Chapter 9
Legitimizing Militarization or Legitimate Conservation? Collateral Value and Landscapes of the Iron Curtain Borderlands

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Abstract For most of the twentieth century, conservation efforts around the world were largely modeled after the pattern established in North America of protecting resource areas, such as forests and rangelands, or protecting wildlands that privileged rugged aesthetics and recreational opportunities. In recent decades, new forms of conservation have come into clearer focus, including the transition of militarized landscapes into new land uses dedicated to conservation. This chapter examines how changes along the Iron Curtain borderlands illustrate this type of conversion, as the region increasingly receives acclaim as the Green Belt of Europe. Examples here in central Europe, and others in North America and East Asia, challenge traditional notions of conservation in a variety of ways, but also contribute to new conservation strategies that may help reconnect people to places, even places long known for their contamination or danger. The mix of social and natural qualities at these militarized landscapes generates a diverse set of conservation practices that depend upon renegotiating ideas of public safety, beauty, restoration, and preservation. The recasting of such landscapes can be understood variably as a form of legitimating militarization or as a legitimate approach to conserving biodiversity. In either case, coming to terms with the particular contexts of politics, ecology, and history in these places proves essential if we are to adequately understand the collateral – and also conflicting – values generated by the relationship between conservation and militarization.

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9.1 Introduction

In protected areas across the United States, the year 2016 was marked by a variety of celebrations and commemorations for the centennial anniversary of the U.S. National Park Service. Beginning with the establishment of Yellowstone National Park in 1872, the U.S. has committed more than 84 million acres to national parks (U.S. National Park Service n.d.-a), and the system has been widely exported as an important model for conservation efforts worldwide. Signaling a commitment to the preservation-oriented approach to conserving lands championed by John Muir and other early national park advocates, the 1916 enabling legislation for the National Park Service emphasizes protection of "the scenery and the natural and historic objects and the wild life" of areas generally deemed to be "unimpaired" aesthetically and ecologically (U.S. National Park Service n.d.-b; see also Madron and Tilton, Chap. 2 of this book). Put more simply, for more than one hundred years the U.S. national parks have been designed to protect landscapes that fit a broadly-held notion of beautiful, natural landscapes.[1]

Since the late nineteenth century, conservationists and elected officials in the U.S. have promoted other designations that, over time, established tens of millions of hectares of protected lands in the form of National Forests, National Wildlife Refuges, Wilderness Areas, and other resource conservation areas. Each of these come with their own particular emphases, regulations, and unique histories, but most share a common focus of protecting valuable ecological, cultural, resource, or recreational areas from wanton exploitation. Added together, many of these places now constitute a cherished conservation legacy in the U.S. that dozens of other countries around the world have emulated in some form.

More recently, a rather different trend in land conservation has emerged in the U.S. and elsewhere, this time predicated not so much on the protection of pristine, "natural" areas, but focused instead on transforming heavily impacted lands to new purposes of conservation. Centered more on principles of ecological restoration than those of nature preservation, this alternative approach to conservation is becoming particularly common in the many militarized landscapes across the world that have emerged – particularly since the late 1980s – with new identities and new land use designations. This is perhaps nowhere more striking than along the Iron Curtain borderlands of central Europe, where recent decades have witnessed the transformation of the former death strip of this extensively militarized zone to a new reputation as the Green Belt of Europe (e.g. Pieck 2018; Coates 2014; Havlick 2014). Here, and in a number of other cases around the world, traditional notions of conservation are being challenged in important ways. These sites of military-to-wildlife repurposing may contribute to new conservation strategies that can help reconnect people

[1] This approach has also been subject to critique – for instantiating an improper separation of nature and society; for holding to an outdated notion of nature itself; and for privileging the protection of ostensibly pristine, "unimpaired" lands at the expense of indigenous or other populations that have made a home in these lands – but the national park ideal remains widely embraced as a means of protecting spectacular tracts of land. See, for example, Cronon 1996; Spence 1999; Jacoby 2001.

to places, even places long known for their contamination or danger. The mix of social and natural qualities at these militarized landscapes generates a diverse set of conservation practices that depend upon renegotiating ideas of public safety, beauty, restoration, and preservation (see Chap. 5 by Machado and Hupy, this book). The recasting of such landscapes can be understood variably as a legitimate approach to conserving biodiversity or as a form of legitimating militarization. In either case, coming to terms with the particular contexts of politics, ecology, and history in these places proves essential if we are to adequately understand the collateral – and also conflicting – values generated by the relationship between conservation and militarization.

