The Place of Ruin Within Wild Pedagogies

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Abstract

This project uses critical place inquiry (Tuck & McKenzie, 2015) to examine the Hanford Site to demonstrate the potential in wild pedagogies to engage not just immaculate and inspiring wildness places but also sites of ruin. Attending to places of ruin can illuminate the ways that the social, historical, and political are intimately intertwined with the ecological. Considering places of ruin, such as Hanford, as part of wild pedagogies and curriculum opens new and necessary ways for students to learn from nature (as co-teacher). Such an approach facilitates the critical examination of our current and past human relationships with nature, the land, the water, and the place itself and has the potential to foster new types of connection, ways of nurturing, and accountability in the world.

Résumé

lieux (Tuck et McKenzie, 2015) pour observer le site Hanford afin de montrer en quoi les pédagogies de la nature permettent d'entrer en relation non seulement avec les lieux sauvages immaculés et inspirants, mais aussi avec ceux qui tombent en ruine. Leur visite aide en effet à comprendre les l'interrelation étroite entre l'écologie et les aspects sociaux, historiques et politiques. L'intégration des lieux en ruine, comme Hanford, aux programmes et aux pédagogies de la nature ouvre aux élèves de nouvelles et nécessaires possibilités d'apprendre du monde naturel (comme co-enseignant). Ce type d'approche facilite l'examen critique des relations passées et présentes des humaines avec la nature, le territoire, l'eau et les lieux en tant que tels, et encourage l'émergence de nouveaux types de relations, de manières différentes de prendre soin des choses, et d'un sentiment de responsabilité envers le monde.

Keywords: ruin, Hanford Nuclear Site, imperialism, settler colonialism, place

Mots-clés : ruines, site nucléaire Hanford, impérialisme, colonialisme, lieu

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In November of 2019, work at the 324 Building of the Hanford Nuclear Site was halted when low-level contamination was discovered on the skin of an employee working there. Building 324 is located about one mile (approx. 0.6 kilometres) from Richland, Washington and about 300 yards (approx. 275 metres) from the Columbia River. It sits atop highly contaminated radioactive soil that resulted from a spill discovered in 2010. Even though the soil beneath the building is "so radioactive that it would be lethal within two minutes of contact" (Cary,

2017), this was the eighth worker exposure in 2019 alone (Cary, 2019). These terrifying moments at the Hanford Site, and the many others that have occurred there since its inception, present a constant reminder of the ways in which Hanford, as the United States' most contaminated nuclear site, causes ongoing and widespread ecological destruction (Brown, 2014).

Wild pedagogies "re-examine relationships with places, landscapes, nature, more-than-human beings, and the wild" (Jickling et al., 2018, p. 2) in an effort to cultivate new ways of understanding, relating to, and engaging with the world. This pedagogical approach emerges from a critique of human-centric constructions of the world, with wild pedagogies operating from an understanding of the land, more-than-humans, and places as co-teachers/co-researchers (Jickling et al., 2018, pp. 7–11). Hanford and other places of ecological disaster, which I am calling "places of ruin," may not seem like obvious sites for wild pedagogies, which often seek out less contaminated, confined, and controlled spaces of nature. In this project, I use critical place inquiry methodology (Tuck & McKenzie, 2015) to examine sites of ruin in general, and Hanford specifically, as "wildness" (Jickling et al., 2018, pp. 43–44).

Approaching place through a critical place inquiry methodology allows scholars to take seriously the multiple dimensions of place by enabling an examination of "not only the physical and spatial aspects of place in relation to the social, but also more deeply with how places and our orientations to them are informed by, and determinants of, history, empire, and culture" (Tuck & McKenzie, 2015, p. 1). Ultimately, this article asks educators and scholars of wild pedagogies to consider how including places of ruin as "wildness" (Jickling et al., 2018, pp. 24-29) within wild pedagogies might offer additional ways of connecting with and learning from nature.

