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Explaining political polarization in environmental governance using narrative analysis

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ABSTRACT. Research into formation of environmental narratives can explain the process of political polarization in environmental governance, or perhaps more constructively, how to avoid it. To do so, we must broaden narrative analysis to include the evolution of relationships between environmental norms in a community and the changing positionality of the researcher. I show how this may be done, by focusing on river governance in post-Tropical Storm Irene New England, USA. The storm left residents in the region bitterly divided over how a river should be governed. Relying on interviews, newspaper articles, and judiciary and town hall proceedings, I show that two narratives coevolved from norms of vulnerability and stewardship as different groups vied for power in river governance. As they did so, the community became polarized as the newer, stewardship-based narrative gained legitimacy by problematizing traditional environmental norms. In response, community members who saw the river as dangerous and the town as vulnerable defended these norms by problematizing the new narrative. Through an iterative process, the different environmental narratives became increasingly relative as each attempted to dictate governance. Ultimately, the narratives became problematized reflections of one another. This process undermined the possibility of compromise or novel governance schemes that may have incorporated different environmental norms. To avoid polarization, researchers must at one time position themselves within the political process but take care to study how this position changes governance.

Key Words: *governance; narratives; New England, USA; politics; rivers*

INTRODUCTION

Increases in political polarization over the last 20 years in the United States have been well documented (Pew Research Center 2014). Although we have come a long way in our understanding of the extent and types of polarization occurring in the United States (see Abramowitz and Saunders 2008, Johnston et al. 2016), less well understood are the social processes that drive these divergences of political attitudes toward ideological extremes (Fiorina and Abrams 2008). Only recently have researchers started applying social theory to the study of political polarization to explain the development of political identities broadly (Bougher 2017). In the context of environmental governance, research into polarization processes is in its infancy.

In this paper, I argue that research on the formation of environmental narratives may explain the process of political polarization in environmental governance, defined here as the set of regulatory processes, mechanisms, and organizations through which political actors influence environmental actions and outcomes (Lemos and Agrawal 2006). An environmental narrative is a story told by an individual or group that converts knowing into telling, that endows experiences with meaning, and that sends messages about the nature of a shared reality between people and the environment (White 1987). I show that if we can broaden current conceptualizations of environmental narratives to better define researcher positionality and include the evolution of relationships between environmental norms like stewardship or vulnerability, we can explain and perhaps mitigate polarization in environmental governance. I argue that polarization happens when a new narrative gains legitimacy by problematizing existing environmental norms. In response, other community members may defend these existing norms by problematizing the new narrative. Through this iterative process, environmental narratives become increasingly relative as each attempts to dictate

governance. Ultimately, narratives may become problematized reflections of one another.

I advance this thesis by answering the following questions in the context of post-Tropical Storm Irene New England, USA: What environmental narratives developed among community members and from where did they originate? How did alternative narratives come to dominate environmental governance after Tropical Storm Irene impacted the region? In what ways did differing narratives influence one another and how did this impact environmental governance and the community? To answer these questions, I studied the portrayal of flood causes and solutions in post-Tropical Storm Irene in western Massachusetts, USA. More specifically, I focused on the Town of Hawley and flood mitigation on the Chickley River.

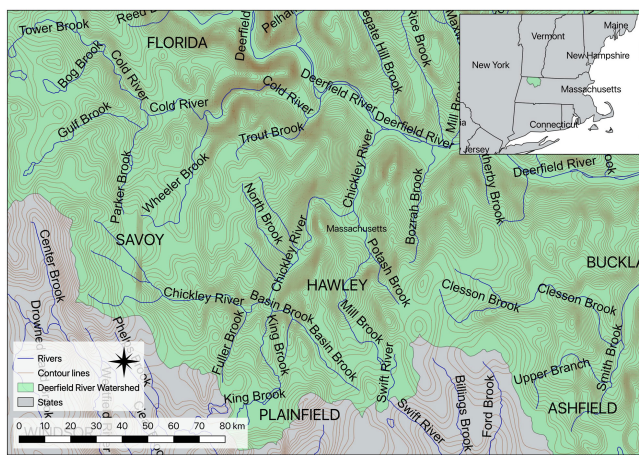
The Town of Hawley, shown in Figure 1, with a population of approximately 350, is confined by steep valleys and has a long history of floods that have altered the physical, political, and economic landscapes. From a socioeconomic perspective, the town comprises a primarily white, home-owning population. The median household income is approximately US\$66,250 (U.S. Census Bureau 2017). Agriculture and forested land form much of the town's economy. Tourism is also an economic driver. Sport-fisherman, white-water enthusiasts, and vacationers tour and own second homes in the region. Thirty percent of occupied homes in Hawley are for seasonal, recreational, or occasional use (U.S. Census Bureau 2010).

Much of the riparian land is privately owned, thus increasing the potential for interactions among landowners recovering from flood impacts (Milman and Warner 2016). Most recently, during Tropical Storm Irene, landslides, riverbank failures, riverbed incision, and sedimentation caused substantial damages to roads, bridges, culverts, parks, croplands, houses, businesses, and

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hospitals (Short Gianotti et al. 2018). The storm left Hawley residents bitterly divided over how the Chickley River should be governed to reduce vulnerability to floods and protect the river. To understand these perspectives, I interviewed residents and reviewed historical river management reports and newspaper articles. These data were collected within an expanded narrative analysis framework, which I describe after providing additional background on environmental narratives research. I provide results from my analysis and end by answering the research questions posed in this section.

Fig. 1. Chickley River in the Deerfield River Watershed, part of the Connecticut River Valley, and counties in western Massachusetts, USA.



