



Interfering with therapeutic tranquility: Debates surrounding biosolid waste processing in rural Ontario



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ABSTRACT

Uncertainty surrounding potential health effects of techno-industrial facilities continues to result in heightened debate about what are the *best* and *safest* options for future generations in rural places regarded by residents for their therapeutic tranquility. This research examines how a proposed biosolid processing facility in rural Ontario producing agricultural fertilizer from primarily urban sewage has in some residents elicited particularly strong concerns about potential health impacts, which are accompanied by perceptions that the tranquil and pastoral nature of their landscape is being altered. However, fueling community conflict between friends and relatives is the contested nature of the landscape's restorative qualities and the facility's disruption of this tranquil place.

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1. Introduction

Rural communities are increasingly dynamic and heterogeneous places (Woods, 2005). Although several rural residents in a continuation of family tradition remain in such rural places to live off the land through agriculture, extractive, or primary production industries, other people escaping urban areas migrate with their families to these rural spaces for tranquility (Hay, 1992). This is altering the ways old and new rural residents perceive and respond to their environments and react to each other. Differing expectations can result in intra-community conflict between residents who differentially prioritize development and economic opportunities and those who seek to protect the pastoral nature of these places. This research examines the siting of a biosolid (sewage sludge) to agricultural fertilizer processing facility, the Southgate Organic Material Recovery Centre (OMRC), to examine how residents' sense of place and feelings of tranquility in their community affects their responses to this proposed facility.

Biosolid processing and agricultural land application as a fertilizer amendment has been occurring globally for decades. In Ontario, sewage sludge and biosolids have been applied to agricultural soils for over thirty years (OMAFRA, 2010). In and around farming communities there have been many anecdotal ill-health reports, however, the evidence showing health risks associated

with this practice remains equivocal (Robinson et al., 2012; Jenkins et al., 2007; Beecher et al., 2004). Further complicating the ability to examine and quantify this risk is the multisource and heterogeneous nature – what is flushed or sent down residential, municipal, and industrial drains – of biosolids, which has made it almost impossible to test for every diluted trace element or contaminant that may be in the slurry. Experts from regulatory agencies monitor key elements and pathogens frequently and maintain that the remaining potential contaminants are at such low concentrations – particularly when further diluted as they are spread over the land – they are negligible. While some residents accept experts' collective risk assessment of biosolids, many do not, rather preferring a precautionary approach when it comes to the management of their surrounding rural environment (Mason et al., 2015). Given this, there has been a recent increase in debate towards the land application of biosolids, which mostly originates from distant urban places (Goven et al., 2012; Krogmann et al., 2001). Consequently regulatory bodies and associated management policies have come under increasing scrutiny particularly among new rural publics (Lowman et al., 2013; Jones, 2011; Beecher et al., 2004).

We draw on the emotional geographies and therapeutic landscapes literature to better understand how techno-industrial developments, landscape change, and residents' strong-felt attachments to their surroundings are impacting their perceived health and wellbeing. There is a close relationship between these emotional geographical and therapeutic landscape constructs (Milligan, 2007). The notion of therapeutic landscapes convey

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individuals' place meanings and attachments, as well as their overall sense of place, as beneficial to wellbeing and overall good health (Andrews, 2004). Developed nearly 25 years ago by Gesler (1992), the concept of therapeutic landscapes sheds light on the benefits certain physical places can have on individuals' health and wellbeing. Recent research has extended this concept to examine the everyday lives of residents' of a contaminated landscape (Smith et al., 2010) as well as the role these therapeutic 'places' play in residents' relaxation and restoration through activities such as gardening (Milligan et al., 2004) or access to 'common places' of nature (Milligan, 2007). This exploration of residents' everyday experiences with therapeutic landscapes in common places has emerged over the last decade (Wakefield and McMullan, 2005; Williams, 2007, Smith et al., 2010; Milligan, 2007), however still remains relatively under explored compared to foundational research examining 'sacred' places of healing. Examples of the therapeutic benefits of extraordinary places include the healing properties of Roman baths (Gesler, 1998) or American Indian sacred landscapes (Dobbs, 1997), and those designed as specific spaces of care and healing such as psychiatric hospital design (Wood et al., 2015) and respite centers (Conradson, 2005), among others.