9.2 From Death Strip to Green Belt

In 1946, when Winston Churchill first described "an iron curtain" descending across Europe, there was not yet a physical barrier extending across the region's borderlands. By the early 1960s, the political and ideological divide that Churchill described had hardened into a network of fencing, concrete walls, tank traps, concertina, minefields, patrol dogs, guard towers, and high voltage wires that effectively barricaded east from west and cost thousands of lives during the remainder of the Cold War. Throughout this period, from the Barents Sea in the north to the Black Sea in the south, the Iron Curtain served as the iconic feature of a divided central Europe (Figs. 9.1 and 9.2). Although the inner German border dividing East from West was the most commonly visited stretch of the Iron Curtain (see Eckert 2011), and likely remains today the area of a divided Europe that most often comes to mind, thousands of kilometers north and south of Germany were also strung with lethal fencing, guard posts, and barriers for much of the Cold War. The concrete wall dividing the city of Berlin was perhaps the most formidable of the Cold War barriers (though it also stood at least 135 kilometers east of the main line of the Iron Curtain), but many sections of the Iron Curtain borderlands featured similar walls, or combinations of walls, fencing, minefields, guards, or dogs. With human communities cleared from the borderlands along an extended swath, and casualties a regular occurrence, the Iron Curtain earned a fearsome reputation as a trans-European death strip (e.g. Harbutt 1988; Sheffer 2014).

Even as the Iron Curtain remained a central fixture of geopolitical attention during the Cold War, a number of related, collateral changes were occurring in the land uses and land cover of this extended militarized zone. With most existing land uses and residents prohibited and expelled from areas adjacent to the central European border, typically in a swath ranging from 500 m up to 10 km, cleared land steadily revegetated, cultivated areas grew feral, forests returned, and a broader, inadvertent process of rewilding took hold (Fig. 9.3). Similar processes are evident today in other militarized borders such as the Korean Peninsula's Demilitarized Zone (DMZ) (see Chap. 7 of this book by Brady) and the Green Line on the island of Cyprus. Ironically, even

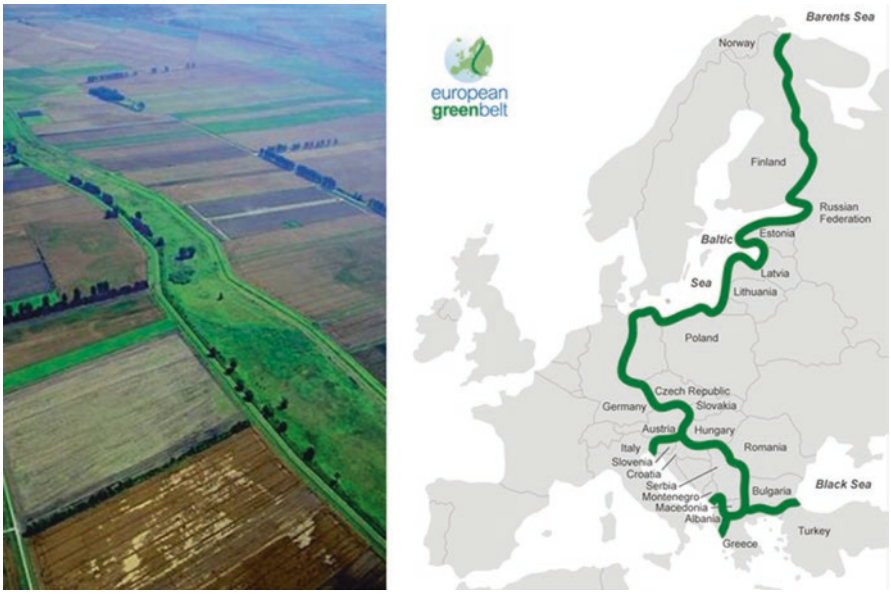

Fig. 9.1 The European Green Belt, tracing the path of the Cold War's Iron Curtain www.europe-angreenbelt.org