Positionality in environmental narrative research

Over the last three decades, a dichotomy has developed within narrative research (Jones and McBeth 2010). On one hand, environmental narrative research focuses on environmental governance strategies that communities should pursue (e.g., Fairhead and Leach 1995, Bridge and McManus 2000, Guldbrandsen and Holland 2001). On the other, research conceptualizes narratives as environmental politics and explains how different groups work to overcome differences or undermine alternative strategies (e.g., Arts and Buizer 2009, Kleinschmit et al. 2009, Medina et al. 2009, Steffek 2009, Emery et al. 2013, Winkel 2014). The difference between them is based on the relationship between the researcher and the people being investigated, i.e., the researcher's positionality (England 1994).

Much of the early environmental narrative research, conducted within the disciplines of political ecology and environmental sociology throughout the last three decades operated under the premise that communities and societies may make decisions about resources that are based on outdated or biased narratives (e.g., Leach and Mearns 1996, Moore 1996). Following from this, it was the responsibility of scientists to position themselves within the context of their research to challenge these ideas by generating "compelling counter-narratives" (Walker 2006). The idea here is that in order to drive changes in governance, research must challenge these dominant ways of thinking with alternative narratives (Roe 1991, 1994). The assumption continues; to do this, we must understand the social conditions that reproduce

dominant and biased ways of thinking, and then use this understanding to create alternative narratives that are scientifically robust, socially equitable, and can sustain and liberate both humans and nature (Forsyth 2003, Walker 2006).

This idea that environmental social science must provide a more accurate account, or narrative, that should determine communities' relationships with environments draws on a modernist-normative research paradigm found across the social sciences (Luhman and Boje 2001). This paradigm asserts that narrative research seeks to uncover a more accurate story about "reality" and assumes that dominant, existing narratives are told to meet the goals of specific powerful groups (Knorr-Cetina and Amman 1990, Boland and Schultze 1996, Czarniawska 1997, O'Connor 1999). This normative framework allowed researchers to directly confront and challenge discourse that was constructed to marginalize nature and specific groups of people for specific reasons. This early, critical research viewed narratives as tools to be used to create societal change to reinforce modernity and less as social phenomena in their own right. However, few were trying to determine how this process occurs or what would determine success. This research was occurring, but outside of environmental social science, with a few exceptions (e.g., Leach et al. 2010, Bausch et al. 2015).

Outside of the environmental social sciences throughout the 1980s and 1990s, narratives were often understood as ways of ordering relations, which generate their own imaginative spaces and times (Clifford 1986, Van Maanen 1988). This research positions the investigator outside of the community in question to provide knowledge of how or when alternative narratives change governance structures. The researcher does not attempt to change governance themselves. In this conceptualization, narratives create stories about possible "realities"; they are not descriptions of real realities (Mink 1978). This conceptualization draws on the idea that language gives form to reality (Berger and Luckman 1967, Linstead 1994, Hatch 1997, Alvesson and Skoldberg 2000), and the researcher's position allows them to understand how this happens. In recent years, environmental social scientists have increasingly conceptualized narratives in this way in an effort to understand politics (see Arts and Buizer 2009, Kleinschmit et al. 2009, Medina et al. 2009, Steffek 2009, Emery et al. 2013, Winkel 2014). In much of this work, narratives are conceptualized as strategies used by groups to organize a social-ecological system and render it governable (Stone 2002). They are portrayed as stories that circulate in a policy arena and either stabilize or destabilize governance structures by providing legitimacy, or orchestrating crisis and the need for change (Winkel 2014).

Both environmental narrative research streams, defined by the positionality of the researcher either within the narrative production process or documenting narrative development to understand politics, have matured and provide necessary insights into how we should and do govern environments. However, if we as researchers are interested in navigating the political process to advance new, more inclusive norms like stewardship, defined here as actions taken to protect, care for, or responsibly use the environment (Bennett et al. 2018), we must attempt to understand our intervention as a socially constructed narrative that exists alongside others in environmental governance. This would allow us to expand governance to include such norms while considering

the ramifications of doing so within a particular community. The alternative to this approach would be the heavy-handed enforcement of new norms within environmental governance in an attempt to ostracize traditional norms, which I show may end in stalemate and political polarization.

RESEARCH DESIGN

To answer my research questions, I analyzed (1) 38 newspaper articles about the community and state response following Tropical Storm Irene, (2) Massachusetts and municipal judiciary and town hall proceedings including communiques and transcripts, (3) historical reports from the U.S. Geological Survey and Army Corps of Engineers, and (4) I conducted 41 semistructured interviews with key decision makers and riparian land-owning stakeholders in the area beginning in mid-2014 and continuing through 2017. Riparian landowning interviewees were identified using a random stratified sampling strategy. Tax assessor data from the Massachusetts Office of Geographic Information (MassGIS 2015) was overlaid with FEMA floodplain maps to obtain a list of riparian properties.

Randomized landowners were contacted by telephone. Decision makers were identified by land owning interviewees and communiques and transcripts. In total, 41 individuals agreed to be interviewed. Nine interviewees were female and 32 were male; 9 were under 50 years of age; 17 had owned their land for less than 30 years; 13 used their land for agricultural purposes, 12 for residential, and the remainder of the parcels were forested; all interviewees had been impacted by flooding at some point during their land tenure. Although not all interviewees lived along the Chickley River, all considered themselves stakeholders and were willing to share their perspectives on the history of environmental politics and flood mitigation on the Chickley River.

