Transmedating NEST: Building a Habitat for Ecological Storymaking

TYLER QUIRING

Mitchell Center for Sustainability Solutions
University of Maine
Orono, ME 04469
tyler.quiring@maine.edu

ABSTRACT: Transmedia storytelling can enhance creative public participation collaborations. I overview the emergence of integrated transmedia storytelling and reflect on examples that illustrate its narrative and critical contributions to public participation. I also provide a case study of my own applied project, a website called Safe Beaches, Shellfish, & You that uses transmedia to engage collaborators in communication about and for environments. Finally, I argue that transmedia is more a process of story*making* than story*telling*, and that mindful and ethically engaged transmedia storymaking meets the needs of both researchers and stakeholders connected through sustainability science.

KEYWORDS: ecology, environmental communication, integrated transmedia, public participation, sustainability science, techne, transmedia storytelling

> *Transmedia storytelling is the art of world-making.*
> - Henry Jenkins, 2008, p. 21

1. INTRODUCTION

As Jenkins' line above attests, we are in need of creative approaches to world-making. When combined with theory and method in communication, sustainability science provides an interdisciplinary and creative space for this type of world-making to occur (Lindenfeld et al., 2012; Sprain & Timpson, 2012). Yet environmental communicators need methods to participate with the public in a way that complements and extends the collaborative capacity of interdisciplinary work. To this end, transmedia storytelling provides a compelling method for world-making through communication efforts within sustainability science. Media scholar Henry Jenkins introduced his definition of transmedia storytelling as a media environment where separate story platforms and pieces serve distinct but complementary roles, and each fulfill their unique capacities (Jenkins, 2003). Writing of transmedia storytelling as "the art of world-making"[1] in his book *Convergence Culture* (2008, p. 21), Jenkins clearly understood the deeply constructive role that transmedia storytelling can serve in society, yet he mostly focused on the pragmatics of storytelling such as how to consistently entertain a mass audience by delivering a story over multiple re-tellings and across a range of media channels. However, transmedia producer Jay Bushman (2014, as cited in Suleman, 2014) has described an

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[1] Jenkins' key example is *The Matrix* franchise. This franchise includes three blockbuster films as well as spinoff anime, videogames, and comic books connected to the world of the original films. For Jenkins, these materials formed a compelling web of texts that "places new demands on consumers and depends on the active participation of knowledge communities" (p. 21).

alternative approach called integrated transmedia where different media pieces work together through a single storytelling portal. In contrast to transmedia for entertainment franchises, integrated transmedia storytelling provides unique and to date unrealized potential for mobilizing journalism, critical performance, and public participation to address complex sustainability issues through collaboration within a diverse network of participants. As new forms of media production such as transmedia storytelling continue to emerge, they provide compelling opportunities for engagement between environments, bodies, and stories. Environmental communication practitioners and scholars alike should harness these opportunities to involve audiences as participants in the creative process of storytelling and, through it, world-making.

Because of the urgent need for new ways of approaching practical and innovative forms of environmental communication that realize the field's ethical commitment to the needs of the world (Cox, 2007), I ask "how, through communication about, for, and with the environment (writ large), might integrated transmedia storytelling enhance public participation in sustainability science?" In this chapter, I first explore the development of transmedia as a storytelling phenomenon through the lens of Jenkins' developing writings on the topic. I then describe how the work of other media scholars builds on Jenkins and establishes innovative uses for transmedia storytelling that serve the needs of sustainability science. I find that the scholarship provides precedent for three distinct uses of integrated transmedia storytelling that relate to its utility for environmental communication, including narrative and documentary, critical performance, and public participation. Next, I offer illustrative case studies of two landmark applications of this method that provide strong precedent for the use of transmedia storytelling as environmental journalism and critical performance, respectively. I find that together, these uses can enable genres of public participation that deeply intersect the core commitments of sustainability science, namely the challenge of reconciling environmental concerns with social needs. I then provide a case study for transmedia as a uniquely participatory method of environmental communication through an applied case study of my transmedia storytelling website focused on the New England Sustainability Consortium's first project on Safe Beaches and Shellfish. Finally, in my discussion I provide a synthesis of insights from my analyses and make a case for transmedia as a reservoir of untapped potential in publicity and engagement efforts related to sustainability science. Specifically, I argue that the creative and critical dimensions of transmedia support a distributed politics of engagement through storytelling that is uniquely situated to meet the goals and needs of the diverse efforts that are already engaged in the important work of making worlds through environmental communication.