In this conceptual project, I use critical place inquiry methods to examine Hanford as a case study, in order to demonstrate the potential of including ruin within wild pedagogies. I understand ruin not as a fixed and static state, nor as a means to signify a place as being permanently destroyed. Instead, I draw on Tongson's (2011) notion of queer space and time in order to consider how ruin encompasses the moments when the failures and excesses of empire-building are visible—when a place has no future. This understanding of ruin opens up new possibilities for understanding human-caused environmental changes as being central to ideologies of imperialism and colonization rather than as being positioned upon "purity politics" (Shotwell, 2016).

While I explicitly examine the Hanford Site as a particular place of ruin, there are many such spaces that have been central to empire-building and are now the empire's leftover excesses that could be taken up within wild pedagogies. In this article, I suggest that attending to spaces of ruin has the potential to support the aims of wild pedagogies and to offer learners new routes of connection to both the more-than-human and place. Places of ruin such as Hanford illuminate how the social, historical, and political are intimately intertwined with the ecological. Considering them as part of wild pedagogies and curriculum opens up additional

and necessary ways for students to learn from nature (as co-teacher) and to critically examine our current and past relationships with the land, the water, the more-than-human beings, and the place itself (all of which I take as part of what we call "nature"), with the intent of fostering new types of connection, care, and accountability.

Wild Pedagogies (Re)defining Wildness and Wilderness

Wild pedagogues have reignited a conversation about "wilderness" and "wildness." Within this dialogue, they call for both a material and conceptual understanding of nature that does not reduce wilderness to human-centred social creations but instead recognizes the material particularities of wildness and wilderness places. Wild pedagogy scholars describe wilderness as "self-willed land" (Jickling et al., 2018, p. 40), where the land "and the more-than-human have freedoms and abilities to live and dwell on their own terms … where there is the freedom to flourish" (Jickling et al., 2018, pp. 26–27). In this rethinking of wilderness, wild pedagogies scholars have carefully reimagined and described both wildness and wilderness, delicately navigating between the problematic notions of wilderness as pristine and untouched on the one hand and as socially constructed and everywhere on the other.

Within wild pedagogies, the 'freedom' of a place is understood as *not an absence of human presence*, but rather as premised upon *a particular type of relationship between places and humans* that recognizes the existing relationship between the two and a responsibility toward each other. Wild pedagogies scholars recognize that all places have been impacted by and are to some extent controlled by humans. Thus, this state of being *free*, which characterizes wilderness, is dependent upon a particular type of control — "healthful control" (Jickling et al., 2018, p. 41) — that cultivates the "freedom to flourish" (Jickling et al., 2018, p. 47) within a place. Wild pedagogies scholars distinguish between "healthful controls" and "destructive controls" (Jickling et al., 2018, p. 41) with healthful control as human recognition of and responsibility to the place–human interrelationship. These conditions for wilderness are not just effects of humans. Rather, there is also an attention to the *agency* of place, that is, place as a "self-willed" being (Jickling et al., 2018, p. 26).

As wild pedagogies scholars (re)think the concept of wilderness, refuting the notions that it is either pristine and untouched or ubiquitous, they highlight the existence of a third state: "wildness" (Jickling et al., 2018, p. 24). Wild pedagogues build on the work of William Cronon, who links wildness to wonder:

> The striking power of the wild is that wonder in the face of it requires no act of will, but forces itself upon us—as an expression of the nonhuman world experienced through the lens of our cultural history—as proof that ours is not the only presence in the universe. (Cronon as cited in Jickling et al., 2018, p. 35)

Both wild pedagogies scholars and Cronon refute that the idea that wilderness is only located in pristine landscapes; instead, the wildness that exists in wild pedagogies includes "woodlots, parks, school grounds, and vacant lots" (Jickling et al., 2018, p. 43), each of which represents wilderness but at a different scale. Like wilderness, wildness is a concept that conveys a state of being "uncontrolled — even free," (Jickling et al., 2018, p. 20) but is differentiated from wilderness in that the latter is "a continuum—with more or less degrees of wildness" (Jickling et al., 2018, p. 43). Thus, within wild pedagogies, wildness is a foundation of wilderness and ultimately operates as a way of quantifying it. Both wildness and wilderness as concepts are characterized as being free or having the freedom to flourish (Jickling et al., 2018). Yet, wilderness necessitates a particular type of human-nature relationship premised upon healthful controls that results in "a more intricate web of ecological relationships" (Jickling et al., 2018, p. 43) than is found within wildness alone. This suggests that the distinction between wildness and wilderness is the type of human-nature relationship and the degree of wildness present.