Fig. 9.2 Iron Curtain Open Air Museum, Mödlareuth, Germany. (Photo by David Havlick)

Fig. 9.3 Rewilding forests along the Iron Curtain and its former patrol road. (Photo by David Havlick)

as central Europe's borderlands remained notorious as a "death strip," many areas within this swath were developing new, valuable ecological qualities.

Along the inner German border, these changes quietly attracted notice, and within weeks after the Berlin Wall fell in 1989 and the broader dismantling of Iron Curtain fortifications became likely, government officials and non-governmental organizations sought to turn the decades-long tragedy of the Iron Curtain into an opportunity for conservation and unification. In East Germany, at one of the government's final meetings in 1990, the council of ministers worked to establish large tracts of the Thuringian Rhone region as a biosphere reserve, a measure that was later worked into the Unification Treaty between East and West Germany. In the spring of 1991, the United Nations formally established 185,000 hectares of this area as a UNESCO reserve that now spills across these former inner German borderlands (Our Way Into the Future n.d.).

Today, the Iron Curtain borderlands include hundreds of protected areas and a series of national parks and reserves that are collectively known as "The Green Belt of Europe." In Germany alone, there are now more than 150 nature conservation areas along the former borderlands, with more than 120 additional conservation areas protected as "ribs" extending from the main spine of the former East-West border (Geidezis and Kreutz 2012; Fig. 9.4). In 2015, Germany announced that more than sixty additional former military bases would be converted to nature reserves, and images in the stories covering this news featured guard towers and