2. TRANSMEDIA STORYTELLING: AN EMERGENT PHENOMENON

In his book focused on convergence (the merging of media), media scholar Henry Jenkins (2006) delivers his most often cited definition of transmedia: "In the ideal form of transmedia storytelling, each medium does what it does best–so that a story might be introduced in a film, expanded through television, novels, and comics; its world might be explored through game play or experienced as an amusement park attraction" (p. 96). As Jenkins and others understand, transmedia storytelling participates in a process called "world-making" (2008, p. 21), which I take to mean the process whereby communication creates possibilities for action and reaction. Others build on Jenkins formative work. While *transmedia* has been a component

of various compound terms since the early 1990s (Elwell, 2014, p. 239), and Marsha Kinder's 1990 definition remains a classic (Wheedon, Miller, Franco, Moorhead, & Pearce, 2014, p. 114), the term was popularized in academic discourse when Jenkins introduced it as a method of storytelling in a column for *MIT Technology Review* (Jenkins, 2003). The term has since enjoyed extended discussion in media scholarship as a way to describe communication products that employ multiple forms of media in a cooperative instead of merely convergent or competitive capacity. Jenkins later developed the concept further in his article *The Cultural Logic of Media Convergence* (2004), which sought to highlight trends in media production and consumption that were facilitated by recent developments in media technology. He described transmedia storytelling as an example of robust and useful implementations of convergence that allow an active engagement between audiences and media content across a range of platforms. When Jenkins again revisited the concept in *Convergence Culture* (2006), he offered a new definition–one that spoke to the question of power–by suggesting that "it is the interplay–and tension–between the top-down force of corporate convergence and the bottom-up force of grassroots convergence that is driving many of the changes we are observing in the media landscape" (p. 169). In the book, he recapitulates his sense of transmedia's purpose as a strategy often used by media corporations to increase the penetration and market share of their entertainment franchises (especially in his analysis of the 1999 film *The Matrix* and its subsequent spinoff media). However, he notes that "relatively few, if any, franchises achieve the full aesthetic potential of transmedia storytelling–yet" (p. 97), hinting that there is untold potential to be unlocked through this unique method because it demands a high level of consumer engagement (p. 259).

As other scholars began to extend the concept of transmedia storytelling and apply it elsewhere, Jenkins revisited the topic yet again (Jenkins, 2010), citing a growing range of opinions and definitions of transmedia storytelling. Here, he noted the emphasis on entertainment that had defined most discussion up to that time, and grappled with broadening the horizons of transmedia to make it more inclusive: "Whatever we call it, transmedia entertainment is increasingly prominent in our conversations about how media operate in a digital era" (p. 944). Understanding the limitations of conceptualizing transmedia as entertainment, he also stated a need to "pull back and lay out some core principles that might shape our development or analysis of transmedia narrative and to revise some of our earlier formulations of the topic" (p. 944). Eventually, he proposed redefining the term altogether:

> We should be clear that narrative represents simply one kind of transmedia logic that is shaping the contemporary entertainment realm. We might identify a range of others – including branding, spectacle, performance, games, perhaps others – which can operate either independently or may be combined within any given entertainment experience. We might also draw a distinction between transmedia storytelling and transmedia branding, though these can also be closely intertwined. (p. 944)

After Jenkins' thinking on the subject became more nuanced and he conceptualized transmedia for purposes beyond entertainment, other scholars began to articulate new uses for the term as well, including narrative and creative approaches to journalism, critical performance, and public participation and collaboration. These uses connect with and extend the purposes of environmental communication, and provide ways of addressing complex sustainability issues.

2.1. Narrative and documentary transmedia

Although Jenkins focused on fictional approaches to narrative transmedia storytelling, the method has been utilized as a communication technique to tell nonfiction stories as well. Furthermore, these nonfiction uses can be employed for the purposes of research. Nicholas Riggs (2014) writes of his experience reading the autoethnographic thanablog of the late Bud Goodall's battle with cancer. Goodall was a communication scholar specializing in the study of storytelling, performance, and narratives. Through autoethnography (the study of one's own experiences), Goodall charted his life with cancer online for the public to access. Riggs draws Goodall's writings as well as from Jenkins' original piece on transmedia as he describes the possibilities for deep engagement between online texts and their readership on the basis of their gripping subject matter alone. He notes that transmedia can be undertaken as an autoethnographic research method in its own right, and proceeds to do so himself as he inserts his own thoughts into his analysis of Goodall's blog. Riggs surmises that "such technology opens a gestural space for public dialogue where there has traditionally been very little surrounding terminal illness and the end of life" (p. 87). Taken together with Elwell's (2014) approach to the role of transmediation upon the subjectivities of the self, a more robust conception of human-media relations is made evident. In a discussion of the myriad digital identities that have come to mark online existence, Elwell accounts for the prevalence of "existential equivalence" marked by digital "exoselves" (online versions of oneself) that mirror the analog experience of embodiment (p. 237). For Elwell, existential equivalence refers to the fact that what we share about ourselves through networked technologies "is constitutive of the deepest levels of our interiority" (p. 237). Elwell applies the basis of transmedia storytelling to the study of self, and in doing so envisions an expansion of the concept beyond the world of storytelling into the realm of networked culture itself.

The cultural networks of journalistic reporting also expand the possibilities of transmedia storytelling, as Andreas Veglis (2012) distinguishes transmedia techniques from those of "cross media" reporting. Veglis describes cross media reporting as a form of parallel journalism, where content is recycled for multiple uses across platforms. On the other hand, transmedia approaches take advantage of each medium's unique capacities (p. 315). For Veglis, "transmedia is not just about multiple stories, but about creating a rich in-between space, an archive of shared meaning in-between different parts of the story. By using different media, it attempts to create 'entry points' through which users can become immersed in a story world" (p. 315). What this means for journalism specifically is that many different pieces of media (functioning as multiple unique ways of telling complementary segments of a story) can come together through online news platforms to enhance the overall depth and quality of journalism as a craft. Veglis foresees this as resulting in complex forms of categorization that provide many ways of entering a story, allowing for an engaged and interested readership (p. 322). Specifically speaking to the engaging qualities of such documentary work, Siobhan O'Flynn (2012) describes transmedia as one component of the "metamorphic" form that is documentary storytelling. O'Flynn seeks to push the boundaries of digital narrative, and finds that transmedia is uniquely useful to this end because of its emphasis on the presence of local voice and community-centric participation.