Building on the understanding of wildness and wilderness outlined above, wild pedagogies scholars avoid reinscribing wilderness as places devoid of human presence or impact; instead, they rework notions of wilderness around degrees of human control and freedom. However, this conceptual framework does not always retain its rejection of the altered/untouched binary when it is applied to actual places.

Illuminating the Existing Focus on the Pristine

Wild pedagogies scholarship has been cautious about the notion of "pristine" being a defining quality of wildness or wilderness. Yet wild pedagogues inadvertently continue to seek out places that are *seemingly* or *almost* pristine and untouched as ideal wildernesses. Wild pedagogues' argument for a recuperation of wilderness as not merely social construction depends upon there being an unquestionable, perceivable, and real material significance within wilderness (Jickling et al., 2018, p. 25-29). The argument is likewise contingent on the notion that wildness operates on a continuum, with *more* wildness adding up to wilderness, as "wild places are not all equivalent" (Jickling et al., 2018, p. 43). To quantify wilderness is to defend it against becoming an empty signifier; however, this often results in wild pedagogues seeking out wild places, as sites for learning from and with nature, that reflect wilderness. This is evident in the ways that wild pedagogies differentiate wildness from wilderness, by stating that "wild pedagogy must be clear about when, where, and what wildness we seek to nurture. Urban parks and trees in our gardens can be wondrous, but they are themselves colonized sites" (Jickling et al., 2018, p. 44). This distinction that wildness, while wonderous, is colonized and therefore a less desirable site of connection, contains the implication that wilderness is *not* colonized and therefore the ideal within the wild pedagogies approach.

Part of the work of wild pedagogies has been to rethink the concept of wilderness and "…its relationship with the world … as [concepts] live, shift, and vary between interpreters and their places of arising" (Jickling et al., 2018, p. 25). Despite efforts by wild pedagogues to (re)define wildness and wilderness as open and expansive, there is clearly a particular form of *nature* that underpins the reconstruction of these concepts and is positioned as the ideal type of nature for connection within wild pedagogies. This is a nature that is not pure and pristine but is nevertheless as close to it as possible. This is a nature that is not untouched by humans, but the human impacts are still minimal and "healthful" (Jickling et al., 2018, p. 41). This is a nature that looks like lush national forests and parks, remote expanses of designated and protected spaces, and serene shorelines of scenic rivers, all of which are characterized as wilderness. This is the nature of parks, gardens, and schoolyards that mark wildness (as fragmented representations of wilderness). The nature that comprises wildness and wilderness within wild pedagogies is one that is not (yet) found in places of ruin. Thus, this article considers where we might locate ruin within existing wild pedagogies frameworks as a site of wildness. Shifting the focus within wild pedagogies from wilderness spaces as *seemingly* "pristine" and "uncolonized," I aim attention at places of ruin. This focus contributes a new approach to wild pedagogies that acknowledges the omnipresence and agency of nature, even in the toxic, disrupted, and decimated spaces of ruin.

Locating Ruin as Wildness within Wild Pedagogies

I argue that wildness, as described within wild pedagogies as a place of wonder, is a concept that not only captures beautiful and pristine places but should also include ruin. Like wonder, ruin is a place that often "forces itself upon us," a place where the more-than-human and materiality of the place often *refuse to remain contained and controlled* by humans, thereby illuminating that "…ours is not the only presence in the universe" (Cronon as cited in Jickling et al., 2018, p. 35). Thus, I argue below that ruin, too, is a place of wonder and should be considered a site of wildness.

Considering ruin as wildness offers wild pedagogies the opportunity to embrace the realities of the Anthropocene. Such a consideration rejects wild pedagogues' tendency to apply their thinking and pedagogical approaches predominantly to "wilderness" spaces—that is, spaces that appear to be *less* managed and *less* touched by humans. Embracing the places of ruin for what they are, and refusing to consider them strictly as either the desired state of nature or some romanticized apocalyptic adventure (akin to dark tourism), permits us to cultivate a concern for and investment in these places, and ultimately beckons us to be accountable for our impact on nature. Attending to ruin allows us to acknowledge the inherent value of all nature, even that which is currently characterized by "destructive control" (Jickling et al., 2018, p. 41).