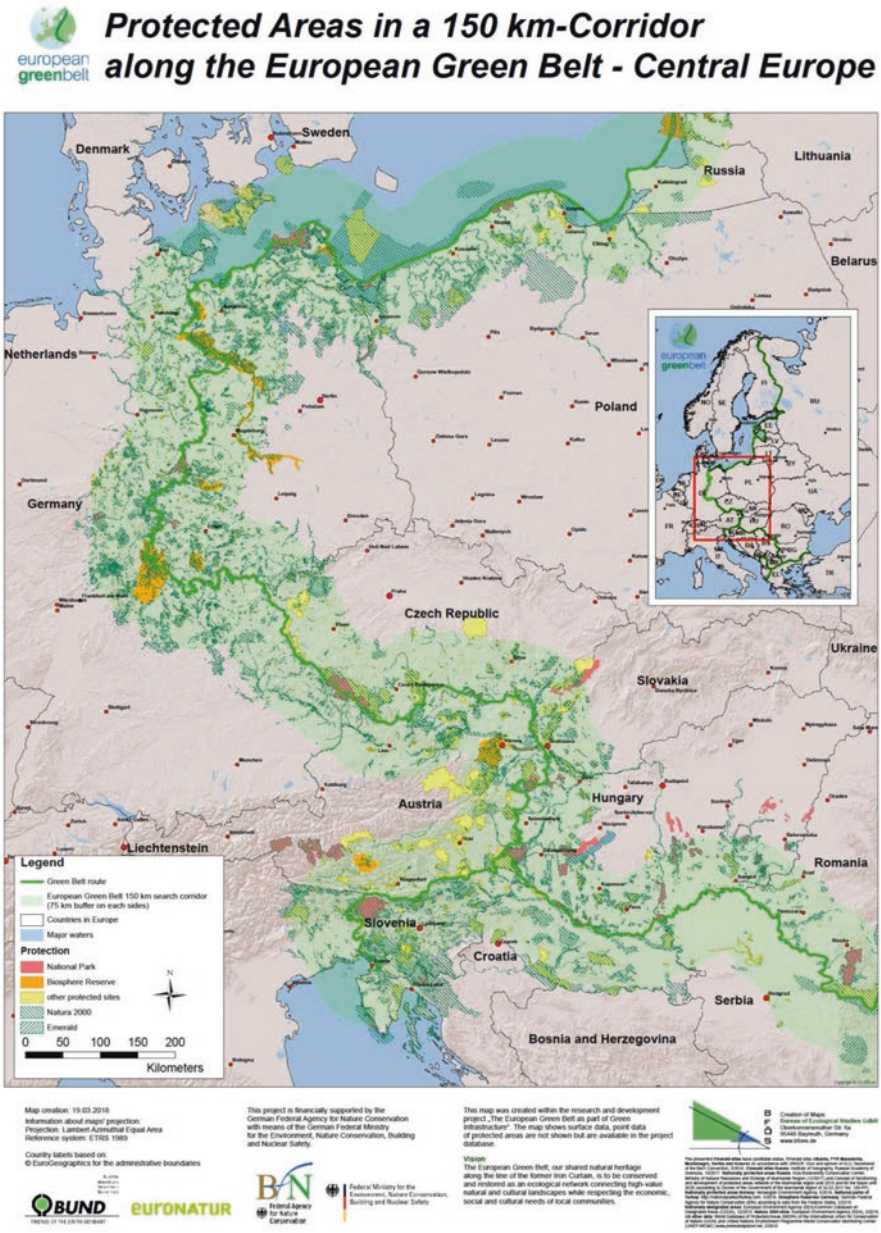

Fig. 9.4 Protected areas within 150-km corridor along the European Green Belt

scenes from the former Iron Curtain (e.g. Sola 2015). Although generally positive, the coverage of these military-to-wildlife conversions seemed invariably to highlight the irony of these transitions, positioning images of eagles against aging barbed wire and the derelict watchtowers of the new Green Belt. This, in fact, captures some of the ambiguity surrounding these changes, and notions of collateral ecological values more generally: should we be buoyed by the feel-good storyline of nature prevailing in these landscapes, after decades of militarization, isolation, and despair? Or should we more properly distrust the apparent happy ending and instead focus on the dislocation and death that in many cases preceded and, in a real sense, enabled these conservation moves? Better still, can we embrace this ambiguity and find ways that both appreciate the real conservation (and political) successes that the Death Strip-to-Green Belt changes signify, while also keeping the human cost and mixed histories of these land use changes clearly in view?

9.3 Military Environmentalism, or Ecological Militarization

Tourists who visit portions of the Iron Curtain borderlands today may well struggle to imagine the highly-militarized, lethal zone that existed here a just a few decades ago. Where electric fences and razor wire once stood, the former east-west borderlands are now marked by open fields, regenerating forests, and resurgent wildlife populations. Small towns dot the landscape, many bringing together traditional village features of the local pub, rathaus, or church, with more recent additions of solar panel-bedecked condominiums or modern resorts. It's easy, in other words, to encounter these lands as natural, leisure, or recreational landscapes that bear little explicit reminder of the 40 years of lethal Cold War fortifications.

To its credit, the European Union (EU) – along with more localized efforts – has worked to ensure that the history of these borderlands isn't entirely lost from view. In 2005, the EU formally designated an Iron Curtain Trail as one of Europe's longest bicycle routes. The vision for the trail goes beyond recreation and aspires to provide a means of "experiencing history," a model for sustainable tourism, and a route that fosters a broader sense of European identity (Cramer n.d.; The Iron Curtain Trail n.d.; Hammer 2009). Communities, non-governmental organizations, and EU member states increasingly value the lands of the former death strip for providing a variety of ecosystem and cultural services: as intact habitat and open space, a living memorial to the Cold War decades of a divided Europe, and as important areas of ecological revitalization, cultural meaning, and sustainable development (Cramer 2010, 2012).

For anyone who experienced the Iron Curtain during its Cold War period and has returned in the decades since the death strip's removal, the contrast could hardly be more striking. In the mid-1980s, I crossed from West Germany into Czechoslovakia, and later traveled through East Germany en route to Berlin. Almost 40 years later, I still recall my apprehension as we slowed for inspection by border guards, and the frightening search of my train car as armed guards pulled apart seat cushions, picked

through my belongings, and examined my tourist visa and passport. Guard dogs patroled the train tracks, and the stark strip of cleared land discouraged any impulse to simply bolt and make a run for it (a book I carried by Milan Kundera, a Czech author whose works were banned at the time, made me anxious). Of course, there were many over the years who faced actual peril, rather than risks mostly just imagined, and did just that.