Others interested in the boundaries of digital narrative focus on participation as an internal function of documentary approaches to transmedia. For example, Aufderheide (2015) discusses how transmedia commonly takes the form of interactive documentaries delivered through the Web. Specifically, Aufderheide focuses on transmedia projects that deal with

complex energy issues such as climate change. She finds that while many of the pieces she analyzes give audiences a role within their stories, these roles tend to limit reader participation to the act of gleaning information (p. 77). It is important to note that since Aufderheide specifically studied "interactive documentaries," her case studies predominantly exhibit the linearity of film. Because of this, her analysis of the participatory potential in these transmedia examples focused on how navigational design presents a users with "choice" between limited options within the linear story. As a result, she mostly avoids an exploration of potential opportunities to have the production of the story itself involve participants. By contrast, Tamar Ashuri (2012) explored the social reordering that transmedia prompts. For Ashuri, activism has become an important niche function of journalism, and transmedia storytelling supports this function. In turn, Cheong & Gong (2010) link civic journalism to transmedia through a discussion of collective intelligence. They describe bottom-up, citizen-driven creation of transmedia texts as a form of cyber vigilantism that "involves the transmediation of information across multiple media platforms as online participants engage with media and with each other to spread information and/or to create new texts" (p. 474). They find that transmedia platforms in China allow for an extensive level of public participation in current political events. Furthermore, transmedia itself serves as a way of resisting authority, as "the spread of alternative media stories helped subvert and challenge government discourse" (p. 482).

In addition to political resistance, some have used transmedia storytelling to resist the very distinction between fiction and nonfiction. Perhaps most notably, Suleman (2014) dealt directly with this distinction in his analysis of *Four Broken Hearts* (*FBH*), a transmedia storyworld that he produced. *FBH* is an example of integrated transmedia (where the individual pieces work together but do not stand alone) with the primary objective of blurring the boundary between fiction and reality (p. 232). Suleman describes the project as an immersive drama that combines documentary film, supporting social media (through popular blogging and image-sharing sites), location-based experiences, and live performance, all introduced through the project website (http://fourbrokenhearts.com). The catch is that, although the story initially appears to be a scripted interactive drama, the characters are in fact real and so are their experiences. The social media accounts point to the online identities of the cast, and one of the short films found at the end of the website encourages the audience to visit key locations in New York City that mirror the events in the story, as "a chance encounter is always possible" (Sulema, n.d.). Through both its production and presentation, FBH is part online documentary and part critical performance.

2.2 Transmedia Storytelling as Critical Performance

As Suleman (2014) called into question the boundaries between real and virtual, temporal and spatial, and personal and political (p. 228), other scholars have studied transmedia storytelling as a means to problematize other cultural binaries. Chen and Olivares (2014) explore transmedia in the context of gender and technology studies, stating that it "focuses on subversive uses and conceptualizations of media by and for transgender and gender-defiant people in the transnational 'post-digital' age" (p. 245). Here, the conventional roles of media, gender, and nationality are collectively challenged through a common prefix that questions the basis of their rigidity. In a similar but distinct spirit and execution, Marwick, Gray, & Ananny (2014) queer transmedia itself through their analysis of fandom surrounding the FOX television series *Glee*. They find that by blending social media engagement with conventional

ways of experiencing entertainment narratives, fans are able to meaningfully participate in a robust renegotiation of the politics that mark minority representation in traditional media. In a more applied approach to transmedia research, Hayles, Jagoda, and LeMieux (2014) undertake a critical performance of an alternate reality game called *Speculation*. They demonstrate the hybridity of transmedia experiences (pre-given but also emergent) through a "focus on the transformation of *Speculation* from a preprogrammed interactive criticism of Wall Street to an improvisational cocreation between designers and players" (p. 229). As they incrementally established a unique character over the course of a year, Hayles et al. found ways to trans the media in tandem with their own experience: "The original white, male, upper-class fall guy transformed, consistently within the rules of the world that we had produced, into a transient, transgendered, and transmediated child who was ultimately responsible for the emergence of . . . the character with whom the game began" (p. 235). Here, they reinforce the ethos of a transmedia existence and fully embrace the uncertainties of the contingent world it evokes.