Focusing on ruin within wild pedagogies has the potential to complement existing approaches that have been centred on more "pristine" wildness and wilderness natural spaces by illuminating an alternative—ruin—and thus revealing the human technologies and histories that have so dramatically influenced these spaces. By gaining insight into ruin and wilderness together, we can illuminate some of the ways in which past human actions, values, and relationships toward the land, water, and more-than-human world can cultivate ruin or wilderness, and ultimately this insight can foster new ways of being in all spaces.

By aiming attention at ruin, wild pedagogues can build upon work done by critical environmental education scholars who have critiqued the optimism of many environmental educators, which they argue has done little to curb consumption and production practices (McGregor, 2013). Critical environmental education scholars have called attention to how such hope-filled approaches to education are dependent upon the certainty of a future *for humans,* and thus hinge on an anthropocentric approach to issues related to the environment and ecosystems. In an effort to push back against these anthropocentric and often naive approaches, Selby (2010, 2015) and Wals (2010) describe how humans who have failed to grapple with the realities of catastrophic ecological destruction and loss need to embrace the "uncertain" as a means to coming to terms with the dire state of the planet and as the only way to help people "reach tipping points wherein their thinking is pushed over the edge to make sure their mind is unfrozen" (McGregor, 2013, p. 3566).

The research that calls for humans to face the reality of the Anthropocene parallels the recent emergence of "eco-grief" (Willox, 2012, p. 138) as a concept that advocates for the embrace of environmentally-based grief that comes from witnessing, experiencing, or anticipating the loss of more-than-human bodies and places. Eco-grief scholarship acknowledges the realities of our current ecological and climate crisis and calls upon the public to confront the realities and mourn the resulting losses. In this context, grief and mourning are not acts of despair, but rather are an embodied, emotional, and psychological experience of loss that seeks to find "hope in the responses ecological grief is likely to invoke" (Ellis & Cunsolo, 2018, p. 3).

This paper expands upon the invitation to embrace "the uncertain" and the grief that is brought on by changes to and loss of landscapes, ecosystems, species, and places. It calls on environmental educators to turn toward places of ruin, where there are unmistakable signs of doom, disaster, and catastrophe. Turning toward places of ruin requires that we, as humans, reckon with the destruction that we have caused, which has been disproportionately enacted by particular populations, in the interest of white supremacy, settler colonialism, capitalism, anti-Blackness, and heteropatriarchy. By attending to places of ruin as co-constituted with the social, the more-than-human, the ecosystems, and the materiality of land/water, humans might be able to hold themselves accountable

for their acts of destruction and strive to change. To do so, we must examine places of ruin, rather than only the places of beauty and abundance.

The Hanford Site as a Place of Ruin: A Case Study

Shining a spotlight on human-created places of ruin illuminates how war, empire, and imperialism are intimately linked to ecological destruction and short-sighted technological inventions. Such realizations can prompt learners to reconsider narratives about the United States' history as one of undeniable victory and exceptionalism. By adopting a critical place inquiry approach to Hanford as a site that was once imperative to imperialism, but now signifies disavowed excesses, we can highlight the possibilities of ruin within wild pedagogies.

The Hanford Site was established as part of the Manhattan Project in 1943, during World War II. The Manhattan Project's mission was to develop the first atomic bomb, which it aimed to achieve through the establishment of several nuclear research laboratories and factories across the United States (Gephart, 2003, p. 1.3). The details and the work of the Hanford Site, like all the Manhattan Project sites, was cloaked in secrecy, and thus it was with great consideration that the location of Hanford was selected so as to remain a secret. Scientists, the military, and the government were aware of the power and potential catastrophic effects of such an endeavour, and thus sought sites where an accident would have a lesser impact and fewer casualties (Gephart, 2003, p. 1.4). Colonel Franklin Matthias, who was tasked with site selection, scoured locations across the western United States, and selected what appeared to be a desolate, desert sagebrush wasteland in south central Washington State. Yet, in reality, this shrub-steppe ecosystem was home to a variety of rare native plants and provides habitat for numerous endangered species (Hanford Reach National Monument CCP, 2008, p. 1:4). What would become the Hanford Site was situated along the banks of the mighty Columbia River, whose waters would be ideal for cooling reactors. Additionally, the region had a mild climate and small population. Once decided on, Hanford was established on a 670-square mile (approx. 1,735 km^2) tract of land at the base of Rattlesnake Mountain, about seven miles (approx. 11 km) from the small town of Richland, Washington (Gephart, 2003, p. 1.4–1.5; Gerber, 2007, pp. 19–20).