Despite the extensive application of therapeutic landscape theoretical constructs in research, the notion that a place may be naturally therapeutic in its own right is contested in the literature (Williams, 2007). The main argument is places are no longer believed to be intrinsically therapeutic, rather spaces are differentially experienced subjectively and contextually and individuals develop a sense of wellbeing through diverse phenomena, which are personally relevant, within a particular space and time (Bell et al., 2015; Masuda and Crabtree, 2010; Williams, 2007; Gesler, 2005; Conradson, 2005). As insightfully pointed out, Milligan (2007) argues that an individual's association with place evolves over time, potentially shifting from restorative to risky or positive to negative. Residents and users of these locales gain a sense of wellbeing through experiences with and the appreciation of personally relevant landscape attributes. It has recently been shown that these therapeutic qualities are less about a place's specific features than the types of experiences sought out in these places (Bell et al., 2015; Masuda and Crabtree, 2010). Further, Wakefield and McMullan (2005) reveal the contested and contingent nature of therapeutic landscapes as health-affirming and health denying places co-exist and are dependent on residents' local experiences in place. This contested therapeutic experience in place is further examined by Smith et al. (2010), in the context of First Nation communities' therapeutic connection with Mother Earth in a contaminated landscape. The effects of landscapes and the experienced therapeutic benefits of these environments are differentially experienced and variable (Rose, 2012; Conradson, 2005). Given rural residents' varied senses of place, we seek to examine how the therapeutic nature of their landscape is contested with the proposal of a waste processing facility.

According to Hartig et al. (2003) many urban dwellers running away from the crowded nature of urban places expect to experience a relative solitude and tranquility in their chosen rural settings. On arrival and after some time these residents become closely attached to their environment such that these landscapes become therapeutic in their own right (Kearns and Collins, 2012). Further, Stedman (2006) and Soini et al. (2012) found that short-term residents tend to base their attachments to place on environmental quality. Access to green-spaces and untainted nature has become fundamental to these individuals' conceptions of health and wellbeing (Wakefield and McMullan, 2005; De Vries et al., 2003; Gesler, 1993). This attachment or sense of place helps determine how these residents respond to changes in their surroundings. Yet, the literature surrounding sense of place and place

attachments (Devine-Wright and Howes, 2010; Parr, 2010; Davidson and Milligan, 2004; Simmons and Walker, 2004; Altman and Low, 1992) is less often drawn on when examining these place-based impacts on residents' health and wellbeing (for an exception see Eyles and Williams, 2008). It is important to consider the inherently emotional nature of place attachments in environments undergoing change, where residents reshape their surroundings through their emotions and in turn their changing environments reshape their everyday life experiences and sense of place (Eyles and Williams, 2008; Davidson and Milligan, 2004). Additionally, Townsend and Pascal (2012) describe how it is residents' anticipations of spaces that impact the ways such spaces are subjectively experienced. Thus, changes, and even uncertain but anticipated changes, to residents' environments, such as facility siting and agricultural application of the biosolid product, can result in a cognitive and cultural reordering of the ways residents apprehend and act in place (Parr, 2010) considering that most residents move in to such places with idyllic and tranquil expectations. Milligan (2007, p. 257) states "that how people experience places is inextricably linked not only to feelings and emotions *about* these places, but also emotions engendered *by* them". Landscapes are socially constructed and influenced by alterations in residents' daily interactions, thus individuals' place attachments and responses to changes in their community depend on the distinct community context and are unique and dynamic (Rose, 2012; Gesler, 2005; Conradson, 2005). This suggests that it is people's expectations and dynamic relationships with a place that impact their landscape experiences and thus space and place are experienced subjectively and contextually. This research looks to further examine the role residents' emotional attachments to place has on their response to a potentially noxious facility in their community.

Research examining therapeutic encounters with everyday geographies, the contested nature of therapeutic landscapes, as well as residents' responses to environmental change is emerging as new areas of inquiry in the field of therapeutic landscapes. However, literature regarding residents' response to anticipated landscape changes, such as techno-industrial facility siting, in the context of everyday experiences with contaminated or 'unhealthy' places remains relatively negligible. We seek to contribute to this emerging literature by examining the contested nature of rural landscapes and differential responses to proposed landscape change due to a proposed techno-industrial development through the lens of therapeutic landscapes. The synergistic nature of the theoretical constructs of therapeutic landscapes and sense of place within emotional geographies are particularly relevant in these rural communities where, as Devine-Wright and Howes (2010) point out, many consider nature and landscape a place for psychological restoration and emotional- and self- regulation. The paper investigates residents' feelings of wellbeing and safety in their environment in the context of the biosolid facility siting process.

2. Method

2.1. Community context

The Township of Southgate (population: 7 100; Statistics Canada, 2012) is located in Southern Grey County in rural southwestern Ontario (Fig. 1) and is characterized as a small middle class rural municipality (median household income of \$56,480 compared with the provincial median household income of \$66,358 (Statistics Canada, 2013)) with a high proportion of owned private dwellings (90%). Dundalk is the only sizable village within the municipality (population 1 900; Statistics Canada, 2012; for a

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