In fall 2013, I returned to these formerly imposing crossings to bicycle 1200 kilometers of the borderlands as part of a research sabbatical. Quiet roads and dirt paths crossed the inner German border, which in places was so inconspicuous that it past unnoticed. National parks and scenic footbridges filled crossings that for decades had been lethal, and it was easy to get swept away by the bucolic landscapes and many shades of green that now filled the once-fortified spaces. This, no doubt, is what excites boosters of the emergent Green Belt of Europe. The tangible sense of restoration, redemption, and resurrection is hard to shake. In a number of places, local communities have added their own touches, by preserving scraps of fenceline or border wall, by installing open air museums that vividly portray the Cold War array of barriers and lethal controls, and by introducing artwork that invites questions about the current and past uses of these borderlands. These serve as reminders, so the histories of specific places are not entirely lost, but in some ways they also serve to highlight the affirming contrast between past and present.

The triple border of Slovakia, Czech Republic, and Austria, for example, sits at the confluence of the Thaya and Morava Rivers. The nearest road crossing spans a quiet bridge between two small towns. To reach the actual confluence requires a three-kilometer detour along country paths and two-track ruts, which bear all the markings of a country picnic destination and no signs of militarized borderlands. At the river's edge, however, a small sculpture signals this Cold War past, presumably, with a pair of iron cast ankles shackled in chains (Fig. 9.5). There is, then, at least a trace mingling of past and present at this site, but overwhelmingly what the few visitors to this place encounter is a seemingly natural, or at least quietly rural landscape.

These experiences of a naturalized Iron Curtain borderland are now common in many places throughout central Europe, and surely contribute to a lasting impression of militarized borders greening successfully into conservation landscapes. In one sense, there is little reason to complain about this: ecologically, these lands truly are recovering, reforesting, or rewilding. In other words, collateral ecological values are tangible here. For this, conservationists likely have cause to celebrate as protected areas expand along the former Iron Curtain borders. At the same time, the deeper implications of this greening ought to be considered. What do these kinds of changes lead us to understand about these landscapes, and how do they nudge us toward certain views about nature and society? As we move to recognize or promote the merits of collateral values, shouldn't we also maintain an obligation to keep in view what social and political processes produced these conditions, and realize that the positive outcomes were in most respects accidental or subordinate to broader processes of militarization, the eviction of local communities, and widespread application of force? In this, it may be worth invoking not just the adjectival meaning of the term

Fig. 9.5 Sculpture on the banks of the Morava River at intersecting borders of Slovakia, Czech Republic, and Austria. (Photo by David Havlick)

collateral, which signifies the secondary benefits of habitat and open spaces that militarization has produced, but also to point to collateral as a noun, or the down payment in lives disrupted and lost that was required to achieve these gains.

9.4 Pulling Back the Curtain on Green Militarization

One of the more inspiring storylines to emerge from land use changes such as those found today along the Iron Curtain borderlands frames these transitions as evidence of ecological militarization or military environmentalism (for the use of this term, see Coates et al. 2011; Dudley 2012; Coates 2014; and more critically, Woodward 2004). Put this way, the reorientation of these lands from militarized borders to conservation reserves comes from a fundamental compatibility between military management and environmental protection. The explanation for these militarization-conservation affinities varies from a more passive restoration model, where nature simply filled the void created by militarized zones or lands made off-limits to other uses, to a casting of military activities as positively beneficial for conservation goals.

The European Green Belt initiative, which focuses on developing conservation networks along the former central European borderlands, offers a relatively passive view of how these changes have come to pass: "the border zone granted nature a pause. Unwittingly, the once-divided Europe encouraged the conservation and development of valuable habitats. The border area served as a retreat for many endangered species" (European Green Belt 2016). The European Green Belt efforts also point directly at the historical significance of the earlier Iron Curtain period of these borderlands, and work to ensure that the previous, militarized condition of the area remains evident and meaningful.