The Hanford Site was one of two nuclear material production sites where uranium was transformed into plutonium. Just nine months after construction, Hanford produced its first plutonium, which would be used in the catastrophic bombing of Nagasaki and Hiroshima, Japan in 1945 that killed hundreds of thousands of people, most of whom were civilians (Kelly, 2009). Thus, Hanford, as a place, was essential to U.S. empire-building. The atomic bombs dropped on Japan have been said to have ended World War II, as Japan surrendered one day after the second bomb was detonated. As a result, workers at Hanford believed that their efforts had contributed to world peace and were proud of their role

in national defence (Gerber, 2007, pp. 58–59). The local Richland newspaper headlines following Japan's surrender read, "PEACE! OUR BOMB CLINCHED IT!" (Gerber, 2007, p. 59).

During the Cold War, Hanford was expanded to include nine additional plutonium reactors along the river. Today, the entire facility now extends over 586 square miles (approx. 1,517 km^2) (United States Department of Energy, 2019). Once the site of nuclear production used in more than 60,000 war bombs (Gallucci, 2020, p. 26), intimately linked to global war-making processes and paramount to U.S. imperialism, Hanford is now a decommissioned complex and national monument. It is also the United States' largest nuclear cleanup site.

Since its inception, and now through its phase of cleanup, Hanford has emitted radioactive and chemical wastes. For example, cooling reactors released billions of gallons of contaminated cooling water into the Columbia River and the surrounding soil. Traces of radioactive material have been found in the fish, insects, and plants, as well as in the groundwater, air, and soil at the Hanford Site. This material originates from leaking waste storage tanks; contaminated cooling water that was dumped directly into the Columbia River; air emissions; and direct injection wells, trenches, and drums (Columbia Riverkeeper, 2011).

Located on land seized from the Wanapum and Yakama Tribes, Hanford threatens the sovereignty of all the Columbia River tribes. The 1855 treaties between the United States and the Nez Perce, Umatilla, Warm Springs, and Yakama tribal nations provide the legal grounds for the Columbia River tribes to maintain the natural resources upon which their cultures depend by establishing that "the four tribes each reserved the right to harvest fish within their respective reservations and at 'all usual and accustomed fishing places' outside the reservations and ceded areas" (Columbia River Inter-Tribal Fish Commission, 2013). Hanford poses many threats to tribal sovereignty as the facility currently occupies and is contaminating Indigenous lands as well as the plants and more-than-human relations on which their cultures depend (Schneider, 2016).

One of the most urgent concerns for Native people is how Hanford has and is continuing to harm the region's salmon populations. Some of the salmon spawning within the Hanford Reach, a free-flowing section of the Columbia River that is adjacent to Hanford, have been found to be "contaminated by chromium, strontium-90, uranium, and other pollutants" (Columbia Riverkeeper, 2011, p. 9). According to the City of Richmond, current nuclear levels do not pose a threat to human drinking water standards, yet local non-profits have pointed out that "current health standards do not account for the potential bioaccumulation of pollutants in the food chain and the above-average rates of fish consumption by some populations, particularly Native Americans" (Columbia Riverkeeper, 2011, p. 13). Thus, radioactive and carcinogenic contamination not only threatens the life of the salmon themselves but also disproportionately impacts Indigenous peoples, as tribal nations throughout the Columbia River watershed continue to depend on salmon for subsistence and economic survival (Schneider, 2016).