I Importantly, some transmedia thinkers have drawn on similar perspectives to discuss the potential for transmedia methods to blur the lines between producer and consumer in order to promote engagements between storyteller, audience, and story. For example, Jansson (2013) examines transmedia alongside "textures" of mass media theory (p. 288) and some useful themes emerge. Primarily, instead of fixed, absolute relations between media and people as in mass media theories, a transmedia approach blurs the lines between machine and organism. Jansson finds that transmedia textures of mediatization "enable us to move more freely in geographical space while still being connected to friends, family, and colleagues, and keeping updated on events in almost any place in the world (p. 289). Others explore transmedia as an affective practice that illustrates the constructive role storytelling can play. Focusing on the technical dimensions of transmedia, Kozel (2007) helpfully explores "techne" (or the "doing" of communication work such as transmedia) in her treatise *Closer: Performance, Technologies, Phenomenology*. She writes of techne in a world-making sense:

> Fundamentally, techne is about revealing what was concealed, rather than manufacturing or simple instrumentality: techne is a bringing-forth, and technology is a mode of this revealing. In other words, techne is the broad human activity of bringing things into being, while technologies are a modality, or a specific set of practices, within this wider domain. (p. 74)

If the techne of transmedia storytelling can be both critical and constitutive in the sense that much of the work above describes it, the method can complement boundary-spanning efforts and provides environmental communicators a powerful toolkit to undertake storytelling in a participatory manner that meets the collaborative ideal of sustainability science.

2.3 Public Participation through Transmedia Storytelling

For environmental communication to fittingly meet the needs of sustainability science, it must be applied in a manner that embraces and encourages public participation. In fact, Lindenfeld et al. (2012) provide a careful reminder that "sustainability science requires unprecedented levels of collaboration across disciplines and with stakeholders" (p. 31). While this collaborative mandate can appear daunting, online performance itself can be collaborative (Gray, 2012), and transmedia storytelling may be used to provide platforms where public stakeholders can access and make sense of stories, including those related to sustainability science itself. It can do this because, instead of conveying stories through conventional means

that limit their application to dissemination or entertainment, in transmedia production stories are given over to the reader. While a producer is (most often) needed to provide the basis of a story, mindful transmedia production embodies a realization that audiences bring their own ideas and experiences to a story, as well as their expectations for what they should be able to do upon taking part in the story. The audience itself is the last piece of the transmedia puzzle, and transmedia producers realize that, without a reader, their stories are devoid of purpose.

We have seen in the previous sections that many who have written about transmedia storytelling have appreciated the ways it can afford users a deeper level of interaction with stories than is possible with conventional multimedia. Spiridon (2014) went further, and argued that transmedia "has a significant impact on the balance between story and discourse, in both directions, and also results in an unprecedented empowerment of the receiver" (p. 33). As opposed to common conceptions of storytelling as "an inexistent narrative activity which is able to convey a story directly to the public, by-passing discourse and its complex sense-making abilities" (p. 35), for Spiridon transmedia storytelling seems to be more a function of story*making* shaped by the discursive sense-making abilities of an engaged, empowered reader. Invoking and ethics similar to Spiridon's but speaking specifically of transmedia in radio, Edmond (2015) found that although radio has remained relatively recognizable throughout the surge of interest in transmedia, there are new approaches that illustrate changes in audience engagement practices. Specifically, she found that transmedia radio productions are quite distinct from transmedia produced by major entertainment companies. In particular, radio transmedia tends to be more intimate, personal, and localised than mass transmedia entertainment campaigns. For Edmond, common threads in these productions are their emphasis on authenticity of voice and a heightened sense of collaboration between audiences and producers.

In an important discussion on the role of communication in addressing the transdisciplinary needs of sustainability science, McGreavy, Hutchins, Smith, Lindenfeld, and Silka (2013) stipulate that communication as a field should inform sustainability science work that occurs along and across boundaries between scholars, disciplines, and institutions. Furthermore, they argue that communication has a clear role to play in attuning participants to the deep complexity of sustainability science (p. 4215). On the other hand, "one must pay attention to the boundaries (re)created through communication practices" (p. 4205). The implication for environmental communication scholars and practitioners contributing to sustainability science efforts is that these boundaries can measurably shape emerging processes and results. Furthermore, as environmental communicators undertake important work in partnership with stakeholders and share the results of that work, doing so in a participatory and engaging manner can become a challenge.

However, while sharing research through media production, for example, may measurably add new dimensions of challenges through the boundaries it (re)creates, it also provides a range of means to meet the unique needs of boundary work in sustainability science. One such means is transmedia storytelling and its aim to productively put multiple forms of media, producers, and consumers in robust interaction with one another. When designed to span the boundaries between disciplines, institutions, and individuals, transmedia stories can provide incredible opportunities for environmental communicators to work in and through the complexity of sustainability science at multiple levels to produce platforms that people can use to make sense of complexity, including the complexity of sustainability science collaborations.

3. ILLUSTRATIVE CASE STUDIES

In order to make a case for transmedia storytelling as an invaluable way to enhance the work of sustainability science, I will now describe and analyze two key examples of integrated transmedia (as in, multiple story pieces collected and conveyed through one platform) that illustrate its applicability for use as a method of communicating about environmental crises. These illustrative case studies demonstrate the journalistic and critically performative functions that transmedia storytelling can perform, and both do so through a nonfiction documentary approach. The first is a landmark piece of reporting by the New York Times that relates the events of a deadly avalanche in Washington state in 2012. The second is an interactive online documentary film about the closing of a mine in Pine Point, Northwest Territories and the national diaspora and residual environmental damage left in the wake of the mine's closure. Both stories serve overlapping but distinct functions, and both have unique lessons to offer environmental communicators seeking to employ transmedia storytelling.