Interviews consisted of a series of open-ended questions about personal experiences with floods, flood recovery strategies in the community, perspectives on the Chickley River case, the history of river management in the area, and normative questions to understand problems with current strategies and alternatives. All interviews were tape recorded and transcribed. NVivo 10 qualitative analysis software was used to code interview responses. Grounded theory analysis was employed (Corbin and Strauss 1990) to initially analyze interview transcriptions. I continued to contact and interview landowners in my sample population until additional interviews in each group provided very little new information, i.e., theoretical saturation (Corbin and Strauss 1990).

Newspaper articles, identified by searching western Massachusetts-based newspaper archives for references to Tropical Storm Irene and the Chickley River, historical reports, and judiciary and town hall proceedings were also coded using NVivo 10 qualitative software. These data were used with interview data to triangulate the history and evolution of the political polarization that arose in the Chickley River restoration process. A subsequent round of coding, including only interview data, was used to cluster frames and narrative components that identified three unique environmental narratives on the Chickley River. I described the three narratives following the approach developed by Jones and McBeth (2010). This includes (1) origins; (2) a plot providing both the relationships between the framing and structuring causal mechanisms; (3) characters who are portrayed as fixers of the

problem (heroes), vilified as causers of the problem (villains or others), or victims (those harmed by the problem); and (4) norms that determine the moral of the story, where a policy solution is normally offered.

The Jones and McBeth (2010) framework was chosen for this analysis because it is one of the few narrative analysis approaches that allows narratives to be compared but does not assume that narratives are entirely relative, which I observed in my data. This means I assume and show that environmental narratives in a community have somewhat unique origins. This assumption allows me to show how they interact, evolve, and become relative.

RESULTS

From restraining rivers to freeing them, 1938–1996

The traditional approach to flood mitigation on the Chickley River in Hawley, MA, which interviewees claimed grew from the recovery of devastating flood impacts in 1938, included dam building, seasonal river dredging, and berm creation to move flood waters away from Hawley quickly. The approach was institutionalized by the Army Corps of Engineers and President Franklin Roosevelt and his New Deal supporters who pushed for a federal valley authority across the entire Connecticut River Valley that would provide flood protection, hydropower, and economic development. As described by Vogel and Lacey (2012), this New Deal goal of integrated, valley-wide river management was never met because of the persistence of local communities, including Hawley, in their attempts to retain the authority to manage local reaches as they saw fit. This resulted in river governance in western Massachusetts and Vermont in which communities retained decision-making authority but relied on the institutional and functional support of the Army Corps. This authority was slowly eroded, beginning in the 1970s and lost in 1996 as river management decision-making authority was transferred to the state and local decision-making bodies who operated per state instructions.

Environmental governance of rivers in western Massachusetts changed in tandem with that of the rest of the United States during the 1970s. The major environmental legislation that was passed during this time period was ushered in by an environmental movement that has been well documented (e.g., Dunlap and Mertig 2014). This new governance structure was introduced by the passage of the U.S. Endangered Species Act in 1973 and institutionalized by the Massachusetts Rivers Protection Act of 1996, which expanded the Massachusetts Wetlands Protection Act and claims to protect “nearly 9,000 miles of Massachusetts riverbanks - helping keep water clean, preserving wildlife habitat, and controlling flooding” (MGL 1996). The law creates a 200-foot riverfront area that extends on both sides of rivers and streams, within which development is restricted. The Rivers Protection Act represented the final step in a radical restructuring of river governance compared to the traditional community-U.S. Army Corps of Engineers combined approach.

The logic in the passage of the Rivers Protection Act was that river governance in western Massachusetts must be reestablished to embody environmental stewardship, and by doing so communities would be better protected from flood impacts because it was designed “to encourage and establish open space along rivers.” This, in effect, would reduce communities’

vulnerability to flooding. Although the new approach to river governance did have the intended effects in many cases, this institutionalization of environmental stewardship in river governance had the unintended effect of creating animosity among residents who viewed rivers as dangerous and saw local officials as more legitimate than decision makers in Boston (Milman and Warner 2016, Milman et al. 2018, Short Gianotti et al. 2018). Tropical Storm Irene exacerbated this animosity because this stewardship-based governance approach was seen to be inadequate by many community members.

A return to river restraint, 2011

On 22 August 2011, Hurricane Irene traveled up the east coast of the United States causing damages estimated in the billions of dollars (Federal Emergency Management Agency 2013). Although the hurricane was downgraded to a tropical storm before entering New England on 28 August 2011, it brought a period of intense rainfall with totals averaging up to 25 cm over western Massachusetts. The rainfall and resulting runoff caused several rivers in western Massachusetts to peak at record levels during 28-29 August 2011. On 3 September 3 2011, a presidential disaster declaration (FEMA-4028-DR) was issued for western Massachusetts (Federal Emergency Management Agency 2013). As of February 2013, Federal financial assistance to western Massachusetts for recovery from Tropical Storm Irene exceeded US\$11 million for individual assistance and US\$53 million for public assistance (Federal Emergency Management Agency 2013). Flood damage along the Chickley River is shown in Figure 2. Numerous homes, buildings, municipal infrastructure, and agricultural fields along the reach were impacted.

Fig. 2. Flood impacts along the Chickley River during and after Tropical Storm Irene. The picture on the left shows road damage during Tropical Storm Irene. The picture in the upper right shows municipal building damage in Hawley after the storm. The picture in the lower right shows damage along the Chickley River after the storm.