By considering Hanford as ruin within wild pedagogies, learners are driven to question the *costs* of U.S. exceptionalism and imperialism. Thus far the price has been paid by the land, water, more-than-human, and human communities that comprise Hanford and the surrounding area, as well as those who experienced the bombings in Japan. The Hanford Site's legacy as a toxic waste site illuminates our relationship to land, nature, and water as being predicated upon extraction, consumption, and disposal, with little regard for the place itself or the other inhabitants with whom we coexist. It is this separation of humans from nature, and a denial of the reality that humans are in an interdependent relationship with nature, that underpins much of the ideological framework which enables such ecological destruction. However, sites of ruin have the potential to operate as teaching points within wild pedagogies by illuminating the ways in which humans and nature are intertwined and by demonstrating that we must cultivate new relationships—ones that are not predicated upon fueling imperialist wars.

Learning from Ruin Within Wild Pedagogies

Centring ruins such as Hanford within wild pedagogies has the potential to illuminate settler colonialism, imperialism, and ecological destruction as intimately intertwined and ongoing processes. This is not to say that settler colonialism is not central to all land, including seemingly pristine and untouched wilderness places, but rather that ruin offers a particular lens through which to engage and challenge settler colonialism. While wild pedagogues differentiate between wilderness and wildness, by stating that the later is colonized (Jickling et al., 2018, p. 44), it is not just wildness that is colonized. Instead, all spaces—including ruin, wildness, and wilderness—are colonized, and they are simultaneously particular, in so far as colonization shapes the literal land and more-than-humans in distinct ways (Schneider, 2013). As McCoy et al (2016) illuminate, place is always intertwined with land, and thus with settler colonialism as well. The "healthful impact" that wild pedagogies uses to define wilderness spaces is all too often the result of a formal designation such as national park, wilderness area, or wildlife refuge. Indigenous scholars have long pointed out that such conservation enclosures are the direct result of settler colonial theft (Carroll, 2014). Without an explicit consideration of the ways that imperialism and settler colonialism continue to structure places—including wildness and wilderness—environmental education generally, and wild pedagogies in particular, have the potential to reinforce ahistorical and apolitical approaches to learning, at the cost of considering social, historical, and political frameworks that impact place (Gough, 2013). Such an approach in education is always problematic, but in the United States, Canada, and other settler states, this is particularly troubling, as it operates as erasure and reinforces settler colonialism. Wolfe (2006) describes this process of erasure as the "logic of elimination" (p. 387), whereby settler colonialism seeks to remove and/or

destroy the Native in order to gain access and claim rights to a territory. This ongoing omission of settler colonialism within academic curriculum, pedagogy, and discourses operates in conjunction with the physical and ongoing violence of settler colonialist policies, ideologies and frameworks that seek to remove and/or exterminate Indigenous communities (Falzetti, 2015, p. 5). I argue that wild pedagogies should always grapple with the colonial contexts that shape all lands, including places of wildness and wilderness, in order to resist reinforcing settler colonialism through logics of erasure. Examining places of ruin within wild pedagogies illuminates the explicit ways that ecological destruction of the land and water is intimately tied to structures of violence, empire, and settler colonialism.

If we are to alter our current trajectory away from continued ecological destruction, it is crucial that curriculum and pedagogy must take up and engage histories of empire-building and colonialism as foundational. Only then can we create new ways of being in relationship to the more-than-human and places. By exclusively looking toward wilderness that *appears* pristine, natural, free, and untouched, we may miss the lessons of how such destruction within ruin was *created* through values and behaviours centred on white supremacy, capitalism, imperialism, and settler colonialism. We miss the lessons to be learned from the ruin, the ongoing histories with which we must reckon, and the behaviour and ontological changes needed to halt such destruction. Turning only toward wilderness and wildness characterized by obvious abundance and beauty can inadvertently operate as an escape from the realities of ongoing social and ecological violence and destruction, and disavow the role many humans (and nation-states) play in (re)producing it. Ultimately, to foster investment in something that is considered beautiful and awe-inspiring like wilderness is an important endeavour. It is much more difficult to develop care and accountability, and even recognize our own interdependency with that which is considered damaged or ruined, however, it is a necessary task and one that I argue wild pedagogies has much to gain by taking on.