3.1 Snow Fall: Transmedia Storytelling as Creative Journalism

Perhaps the most well-known example of transmedia storytelling adapted for use in news reporting is the extensive investigative report *Snow Fall: The Avalanche at Tunnel Creek* (Branch, 2012). The piece is an online news story presented primarily through written text but supplemented by short videos, dynamic animated visuals, and photographs (both single photos embedded beside the text and complete photo galleries). *Snow Fall* delivers an in-depth account of a large avalanche near the Stevens Pass ski area in Washington that claimed the lives of several skiers on their foray into the backcountry on February 19, 2012. What set *Snow Fall* apart from other news reporting of the time was not only its breadth and depth of content–nearly 18,000 words across 6 thematically organized pages–but also the way it was delivered. In *Snow Fall*, nearly every supplementary piece works in synergy with the written material. Videos are short and to the point and feature clips that speak directly and succinctly to the main content of the page. Animated segments–such as three-dimensional maps of the area, a cross-section view of a mountain slope just before an avalanche, and a replicated view of the avalanche itself complete with approximate locations of buried skiers–are included precisely at the points of the text that are hardest to visualize, anticipating the needs of readers and delivering content that fulfills these needs as they work their way through the story.

    Snow Fall is a prominent digital journalistic work that in turn came to inspire countless similar projects by other news agencies and subsequently altered reporting approaches (Michel & Ladd, 2015). It is nonetheless mostly absent from transmedia scholarship. Yet as an important milestone for integrated transmedia storytelling, the piece provides clear precedent for the use of transmedia in environmental communication. Indeed, the piece provides an in-depth exploration of the penalties for transgressing established boundaries between nature and culture (while ski areas are typically quite safe, this story occurred in the backcountry where snow conditions are not controlled). While it reinforces a sense of nature as powerful and dangerous, it does so through an innovative approach that allows the reader to experience a story instead of merely consume it. To be sure, *Snow Fall* relies on text-based reporting as its primary means of information transmission. While the additional media pieces supplement the story, they are not integral to it. This is borne out by the fact that at the end of the piece, readers are given the option to purchase an e-book version of the story, complete with an

epilogue. This demonstrates that the transmedia piece, while a worthwhile experiment for the New York Times to undertake, is in support of its print-first reporting strategies. However, the piece also provides a space for user engagement. After experiencing the story, readers may notice a small icon in the upper-right of the screen where they can visit a comments page devoted to reader responses to the story. As of this writing, the section is closed to future submissions, with 1,155 comments left by readers. Many of these are curated, and are displayed near the top with a "NYT Picks" badge next to them. Yet most important to our consideration is that this interactive feature was included at all, and that it allows readers to supplement the story with their voice.

Snow Fall demonstrates the culmination of a tension between both multimedia (many media compressed into one form) and transmedia as well as franchised versus integrated transmedia storytelling. It contains remnants of multimedia approaches to news reporting (as it relies on a text-centric and completionist approach to storytelling), but also productively uses transmedia storytelling to establish a new paradigm of news reporting. At the same time, while it draws on the familiar features of the New York Times as far as it might be called a "franchise" of news reporting, the piece goes beyond this to make a clear case for integrated transmedia as a powerful method of documentary storytelling. Furthermore, it demonstrates that this approach can adequately attune users to environments, as its experiential qualities provide many opportunities for deeper engagement with both the text and the environment. Yet for integrated transmedia storytelling to reach its fullest potential as a method of critical environmental communication, further recent developments should be explored and explicated.

3.2 Welcome to Pine Point: Transmedia Storytelling as Critical Performance

Welcome to Pine Point (Shoebridge & Simons, n.d.) is a creative online documentary film produced and distributed by the National Film Board of Canada. It discusses the place-based and discursive contexts that constituted the mining town of Pine Point, Northwest Territories from its establishment in the early 1950s to its closure in the late 1980s. Specifically, it explores the aftermath of the mine's closing, including residents' loss of their homes and the national diaspora this prompted. While the producers do not clearly label or brand the piece as transmedia storytelling, it is constituted in a complex web of memories knit together through user interaction to form a story told in time and co-created between the performers (be they interviewees, producers, or the audience). In this sense, the documentary serves to evoke the Pine Point of the past and brings it into being anew through a range of means. The town as a social and commercial location is performed through reminiscent poetry and prose written by the producers, archived photographs and video, original audio interviews, photos and videos collected by the producers and residents, drawings and visual reconstructions of and by Pine Pointers, and an original soundtrack by Canadian band *The Besnard Lakes*. Above all, these elements allow readers to create a rich tapestry that presents the performative experience of Pine Point instead of merely its chronology.