Prior to Tropical Storm Irene, the Chickley River was 15 m wide on average and was defined by its complex habitat consisting of gravel bars, boulders, and trees that supported a variety of trout and other riverine species. The flooding caused by Tropical Storm Irene on 29 August 2011 widened the Chickley River with bank erosion of more than 12 m in some locations. Water flows spread

out across the wide flat channel bottom; this type of rapid widening can be common in heavy storm events and represents a channel's response to the dramatic increase in sediment transport capacity that accompanies extreme, brief, discharges of water. The storm also changed habitat conditions but retained ecosystem complexity; boulders and trees were redeposited in the channel and multiple channel threads began forming shortly after the storm. Geomorphologists predicted that these storm impacts on the river would be short lived and that the river would closely resemble pre-flood conditions within a few years (Field 2012). However, rather than let nature take its course, decision makers in the Town of Hawley and their contractor, ET&L (Eastern Tree and Landscape, Stow, MA) cited the utility of traditional flood management and reshaped the Chickley River.

Decision makers in the Town of Hawley quickly decided that restoration of the Chickley River would entail berms and the channelization of eight km of the river, as seen in Figure 3. Their goal was to return the river to its pre-flood location and restrain river movement to protect riverfront land. They justified this action because days before, the Massachusetts Department of Environmental Protection (DEP) issued emergency regulations that allowed communities to perform work to alter the form and function of rivers as "necessitated by damage caused by Hurricane Irene ... [that includes] stabilization of stream and river banks scoured by flood waters" (10.61-Storm Emergency Regulations in the Aftermath of Hurricane Irene). The emergency regulations effectively suspended the Rivers Protection Act and allowed communities to determine, once again, how to manage particular reaches within their jurisdiction.

Fig. 3. Chickley River after the channelization; approximately eight km of river were dredged and channelized.



The return to a free river, political crisis, and a polarized community, 2011–2018

Citizens of the Town of Hawley and surrounding communities were deeply divided by the Town's channelization efforts. Bitter debates played out in town meetings, the local newspaper, and in social settings throughout the Deerfield River Watershed. The debate revolved around two competing ideas. One group sided with the Town's leadership, and their argument for the channelization was well articulated by a member of the select board when he publicly stated,

When that water came, it did exactly what it wanted to. It didn't care about any emergency, any permits or anything, and if it took out 1000 people, tough shit ... I have pictures of the Army Corps of Engineers that came in and did work in the river after the 1938 hurricane, and

they did exactly what we're doing now. They were in there with what we used to call steam shovels, dredging it and putting the material on the side of the bank.

This perspective was opposed by a second group of citizens and community leaders, whose opposition is best articulated by a member of the Connecticut River Watershed Council when she publicly stated,

It's really clear that the straightening and dredging of the Chickley for several miles went far, far beyond what was necessary to repair and protect roads, bridges and private property, and apparently residents were complaining weeks or months ago. Not only did the work harm wildlife and habitats, it likely increases risk next spring or in any future flooding ... A 4-5 mile stretch of some of the state's best cold-water habitat has been ruined. Obviously, what's done is done. But it's our hope that moving forward the DEP understands that there needs to be better communication and oversight to avoid this kind of environmental tragedy in the future.

Opposition leaders were convinced that the channelization would increase future flood impacts and erosion downstream. They also argued that it was a violation of the Endangered Species Act, given that the Chickley River is habitat for one state-listed fish, the longnose sucker, and two state-listed dragonflies. They stated,

[The Town] straightened the River, increasing the potential to cause future flooding downstream; removed boulders, woody debris, meanders, habitat variability and bank vegetation, all of which degraded fish habitat; dredged and deepened the river in some instances up to 18 feet, which will contribute to increased flood velocities and erosive flows above and below the affected area; and created berms that broke the River's connection with its floodplain. What had been a beautiful cold-water stream now looks like a drainage ditch ... This massive, unpermitted alteration of resource areas protected under the Wetlands Protection Act (M.G.L. c. 131, § 40) constitutes an egregious violation of that Act. That violation will continue until the River is restored to a more natural state that effectively, as required, functions as habitat for a cold-water fishery (retrieved from Citizens' Motion to Intervene Under M.G.L. c. 30A, § 10A 2011).

Opposition leaders petitioned the DEP and other state agencies to force the Town to restore the river to its prechannelized form. This public outcry was so great that the DEP acted in November of 2011. They determined that the town overstepped and degraded the Chickley River and increased the vulnerability of the community to future floods. They fined the town \$575,000 and ordered them to reresore the river to prechannelization conditions by reshaping the river to restore sinuosity, reintroducing structure, e.g., boulders and large woody debris, and replanting vegetation. These actions were intended to transform the river channel back to a more natural, although inevitably still disturbed state, which DEP believed will provide better fish and wildlife habitat than the channelized condition. The DEP also claimed this second restoration would ensure river banks would respond favorably to flood events and reconnected floodplains would allow space for floodwaters and limit impacts on downstream lands.

The restoration of the channelized Chickley River was successful in terms of the Rivers Protection Act, but it polarized the community to the point of political stalemate. Evidence of this polarization can be seen in newspaper headlines, including "Hawley town hall meeting ends in chaos," "Selectboard member resigns amid Chickley River debate." It is also evident in interview data. For example, one interviewee stated, "I say, outside the Army Corps of Engineers, everybody else can stay the hell out of here. Let the local people be heard. They're living there." A town decision maker echoed this sentiment by stating, "as a selectman, the only endangered species I was concerned with was the people of Hawley and their future protection."

Environmental narratives in a polarized community

Through the evolution of environmental governance in western Massachusetts from 1938 to today, three narratives were shaped that can explain how environmental politics in the area became divided and polarized. These narratives are titled, "rivers must be restrained, intervention in rivers should be selective," and "rivers must be free." "Intervention in rivers should be selective" was represented by 19 interviewees. Thirteen interviewees represented the "rivers must be restrained" narrative, and nine represented the "rivers must be free" narrative. Each of these narratives is described in turn.

