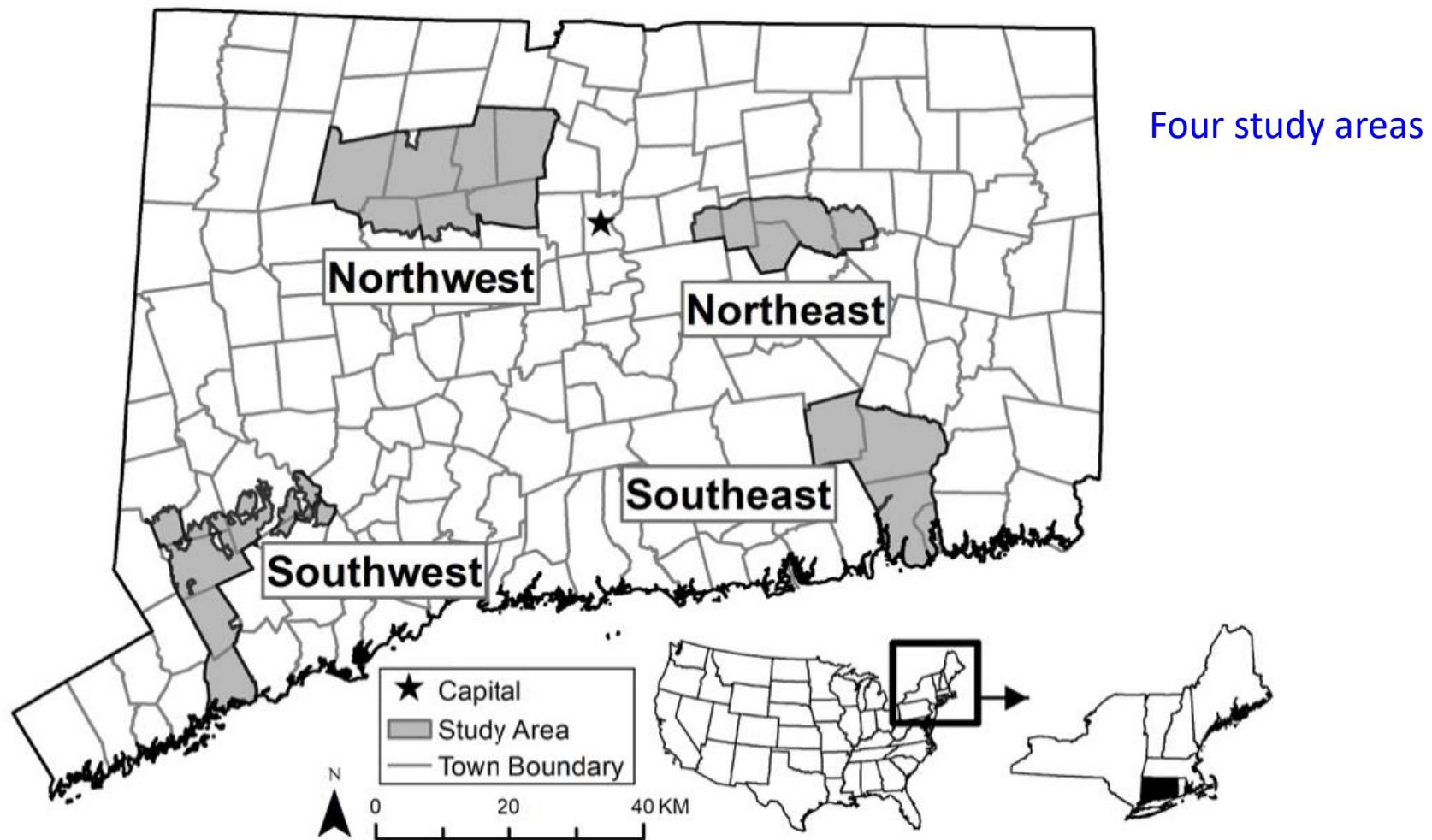# Attitudes Toward Vegetation Management - Residents

Four study areas

Figure 1. Study areas sampled as part of this analysis within the state of Connecticut.