Transmedia as exemplified through *Pine Point* underscores the importance of collaborative meaning-making. Had the producers of *Welcome to Pine Point* merely wanted to convince others of their viewpoints, they might have written an essay or presented a series of facts and figures on the effects of the town's closing. Instead, they chose to share this story in a deeply participatory way, in concert with their interviewees as well as with those who experience the piece. Herman (2004) states that "at the heart of each narrative…is the same

problem—namely, how to make sense of a transformation by which a character becomes a member of a different species" (p. 57). This posthuman metamorphosis is central to making sense of *Pine Point*. It acknowledges that transmedia can serve to supplant one's own expectations of their role in the world in order to more fully participate in a shared ecology. In *Pine Point*, this often takes places on an emotional basis. In one climactic scene, we are shown how physically and socially disorienting a diaspora can be. The screen shows two side-by-side camera shots, one of a house in Pine Point during the town's heyday, one of the same lot years later, with almost no recognizable trace of a building ever being there. As the videos pan simultaneously across the space, sorrowful music crescendoes in the background. The transmedia works in a convergent sense here, as we are delivered an incredibly dense array of media in a very short amount of time. The effect is swelling emotion, an overwhelming sense of loss but also a revelation of the resilience of personal attachment to place.

In *Welcome to Pine Point*, transmedia storytelling serves to mediate the producers' discussion on the fixity of memory and its advantages and drawbacks. By taking an extreme example of hometown loss, the town becomes re-performed and re-worked as a collaborative social performance. This collaborative work is undertaken by a spectrum of co-producers, including the official producers through their vision in piecing together the story, the residents of the town through their recall of memory across many media pieces, and also the reader through the unique way they constitute the text as the move through it. *Welcome to Pine Point* deeply involves all of these performers through its emphasis on textual engagement. Here, transmedia storytelling is not located in any particular place, but is actualized through a located performance (the website itself). This is powerfully demonstrated as resident experiences are filtered and told through socio-spatial contexts, then re-told by producers in a myriad of ways, and finally re-told yet again by audiences through their own interaction and understanding of the performed text. Together, these actors create the worlds of both *Pine Point* as a transmedia project and Pine Point as a town that exists only in memory.

4. APPLIED CASE STUDY: SAFE BEACHES, SHELLFISH, AND YOU

The New England Sustainability Consortium (NEST) is an inter-institutional, transdisciplinary team of sustainability researchers in New England. The goal of the consortium is to enhance the use of science in decision-making in New Hampshire, Maine, and Rhode Island. NEST's first project (and the impetus that spawned the consortium) was a 3-year grant provided through the National Science Foundation. The project is focused on studying and enhancing the use of science in decision-making within the beach and shellfish industries in Maine and New Hampshire. As a University of Maine researcher on NEST, I became interested in how the public reporting of our research could complement the sustainability science goals of the project itself. It seemed that if I were to embark on a storytelling effort, it would need to go beyond *telling* NEST's constituents about the work and instead seek to *involve* them in that work. For this reason, I decided to employ transmedia storytelling through a public website since it could productively put media pieces in conversation with each other, NEST and its stakeholders.

The approach I took to the transmedia website was informed partly by much of the scholarship I have explored above, but also by lessons learned from the important work of projects like *Snow Fall* and *Welcome to Pine Point*. These efforts were valuable and powerful for their breadth and depth of content leading to multiple avenues for reader interaction. The

high-quality, extensive reporting *Snow Fall* delivered through a range of interconnected and engaging technologies, had demonstrated that in-depth transmedia reporting could create a space for deep engagement with the boundaries of nature and culture. And *Welcome to Pine Point* had shown that documentaries, while usually linear, could be constructed in ways that give readers an empowered and critical role within narratives that ask tough questions about the complexities of human interactions with and within natural-resource contexts. Yet I wanted to combine reporting *about* New England's coastal environment with opportunities for critical performance *in* that environment, no matter where readers were. Furthermore, I sought to create a space where those interested in NEST could experience its commitment to participatory, collaborative research and co-create communication that demonstrates why ecological metaphors can be useful organizing concepts for storytellers.