Rivers must be restrained

The premise of this narrative is that rivers must be actively managed to prevent floods and repaired after floods. Interviewees frame recovery in historical river management strategies, dredging, large woody debris removal, berms, and levees, and perceive future flood impact mitigation as the primary objective of river management. Interviewees argue that the less active intervention in a river, the more likely it is that riverfront lands and infrastructure will be destroyed. This is because, as stated by one interviewee, "we are a mountain town, we have no choice but to live by the river 'cause you can't live on the side of a mountain." They frame their identity as loyal, long-time members of the community and stewards of it with detailed knowledge of historical flood recovery, gained through life experience or imparted to them by past generations. This perspective includes a strong us-versus-them perception of river governance that originated after the state government passed the Rivers Protection Act, which limited their ability to protect themselves from floods, as they saw it. This perception evolved as they witnessed demographic shifts in the community that they blame for what they see as increasing their vulnerability to flooding. They perceived these newcomers as promoting environmental stewardship over community protection. This us-versus-them perspective is also reflected in their conflict management framing, in which they perceive local, long-time authority figures in the community as having the final say in flood recovery. They perceived these authority figures, both selectmen and road bosses, as having developed the institutional knowledge over decades that can keep their community safe. This framing provides the foundation for the narrative advanced by these interviewees that begins with the premise that a river must be tamed or "fixed" to mitigate an ever-present flood risk to the community. One interviewee articulated this narrative:

Without the annual dredging of the rivers like what used to occur, the river's going to ultimately get its way and more land is gonna be eroded... Traditionally, in the

summer, when the river's at the lowest point, the road department, the town crew, used to go in to the river when it was down to a trickle, and, with a backhoe, dredge a channel, remove the silt and whatnot, and stockpile that gravel and silt for future use for road repairs or for sanding in the winter. That was the town's way of recycling. And had that practice been going on, the extent of the damage from Irene would have been minimized. But, the silt had built up so high in the river that it overflowed the banks, and threatened the bridges, and took some of the bridges out, and also forced the water up into the land and that caused the erosion.

Another interviewee described the need for this type of flood recovery strategy in terms of Hawley's vulnerability to flood impacts: "The town went in and fixed the stream. They had a contractor come in and fix the stream. It was just a dredge to get the water out of town [quickly]. I believe the town was trying to do the best that they could for the residents." Another interviewee seconded this idea. "Next time they (Hawley) have a flood, their bridges won't plug up, because the material was removed." When asked about the impact of this dredging and channelization on downstream communities, a third interviewee described the need to increase the scope and scale of structural strategies, i.e., those that displace or block flood waters and include dams, dredging, levees, and spillways, in the watershed; she stated, "if the river had been dredged all the way from, Jacksonville, Vermont, down through and it was channeled, the river would stay within its bounds."

When asked about the impact of reach or watershed scale channelization and dredging on the local environment, the 13 interviewees subscribing to this narrative perceived their impact on the riverine environment as negligible or restorative of those components of the environment they valued. Interviewees perceived the riverine environment as resilient and unlikely to be impacted by channelization. For example, one interviewee shared this opinion in the context of the channelization of the Chickley by stating, "[the town] fixed it. They moved the material out of the brooks, so there was a brook bed again. That was a huge issue later, and there was a big fight about the river, about restoring trout pools, which naturally will come back!" A second interviewee shared a similar perspective, "when you watched how it worked [on the Chickley], from an environmental standpoint [the dredging] was beautiful. The trout pools are going to come back on their own, everything's going to become good."

The 13 interviewees shared general skepticism of outside input or intervention in flood recovery strategies and generally perceived outsiders as attempting to undermine their ability to protect themselves from flood impacts. This perspective seems to result from traditional skepticism in New England about the role of the federal government but also seems to have developed from perceived threats to their traditional flood recovery strategies and environmental norms that accompany outside intervention in local river governance. One interviewee provided an example of the latter when she stated, "I've asked that question, 'why did we stop dredging the river?'" They say, well, it's because of endangered species. "There was a certain suckerfish," a junk-fish [is what] I would call it."

Interviewees perceive the Massachusetts state government in Boston and relative newcomers to their community from the coast

as outsiders attempting to use regulation to intervene and undermine Hawley's security, as described by an interviewee: "The DEP actually came up and tried to fine [Hawley] for trying to save their own town. They said they 'dredged the brook.' What gives them the right to fine [the town]!?" Two other interviewees blamed environmental stewardship as the primary cause of their problems and the reason Hawley was unable to successfully recover from Irene. One shares this perspective by stating, "[The town] caught hell for it from the environmentalists, they came down on [the selectboard], you know? 'You couldn't do that. You shouldn't do that. You made a canal out of what used to be a brook...'" A second described how these stewardship interventions occur; he stated, "Because you get one stupid squeaky wheel in town, they can blow millions of dollars on someone wanting to save a freakin' frog or salamander."

Intervention in rivers should be selective

The premise of this narrative is that successful flood recovery follows from the successful selection of river interventions that are based on a prioritization of river and riparian uses. Interviewees frame flood protection in technocratic, mixed-use management. Their framing is summed up well by what one interviewee called the "common sense approach" to flood recovery. They describe themselves as rational and flood recovery and protection as being defined by trade-offs and compromise between flood vulnerability mitigation and environmental stewardship. They concede that to truly mitigate flood vulnerability, development should be moved away from rivers, but they argue that such measures are extreme and therefore perceive flood recovery as consisting of select river interventions. They perceive alternative recovery narratives as one-sided or too polarized to contribute to rational decision making, and they frame conflict management as fact-finding processes. They perceive fair and meaningful flood recovery to result from due diligence and meaningfully weighing pros and cons before a strategy is implemented in any location along a reach.