From: DiFalco and Morzillo 2021

Attitudes Toward Vegetation Management - Residents

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RESEARCH ARTICLE

Landscape characteristics and social factors influencing attitudes toward roadside vegetation management

Daniel C. Hale · Anita T. Morzillo

Attitudes along urban-rural gradient - *Hale and Morzillo in prep*

Abstract

Context For the roadside forest, utility vegetation management is a driver of landscape change involving tradeoffs between reliable electric power and preservation of trees. However, little is known about public perceptions of vegetation management in the landscape context.

Objectives Our objective was to evaluate social and residential context characteristics associated with resident attitudes toward roadside utility vegetation management across Connecticut.

Methods We used a mail survey to collect social science data from residents in two study areas in Connecticut. We measured landscape characteristics associated with tree cover and development density at multiple scales around each respondent household. Random forest predictive models were used to assess attitudes toward vegetation management as explained by social and residential context variables.

Results Respondents generally had positive attitudes toward vegetation management, agreeing that it improves public safety and minimizes power outages. Social variables revealed that residents were more likely to have favorable attitudes if they had greater knowledge about trees, believed that trees should be used for human benefits, prioritized reduced power outages over forest aesthetics, and considered changes in the roadside forest to be acceptable. Residential context variables were not as strongly associated with attitudes as social variables, but did rank as important for two out of three attitudes variables.

Conclusions Attitudes toward vegetation management may be influenced by residential context, yet likely are formed independently of it. Spatial heterogeneity of exurban land use and social characteristics suggest encompassing variability in approaches to roadside forest management policy.

Keywords Attitudes · Human dimensions · Landscape ecology · Random forest · Roadside forest management · Vegetation management

Attitudes Toward Vegetation Management - Residents

land MDPI

Comparison of Attitudes towards Roadside Vegetation Management across an Exurban Landscape

Steven DiFalco and Anita T. Morzillo *

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Special issue: Science-policy gaps and their impact on landscape-scale management of natural disasters

Interpolating attitudes toward roadside vegetation - *DiFalco et al. in prep*

Abstract: Exurban development is the fastest growing land use across the United States (US). Its prevalence on the East Coast is susceptible to natural disaster events such as hurricanes and nor'easters. However, the socio-ecological processes related to disaster mitigation within exurban areas remain understudied. Our objective was to integrate social and landscape data to compare resident attitudes towards utility roadside vegetation management across four areas in the state of Connecticut, US. We collected data from residents using two mail surveys completed in 2017 and 2019 ($n = 1962$). From the survey questions, three attitude variables measured perceptions of the utility vegetation management process, and tradeoffs between protecting trees and maintaining reliable power. Across all locations, respondents with more favorable attitudes toward vegetation management were more likely to have greater knowledge about trees, and beliefs that trees should be used for human benefit; land cover characteristics and sociodemographic variables were less strongly associated with attitudes scores. Respondents differed among study areas in their preferences for aesthetics of roadside trees and their basic beliefs regarding the importance of trees. The results suggested that social processes within the exurban landscapes are spatially heterogeneous. Therefore, local variation in residential preferences for vegetation management may influence support for natural disaster management policy.

Keywords: human dimensions; exurban landscapes; vegetation management; natural disasters; natural resource management; storms