Tracing Radioactive Waste: Disrupting the Boundaries Between Wilderness and Ruin

In this paper, I have called upon environmental educators, particularly those engaging in wild pedagogies, to examine and connect not just to healthfully controlled natural spaces, but also to places of ruin, as such places have the potential to illuminate the ways in which history, culture, empire, and politics are all intertwined with the environment. Places of ruin also offer different lessons on the ways that many humans, in the interest of capitalism, settler colonialism, white supremacy, and imperialism have created this ruin, thereby dramatically altering the land, water, ecosystems, and more-than-humans. At the same time, I recognize that an examination of the materiality of ruin and the more-than-human who inhabit it, reveals that the line between wilderness and ruin is a

mythical one. All places have been and continue to be constructed, impacted, controlled, colonized, and managed by humans. Places are never separate from humans, and yet they are also agentic. Thus, they are be both simultaneously untamed/wild and restrained/managed. Likewise, human efforts to contain/conserve spaces all fail, as our boundaries—whether socially-produced or material—are still permeable.

By understanding that the land and the more-than-human world at Hanford are agentic beings, we can learn how the line between ruin and pristine is blurred. This is evident in the ways in which the carbon steel drums that were built to contain the nuclear waste have failed. It is evidenced in the radioactive traces that are now found in the groundwater, the surrounding soil, the air, and the more-than-human beings. The salmon, impacted and contaminated by this radioactive nuclear waste that has been seeping into the Columbia River, carry these radioactive toxins with them, often travelling great distances across our socially-produced state and national boundary lines. As Schneider (2013) discusses, the salmon who spawn in the Columbia River beds and nearby tributaries, as anadromous fish, do not remain within the contaminated zones of the river near Hanford. Rather, as young fry they will travel hundreds of kilometres downriver to the Pacific Ocean, where they will live for several years. They may travel hundreds and even thousands of kilometres in the ocean to feeding grounds before returning to the same riverbed to spawn.

The river's contamination not only threatens the salmon's own life and the lives of Indigenous peoples but also imperils the many other more-than-human species who also rely on salmon as a food source. For example, sea lions, bears, eagles, and river otters all prey on salmon, and the threatened southern resident killer whale population relies on them almost exclusively. Thus, this radioactive contamination has the potential to travel via the salmon to other species of animals and to other places beyond the confines of Hanford. Salmon that do not return to their spawning grounds, instead becoming sustenance for other species or perishing in the journey, run the risk of contaminating other animal species, soil, and waters. By tracing radioactive material in the more-than-human world, as the agency of place, it is obvious that the radioactive contamination and ecological threat of Hanford has the potential to impact the wilderness places beyond our imagined boundaries and borderlines. Ruin and wilderness are dynamic and interrelated.

Reading ruin as a potential site within wild pedagogies illuminates that there is no completely 'free' place, one that is outside human influence, impact, and control. Examining the Hanford Site as a particular place of ruin and tracing the movement of radioactive nuclear waste as a force in itself reveals that the line between ruin and wilderness – as a modern human technology – is permeable. The notion that we can draw a boundary around a National Park, a forest, an urban park, or a wilderness space and presume that this line will keep the place within pristine, wild, uncontrolled, untainted, uncontaminated,

and/or ultimately unchanged by what we do in the spaces outside this line is an illusion. Likewise, imagining that we can draw boundaries around ruined spaces like Hanford and contain the damage within is also illusory. Places, composed as they are of land, water, humans, and more-than-humans, are agentic and elude complete human control.

Returning to the Hanford example, engaging ruin within wild pedagogies creates possibilities for students to learn from radioactive material's agency as it moves through boundaries. Thus, approaching ruin within wild pedagogies opens conversations about how such lines are socially-produced and permeable. Yet, an even deeper lesson could be one predicated on *how* material differences between wildness and ruin result from how humans relate to and are accountable to a place—that is, *how* humans control a place through either "healthful" or "destructive" engagement. The ways in which the more-than-human world, contaminated water, soil, winds, and the radioactive material itself at Hanford resist and defy human containment and control "untames" this place of ruin; it is thus a type of wildness within wild pedagogies. The distinction between wilderness and ruin is therefore not whether the place is "free to flourish" or "controlled," but rather what kinds of relationships and histories we have had with that place. Wilderness is constructed as a place where humans' relationship to more-than-humans is premised on awe, reverence, and respect. Places outside these imaginary boundaries, and particularly places that are considered ruined, have been predicated upon relationships of extraction, profit, consumption, disposability, and possession. Both ruin and wilderness places are agentic, impacted by human histories, uncontrollable, and interrelated with humans. Both ruin and wilderness are wildness, and they merit emphasis within wild pedagogies.