There is a conception among the 19 interviewees who advance this narrative that flood recovery should reduce impacts to human infrastructure and activities in specific, valued locations; this strategy-use matching is argued to be scalable at the subwatershed level so that all river users can be placated. For example, rip-rap is justified to protect riverfront farmland, berms may be constructed to protect towns, but further up or downstream forested land may be allowed to flood, and conservation efforts may be used to appease fishers and environmentalists. In this narrative, practicality is the goal, as one interviewee stated when asked about how to balance river uses, "I think there needs to be a reasonable compromise between what's practical." Another provided details about the application of this compromise in Hawley, "what I would like to see is this: an environmental study that deals with a couple of things. One, the preservation of land, and second, the preservation of urban buildings on land that [are] very susceptible to flooding. Partially for the best interest of [the] land, and hopefully for the best interest of the landowners."

When asked how we should strike a balance between the impact of flood recovery on the river ecosystem and flood protection, two interviewees describe a crucial component of this narrative: the acknowledgement and acceptance that flood recovery will result in trade-offs. One interviewee stated, "let nature ... be as natural as it can be. But because we're humans, and we've put

bridges and roads and stuff in ... The environment's going to suffer from doing that, you know?" Another interviewee stated, "with the flooding [in Hawley] ... I don't have nothing against endangered species, and I like amphibians and I like all that stuff. But there is a limit to just how far [you can go to protect them]." These perspectives are representative of the 19 interviewees advancing this narrative in which nonstructural flood mitigation strategies—i.e., those that attempt to alter human development patterns and include zoning and setback regulations, economic and insurance instruments, flood forecast-warning systems, awareness raising, etcetera—are considered to be complementary and necessary to this practical mixed-use approach but their ability to meaningfully protect human activities and infrastructure by themselves are perceived as lacking.

Relative to the other two narratives, interviewees advancing "intervention in rivers should be selective" were not highly critical of other local groups or their views. Rather, they were sympathetic and perceived their approach to flood recovery as practical and necessary, but also as difficult to achieve given the town's flood recovery politics. Most were sympathetic toward others in their community and the state as they realized the complexity involved, as one interviewee described, "the government's role is tricky because they want to protect everybody and everything against everything, and it's impossible because people live near rivers."

Rivers must be free

The premise of this narrative is that successful flood recovery must work to move people and development away from rivers. Interviewees frame flood recovery as environmental stewardship, which they see as the answer to vulnerability reduction. They frame themselves as a contemporary, educated group who understands the need for "modern" flood mitigation strategies. They also identify as stewards of the environment. They see their strategy as a "win-win" in terms of environmental stewardship and vulnerability reduction. They characterize others as less able to understand why traditional flood recovery strategies are no longer viable and cite the Chickley channelization after Irene as the prime example of this. To manage conflict, they appeal to political action at the level of state government because they perceive local decision makers as too traditional. Their narrative of the Chickley River recovery reflects this perception. One interviewee summed up this narrative well by stating, "You know about the problems they had with the Chickley River? That was not the flood; that was the people."

The perception among the nine interviewees who advanced this narrative is that if valued infrastructure were not near rivers, there would be no need to manipulate the form and function of rivers by dredging them, as described by an interviewee,

I think that flooding happens. Flooding is a part of the natural world and the best thing you can do to not make a problem for yourself in the future is not have stuff in the way of a flood. So, don't build a house right along the river because the land was really cheap, or because it was really pretty, or whatever. Don't put permanent structural things in harm's way, 'cause you're gonna lose them.

The interviewees advancing this narrative perceived their approach as scalable from the parcel to the watershed but typically

argue in terms of the whole watershed, as one interviewee stated, "if you are going to do some sort of [flood impact] mitigation, you have to consider the whole system." The reasons for this are two. The first is, as one interviewee described, "Everybody should be aware that what I do on my little hundred feet of river ... impacts other people." The second is the general idea that stewardship equates to successful flood mitigation, and to achieve both we must not restrain the river system. An interviewee described this idea; he stated,

These events are restorative in a way, in that, if we could just pay attention to that and quit trying to make the brook or the river go where we want it to, and just [understand] that it's going to go where it wants to. And then, because we've straightened them, we've put bridges over them, and dams across them, we should not be shocked from time to time when nature reestablishes itself.

Within the "rivers must be free" narrative, perceived problems in flood recovery arose from ignorance among other stakeholders, as described by an interviewee, "A lot of that was people don't know, people go off and do their own thing. To me, that's a big danger." Another interviewee shared a similar perspective, "the average homeowner doesn't have the knowledge. I mean they don't know what's good for a river or bad for a river." These nine interviewees blamed a general lack of education for the development of alternative narratives. However, while education was presented as the long-term solution that would advance the "rivers must be free" narrative, distain among the nine interviewees of structural mitigation strategies like dredging, perceiving them as archaic and dangerous, was apparent. One interviewee shared his distain by stating, "they turned [the Chickley] into the Los Angeles River. That's a disaster waiting to happen." Another echoed his sentiments, "in Hawley, it seems like they had a 1930s view of the river. They looked at the pictures of the '30s floods and what the Army Corps did. And, they just went ahead and did the same thing."

Their proposed short-term solution to the Chickley channelization was increased oversight and regulation that limits community member abilities to modify the river. One interviewee provided an example of this solution, arguing that the town needs "designated zoning bylaws [that state] "this is floodplain. You can't build ... on the banks of a river."" Another shared his perspective about the role of the DEP, in the absence of education among his community members, in regulating dredging, "I think the government is the only entity that can [manage flood recovery] in any sort of concerted way. Because what's the option? We're all gonna discuss it amongst ourselves and come to some sort of consensus?! You know that's not gonna happen. So, I think the government is the only entity that can."