check for **updates**

Attitudes Toward Vegetation Management - Residents

Amenities and disamenities of roadside trees - *Kloster et al. in review*

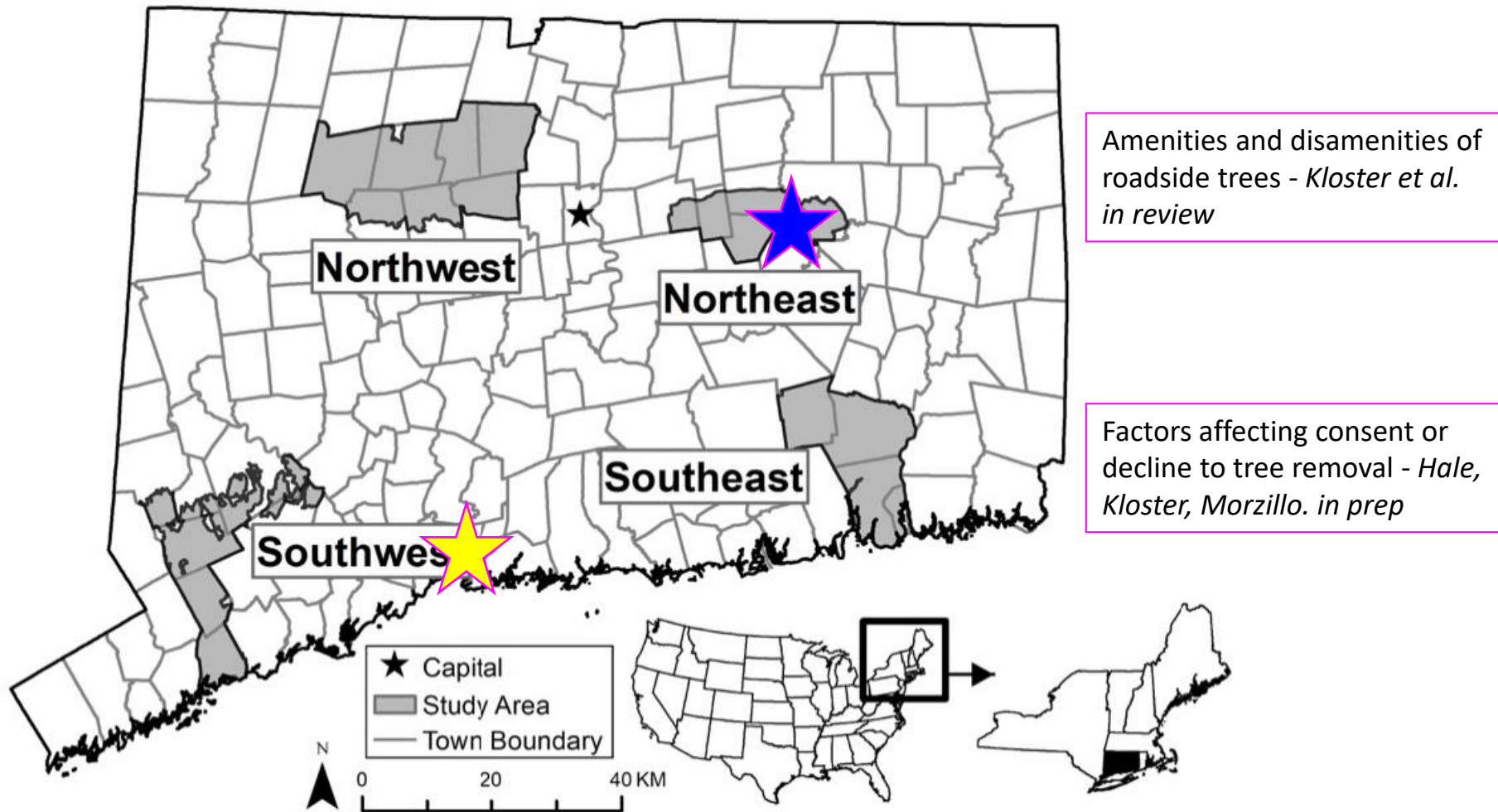Factors affecting consent or decline to tree removal - *Hale, Kloster, Morzillo. in prep*

Figure 1. Study areas sampled as part of this analysis within the state of Connecticut.

From: DiFalco and Morzillo 2021

Managing for Multiple Stressors - Roadside Forest Managers

Objectives:

1. Assess how stakeholder knowledge transfer and decision-making about the roadside forest are affected by multiple forest stressors.

2. Evaluate the relationships between formality of knowledge exchange and adoption of alternative or adaptive management practices.

3. Evaluate stakeholder interrelationships and associated social network structure regarding roadside vegetation management and forest stressors.

4. Understand the interplay of land management objectives and resource constraints on stakeholder interactions and decision-making about roadside forests.

Jacob Cabral, Emlyn Crocker – MS students

Multiple forest stressors! Wind! Gypsy moths!