Ruin as Re-Membering Education

Examining ruin within wild pedagogies can be a challenging topic in which to engage students because it has the potential to rupture status quo thinking and behaviours, and is overtly political (although all educational approaches are political). For students who live in Richland in particular, and southern central Washington in general, examining the social and ecological impacts of such histories of Hanford is fraught with emotion. For students whose families have experienced the direct impacts of contamination as "downwinders" (Edelstein, 2007) and the corresponding high rates of cancer, hypothyroidism, and spontaneous miscarriages, the dangers of Hanford are all too real. Yet, by critically engaging with ruin through a wild pedagogies approach, the common narrative of government betrayal, secrecy, and manipulation can be nuanced by through the facilitation of conversations about imperialism, U.S. exceptionalism, and settler colonialism. At the same time, instructors can foster the idea that investing in and caring for similarly damaged land, water, and more-than-human beings is worthwhile.

For other students – those whose families have an investment in Hanford and a sense of pride in the story of how Hanford brought in thousands of jobs to the region, played an essential role in U.S. victory in WWII, and holds the key to a "clean" nuclear energy future – ruin complicates these narratives. Critical examinations of Hanford as ruin offer these students a realistic view of the *costs* of cleanup, imperialism, and the dangers of such clean energy, in so far as it also produces nuclear waste. This might be a "tough sell" for a place such as Richland, where a Boeing B-17 Bomber is the high school mascot and a mushroom cloud from an atomic bomb is the school logo. Richland is a place where "proud of the cloud" is a common chant (Cary, 2019), echoing the sentiments of the area in 1945 when Hanford workers were heralded as war heroes for their role in Japan's surrender and the end of the war. Yet, the work of wild pedagogies is to disrupt the greening (or in this case the "red, white, and blueing") of the status quo. Existing wild pedagogies approaches help students to re-examine their relationships with places, landscapes, nature, the more-than-human, and the wild. However, wild pedagogies that also take up places of ruin have the potential to encourage students to reconsider history, the cultural narratives of U.S. exceptionalism, and the real impacts and costs of such histories, with the aim of helping students to reimagine and enact new ways of being in the world. Ultimately, places of ruin within wild pedagogies have the potential to advance a form of "re-membering" (Jickling et al., 2018, p. 71).

Ruin within wild pedagogies offers students a way toward re-membering as a call to be a part of this place, to care for this place, "to defend human and natural communities, to build cultural and ecological diversity, to value and recognize wholeness and integrity… and to recognize our crucial co-dependency" (Jickling et al., 2018, p. 71) with all places, including places of ruin. This supports both a critical analysis of the historical and ongoing logics of violence that created such ruin, and the opportunity to learn from the more-than-human world and the land that continue to exert agency in the face of human destruction. Under this framework, connecting to places of ruin is a rebel form of education that refuses the status quo.

In order to cultivate new ways of relating to *place* that challenge Anthropocentric frameworks, students must learn other narratives, histories, and frameworks that demonstrate how capitalism, settler colonialism, white supremacy, and imperialism are central the production of ruin. This learning has the potential to prompt new perspectives that move students toward understanding and engaging the land, water, and the more-than-human as interconnected with their own lives and as central to life itself. In order to foster new relationships with the land and more-than-humans—to learn to care for, nurture, invest in, and be accountable to them—and seek out new ways of being that are not predicated on violence, students must learn not only from the places of beauty that appear to have escaped these destructive histories, but also from both ruin and our human histories of creating ruin. Wild pedagogies which centre on ruin have the potential to teach students to not just *discard* that

which we have broken and exclusively take up seemingly untouched wilderness spaces, but rather to learn to care for that which lies beneath the damage and invest in repairing it.

Notes on Contributor

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