DISCUSSION

Having answered my first two research questions, what environmental narratives existed among community members (see Table 1) and how did different narratives come to dominate environmental governance (see Fig. 4), in this discussion I focus on answering the third: In what ways did differing narratives influence one another and how did this impact environmental governance and the community? At present, Chickley River governance in Hawley, Massachusetts embodies environmental

Table 1. Summary and comparison of environmental narrative structures, based upon framework developed by Jones and McBeth (2010). MA, Massachusetts; DEP, Massachusetts Department of Environmental Protection.

		Environmental narratives		
		Rivers must be restrained (N = 13)	Intervention in rivers should be selective (N = 19)	Rivers must be free (N = 9)
Origins		U.S. Army Corps	Historical multiscalar river governance in rural New England	U.S. Endangered Species Act and MA Rivers Protection Act
Frame components	Defining norm	Vulnerability/rivers are dangerous	Nuanced dichotomy	Stewardship/rivers are fragile
	Perception of themselves Perception of "others"	Loyal community members with traditional knowledge Outsiders	Sensible community members One-sided	Educated and modern Traditional
Narrative components	Plot	Outsiders prevent the town from protecting itself	Flood mitigation is an ongoing, complicated process	Antiquated flood mitigation damages the river and the community
	Causal mechanisms	The river is dangerous to the community	Rivers and people can coexist	The community is dangerous to the river
	Fixers of the problem	Community members must "fix the river"	River managers are in charge	Conservationists and the DEP know best
	Causers of the problem Victims	Lawmakers in Boston, MA and newcomers to the community The community is the victim	Irrational community members The river and the community are the victims	Community members trying to "fix the river" The river and the community are the victims
	Moral of the story/ solution	We must return to traditional river management	We must let experts do their jobs	People should move out of the way of floods

stewardship, as it did for over two decades following the passage of the Rivers Protection Act in 1996. But the fact that millions of U.S. dollars were spent to channelize, and then restore the river speaks to a breakdown in good governance. On one side, community members argue that they must be protected from the river. On the other, members argue that river must be protected from the community and doing so will in turn protect the community.

The mountainous terrain and regional economy within which Hawley existed required the European settlers who established the town in 1792 to reside in valleys to engage in mill-based production and capitalize on the fertile soil near rivers (see Clark 1990). This settlement pattern rendered Hawley residents vulnerable to flooding. Environmental governance developed that focused on and addressed the tension between the town's need for rivers and the vulnerability created by this need. This tension is reflected in the "rivers must be restrained" narrative because those who adhere to it perceive rivers as dangerous, while at the same time are confident in their ability to navigate this tension given their historical success. The Army Corps' damming and dredging tactics, beginning in the 1930s and lasting through the 1970s (Vogel and Lacey 2012), served to legitimize vulnerability as the dominant environmental governance norm.

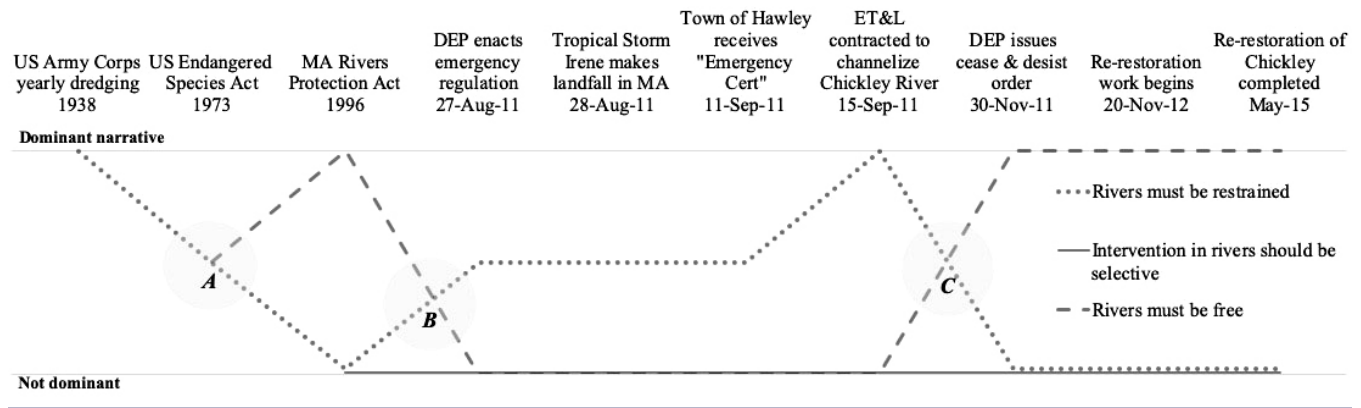
Beginning in the 1970s but institutionalized by the Massachusetts Rivers Protection Act in 1996, river governance in western Massachusetts was dramatically changed to protect "the natural integrity of the Commonwealth's rivers and to establish open space along rivers" (MGL Chapter 131 Section 40). The act's passage was the result of many years of dedicated support from legislators and citizens across the state who were operating under the premise that traditional river management was based on

outdated environmental norms (MassDEP 2018), as is reflected in and gave form to the "rivers must be free" narrative. This group of activists, scientists, and decision makers was successful in their effort to challenge traditional ways of thinking about rivers by incorporating nonhuman species and natural space preservation into river governance. It was assumed that top-down enforcement of the 1996 legislation, with some input from local decision-making bodies, would suffice in the implementation of the act across Massachusetts. However, little thought was given to the social ramifications of this forced transition to stewardship-based river governance in places outside of Boston with very different social-ecological relationships, histories, and norms.