To do this, I devised a website called *Safe Beaches, Shellfish, and You* (*SBS&Y*) where I combined conventional written reporting with photography, documentary audiovisual material, interactive information, and immersive experiences. The result is a 9-page website that uses transmedia storytelling practices to provide both navigational and contextual engagement. *SBS&Y* is coded in the Bootstrap web development framework that delivers content through responsive web design (where the layout automatically adapts to present content clearly regardless of device type or screen size). It is important to note that the narratives within *SBS&Y* are organized thematically instead of chronologically, in an attempt to allow for multiple ways of making sense with and moving through the texts I co-create with the reader of the site.
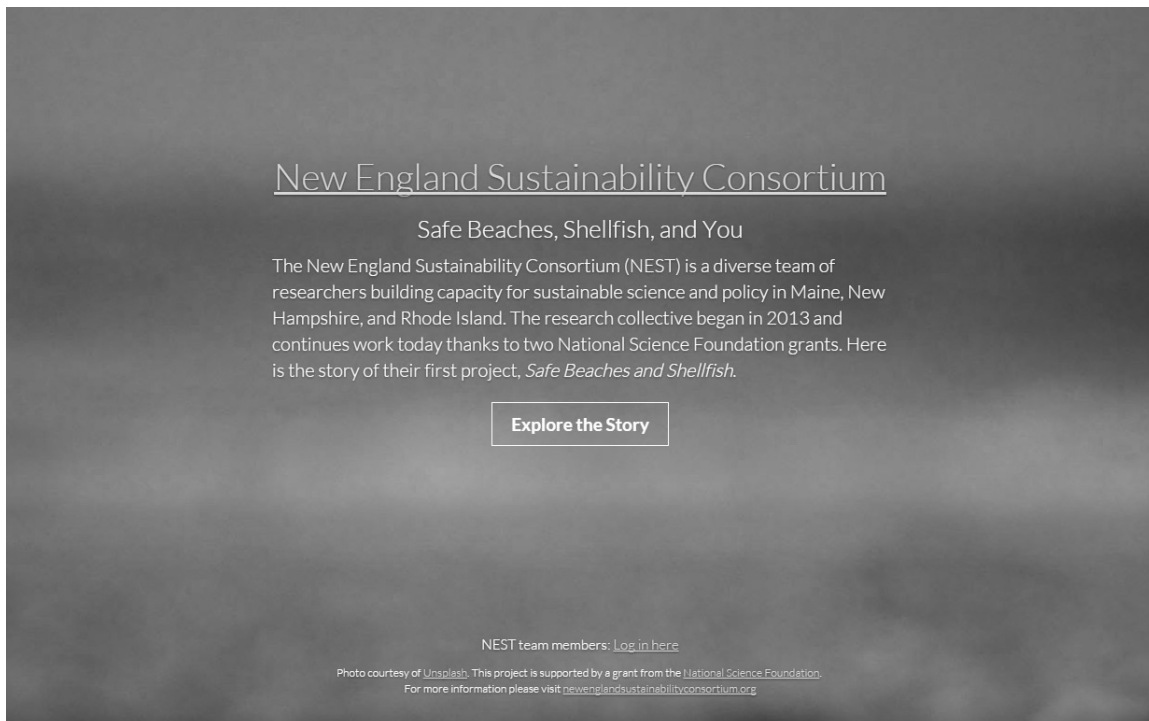

Fig. 1. Cover page of the *Safe Beaches, Shellfish, and You* website, providing access to the site alongside basic information about the project.

When readers visit the transmedia website at http://nest.maine.edu, the first thing they are greeted with is a welcome screen that labels the site as a storytelling platform, provides some written contextual information on NEST, and invites them to "Explore the Story." Upon clicking the prominent entry button, the reader comes to the main page of the site, seen below. The top section of this page provides important orienting information, including a banner image of shellfish harvesters working on a beach at sunrise, a series of in-page tabs answering "who, what, how, and why" questions about NEST and the Safe Beaches and Shellfish project, and an interactive timeline that provides an overview of how activities progressed within the project. If the reader decides to scroll down, they find a section of the page that introduces the concept of sustainability, presented by three featured individuals connected with NEST (a graduate student researcher, a lobsterman who serves as a tribal chief, and a postdoctoral researcher). Just underneath is a short audio piece that weaves together interviews where each of these individuals provide different ideas of what sustainability means.

If the reader has come this far down the page, they will realize that there is no more content to be found until they select one of the following thematic navigation buttons at the top: "Beaches," "Shellfish," "Collaboration," "Engagement," "Get Involved," or "About." At this point, the website suggests to the reader how they might progress through the story, but does not choose for them what comes next. In this way it is similar to the structure of *Snow Fall*, but since the story is not presented chronologically, it encourages the reader to have a more flexible approach to exploring the story. Unlike an interactive documentary, where content plays and then points the reader to the next section in a linear fashion (or even automatically proceeds through the story), it is here that the reader must understand that for the story to proceed, they must interact with it, at least in a navigational sense.

Fig. 2. The first main page of *Safe Beaches, Shellfish, and You*. Site navigation can be seen along the top of the page, with project overview information in the middle. Note the interactive timeline at the bottom of the image.

The content on most of the remaining pages follows a fairly consistent format. First, the reader finds a banner image at the top that provides a visual example of the page's topic. Immediately below is written reporting that introduces NEST's research and involvement with that topic. Following the story (or, more often, embedded between paragraphs) come visual, interactive, and/or media pieces that further illustrate the written material and provide different opportunities for meaning-making. Specifically, the two pages that deal directly with natural resources ("Beaches" and "Shellfish") include additional experiential and immersive media. On the "Beaches" page, there are two unique ways that the reader can choose to become a co-creator of the story. In the middle of the page after the main written piece, readers can find an embedded interactive window. This window includes "photospheres," images of 5 beaches in New Hampshire and Maine presented through scrollable omnidirectional imagery that sports interactive features similar to Google's popular Street View technology. Just below is an audio piece of the sounds at one beach. Below that are panning videos of 4 beach locations.

Together, these materials provide an opportunity for the reader to imagine themselves at these locations. While the reader may or may not visit these or other beaches, the media here serve to fill in some of the gaps between conventional reporting and personally being at the beaches. The purpose is to allow for the co-creation of a lived sense of understanding, as much as possible through a transmediated experience. For example, a key piece on the "Shellfish"

page is a situated audiovisual account of a clam harvester digging on a mudflat in Maine's Frenchman Bay. To create this account, I outfitted the harvester with a head-mounted GoPro action camera and ear-mounted binaural microphones. Binaural audio is a technique for recording sounds in which microphones are placed in such a way as to emulate the position of human ears and thus capture sound as one would naturally hear them. Situations recorded in this manner have the potential to convey the unique aspects of a situation much more effectively than traditional video and audio coverage from an external perspective because the recording devices are situated on the subject similarly to how the audience will experience the video as well. The viewer sees the scene in much the same way as the person wearing the camera, and (if wearing earphones as they listen) hears the same sound that entered the subject's ears as well. In this way, there is a high degree of overlap between the original and secondhand experience as the subject and viewer are brought closely together.