The perspective that rivers are dangerous was able to be repressed through the enforcement of the Rivers Protection Act throughout the 1990s and 2000s. Through this repression, the "rivers must be restrained" narrative took form. The narrative began to incorporate the idea that "others," outside the community, were rendering the community vulnerable to flooding. No longer was the river the source of the community's vulnerability. Rather, outsiders and law makers in Boston were perceived to render the town vulnerable. Tropical Storm Irene legitimized this narrative because it proved the town was vulnerable under the new governance structure. After the storm, when the Massachusetts Department of Environmental Protection temporarily rescinded the Rivers Protection Act, Hawley decision makers used the narrative to reestablish river governance that addressed the tension between the need for rivers and the vulnerability created by this need.

The swift intra-community protest of the channelization that developed built from the "rivers must be free" narrative. As it did, the narrative was refined to halt the legitimacy of the "rivers must

Fig. 4. Evolution of narrative dominance in Chickley River governance (Not to scale). (A) Represents the transformation from restraining rivers to freeing them, 1938–1996; (B) represents a return to river restraint, 2011; (C) represents the return to a free river, political crisis, and a polarized community, 2011–2018. Although not depicted because of the two-dimensional limitations of this figure, each of the three narratives coevolve at each transformation as described in the narrative descriptions presented in the text. MA, Massachusetts; DEP, Massachusetts Department of Environmental Protection.



be restrained” narrative. It did this by labeling decision makers and others in the community who supported the channelization as traditional, antiquated, and contributing to the town’s future vulnerability. This, in turn, forced the town’s decision makers and their supporters to attempt to legitimize their actions by refining the “rivers must be restrained” narrative to label protesters within Hawley as “others” and outsiders who did not understand the town’s relationship with the river.

The current political polarization in Hawley, MA has its roots in two different environmental norms: vulnerability and stewardship. However, the mere existence of the two norms upon which river governance may be based does not explain the polarization process. This began when the state passed the Rivers Protection Act, which created a crisis of normativity among those community members who perceived rivers as dangerous. When authority to determine environmental governance shifted back to Hawley decision makers, the “rivers must be restrained” narrative was used to legitimize the Chickley channelization given their perception of the river. This created a crisis of normativity among community members who saw the river as fragile and drove them to petition the state to regain the authority to reinstate stewardship-based environmental governance. It also created two communities in one space as they defined Hawley decision makers and those who supported the Chickley channelization as the problem. This, in turn, forced the revision of the “rivers must be restrained” narrative to define those who petitioned the state as the problem.

Through iterative problematizations, the “rivers must be free” and “rivers must be restrained” narratives coevolved from different environmental norms. What resulted were two narratives that, more than advancing environmental stewardship or minimizing Hawley’s vulnerability to flood, problematized each other and thereby polarized environmental governance. In their current forms, they exist largely in terms of each other. Each of the two narratives attempts to create a group of outsiders within the single community that is responsible for the damage that occurred during Tropical Storm Irene.

Interestingly, the third and most widely represented narrative represented in my data, “intervention in rivers should be selective,” did not influence governance of the Chickley. This supports Winkel’s (2014) finding that narratives must problematize one another to gain legitimacy and determine governance strategies. “Intervention in rivers should be selective” existed as a unique narrative that offered a vision of an integrated social-ecological system that neither of the other two narratives did. However, by remaining unique, it was unable to delegitimize either of the other two dominant narratives that coevolved.

CONCLUSION

If we broaden current conceptualizations of environmental narratives to include the evolution of relationships between environmental norms, we can explain polarization in environmental governance. The coevolution of problematizing narratives in Hawley provides a framework to this. As an alternative narrative gains legitimacy in environmental governance that challenges existing norms, a crisis of normativity may develop among other groups that can lead them to problematize the newly legitimate narrative. This is done by iteratively labeling community members who hold different views as outsiders. Through time, ideological divides within a community develop and widen as narratives are reshaped relative to one another. No longer does a multidimensional policy space exist within which compromises may be found. Thereby, political polarization can undermine the larger community within which environmental governance goals are pursued.

If we see ourselves, as researchers, playing a role in broadening environmental governance to incorporate new norms like stewardship and sustainability while avoiding polarization, we must at one time position ourselves within the political process but take care to study how this position changes governance. This would allow us to better understand why certain norms are perceived to be threatening or mutually exclusive and take steps to define how they may fit within the same governance structure. Community members in Hawley who perceive rivers to be dangerous channelized the Chickley River in an attempt to

mitigate their vulnerability. If these members were provided with the opportunity to explore how river stewardship may also mitigate the community's vulnerability, a different outcome may have resulted. In this way, stewardship may be used as a "boundary object" that enables collaboration and dialogue between different actors while allowing for differences in use and perception (see Enqvist et al. 2018). We cannot simply develop a compelling counternarrative that may be adopted into legislation and enacted through enforcement. Rather, we must take strides to understand how its adoption challenges existing environmental norms and changes governance structures. The goal in doing this is to prevent members of the same community from labeling each other as outsiders in an attempt to dictate environmental governance, which results in inaction and polarization.

Responses to this article can be read online at:
<http://www.ecologyandsociety.org/issues/responses.php/10999>

Acknowledgments:

I would like to thank the many individuals who agreed to be interviewed as part of this research. I have done my best to represent interviewee perspectives accurately and fairly. I am solely responsible for any inaccuracies or misrepresentations. I would also like to thank Anita Milman and Christine Hatch for their continued guidance. I would like to thank Julia C. Bausch for inspiring my approach to this research. Finally, I owe thanks to two anonymous reviewers who greatly improved this work.

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