5. DISCUSSION

We have seen the kaleidoscopic variability in both the research and practice of transmedia storytelling. There are seemingly as many approaches as there are people, and this realization can be disorienting. However, the development of integrated transmedia ensures that stories can function as an organizing apparatus while still providing a space that allows for diverse approaches to sense-making. How then can integrated transmedia storytelling support the efforts of environmental communicators seeking to enhance public participation in sustainability science? The sparing but compelling use of ambience, or "that which surrounds but does not distract" (McCullough, 2013, p. 18) in transmedia shows us that this emerging method still has largely untapped potential to promote affective experiences. Thomas Rickert (2004), in describing the utility of his approach to rhetoric, says that ambience "seeks to put place, language, and body into co-adaptive, robust interaction" (p. 904). Transmedia storytelling can do this, and I have found that it is most promising when it fulfills these evocative functions. Far from the traditional, rigid sense of story*telling* that Spiridon (2014) rejects or the navigational channeling that Aufderheide (2015) warns of, the case studies above illustrate that transmedia (while still in search of its ultimate form) is at its best when producers and readers work together as story*makers* who use innovative tools to innovative ends.

In the New York Times' beautiful and immersive 2012 report *Snow Fall*, this function is somewhat limited by an emphasis on the conventions of chronological reporting. However, that piece paved the way for future efforts, including ones that could more fully embrace the role of the reader as participants in the story. *Welcome to Pine Point* thoroughly capitalizes on this approach, and constantly challenges the reader to co-perform the text as they participate in making meaning out of a collective trauma. However, it too relies on a linear approach to storytelling where the story "builds up" over time before washing the visitor with an overwhelming surge of emotion. In *Pine Point*, the story does not have quite the same effect when experienced out of sequence. My transmedia project *Safe Beaches, Shellfish, and You* occupies a middle space, one where the work of both producer and reader come to rest on the complex ecological connections between communication and sustainability. It is not quite linear, and so it also provides a space for diverse approaches to and understandings of sustainability.

When viewed as a whole, *Safe Beaches, Shellfish, and You* provides an extensive platform for parties interested in the work of the New England Sustainability Consortium to

meaningfully engage in sustainability science through storymaking. Through non-linear navigation, the site encourages readers to engage with the text on the basis of the themes that interest them most. When the reader chooses the theme, they are presented with several avenues to understanding, each providing unique opportunities for ecological exploration. In this way, the readers participate within a storytelling environment that privileges media pieces as distinct "species" within an ecological web of meaning. Because of this, the transmedia approach of the website meaningfully complements the collaborative ideal of sustainability science. Within the necessary constraints of these media pieces, readers may engage with the text not just as passive consumers, but as active co-creators whose personal experiences and values come to augment instead of limit the storytelling that is possible. Finally, the last page on involvement specifically invites readers to review the many ways they can become involved in NEST's projects or similar efforts elsewhere. In so doing, the project seeks to realize and serve the ethical commitments of environmental communication as a field. While the SBS project is nearly at an end, the site will serve as a proof of concept for further efforts within the New England Sustainability Consortium. In fact, the first of these is already underway, since there are opportunities to develop new storymaking platforms as funding on NEST's first project will soon end and the project will draw to a close. The Consortium's next effort on the Future of Dams is studying the tradeoffs that dams pose for the communities they are connected with. Transmedia technologies will provide many opportunities for helping communities negotiate these tradeoffs and make important decisions about the role dams will play in the future.

6. CONCLUSION

Although transmedia has had a fractured, debated history, it appears from the diverse scholarly and applied approaches I have described above that this emergent method for storymaking related to sustainability science can provide environmental communicators with a powerful toolkit to relay essential information to publics in an ever more participatory fashion. Furthermore, and more importantly, integrated transmedia storymaking eschews the notion of rigid stories and instead seeks to narratively and experientially engage audiences in a robust manner. While the work of transmedia storytelling is far from having met its full potential, the examples I have shared provide a compelling case for transmedia storymaking as a key approach to working across boundaries in sustainability science and thus more adequately meet the needs of scholars, practitioners, and stakeholders. As Jenkins intoned, there is an art to this, one that inherently invites public participation as a key element of the meaning-making process.

At its best, transmedia storymaking should not only remind the reader of their role as a particular species in the world (as Herman suggested), but should apply ecological metaphors of species interdependence to the process of making meaning with stories themselves. We have seen that transmedia storytelling originally developed as a means to describe mass-produced entertainment narratives that served the purposes of elite media corporations. By contrast, the transmedia storymaking I advocate for encourages a distributed politics of engagement that relies on the free exchange of input between producers and audiences. It is my full expectation that transmedia storymaking can develop much further since it is not yet reached developmental maturity. Far from being a limitation, this realization speaks to the broad

potential of transmedia storytelling to continue informing a range of approaches to affective communication, both within sustainability science and beyond.

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