A more active view of military environmentalism is promoted in publications by the U.S. military and, in some cases, by non-governmental organizations who have cooperated with the U.S. Department of Defense (DOD) or similar agencies elsewhere in the world (e.g. Benton et al. 2008). Military training and environmental protection are cast as fundamentally compatible pursuits: "Fort Bragg not only is helping ensure the survival of this endangered bird [red-cockaded woodpecker] but also is enhancing the availability of realistic training for the nation's troops" (Stein 2008). Or, as a biologist for the Canadian Department of National Defense described the country's largest military base, it is "a veritable Serengeti… with over 1,100 documented species including over 25 species at risk, as well as massive herds of elk, deer, and pronghorn antelope" (Boyd 2014).

The Center for the Environmental Management of Military Lands (CEMML), based at Colorado State University (CSU) in Fort Collins, Colorado, takes a more systematic approach to documenting the environmental contributions of military lands. According to its website, CEMML consists of "a team of environmental professionals experienced in the conservation and sustainable management of natural and cultural resources on Department of Defense lands" (CEMML 2016). CEMML is supported largely by grants from the DOD, and contracts with nearly two hundred biologists and resource managers located either on the CSU campus or at more than forty military installations across the U.S. The center identifies explicitly with the ideas of military environmentalism, noting that, "CEMML recognizes that military land use and resource conservation are compatible goals that can be accomplished through the integration of sustainable land management practices" (CEMML 2016). Similar messages come through in articles that label such transitions, "From Bombs to Birds" and signage at the refuges themselves that point to the shift "From Weapons to Wildlife" (e.g. Weeks 2009, pp. 20–23).

In many cases, the emergence of ecological benefits from militarized landscapes is presented not merely as a sign of compatibility, but in more obligate terms. In this stronger version of military environmentalism – which can be described as *strong ecological militarization* (Havlick 2006) – the ecological qualities generated by military use are not just coincidental, but actually *depend* upon the military actions brought to these places. For example, at the U.S. Army's Jefferson Proving Ground, which is now the Big Oaks National Wildlife Refuge, grasslands and forest openings that currently provide valuable habitat for songbirds were created and main-

tained by munitions spotting and tests conducted during four decades following the Second World War. The U.S. Fish and Wildlife now prescribes fire to these same areas in an effort to replicate these military disturbances and stave off encroaching shrub and forest cover.

Similarly, at a number of sites in the southeastern United States, fires sparked by military training and testing are credited with maintaining fire-dependent longleaf pine ecosystems and related species such as the red-cockaded woodpecker. As an enthusiastic *National Geographic* account of the military's environmental stewardship at Eglin Air Force Base put it, "two tilt-rotor V-22 Osprey [aircraft] emerged above the treetops and arched down river and out of sight. These impressive metal birds symbolized not just national defense but natural defense…" (Ward 2015). The article's title captures the take-home message perfectly: "Bombing Range is National Example for Wildlife Conservation."

In 2013, the Obama Administration unveiled its "Sentinel Landscapes" initiative, which aimed to combine three key objectives: sustaining military readiness, restoring and protecting wildlife habitat, and preserving agricultural lands (McKalip and Jensen 2013). As of 2018, this joint program of the DOD, U.S. Department of Agriculture, and U.S. Department of the Interior included 7 sites across the United States, providing a vivid example of how defense and conservation interests are merging both in terms of messaging and through formal agreements (see www.Sentinellandscapes.org). The name of the program resonates in multiple directions, signaling the military duty of standing watch, but broadening the implications of this beyond national security to encompass conservation and agricultural lands as well. Maintaining lands for military readiness in this way can also be seen as providing for ecological and social well-being. Of course, military officials remain clear-eyed about the real purpose of the program; as the DOD's former Assistant Secretary for Energy, Installations and Environment pointed out, "Sentinel Landscapes will be a magnet for conservation activities, but the real motivation at DOD is creating the buffer we need to protect these critical [military] missions" (USDA 2015).

As environmental planners in the military and some conservation groups tend to point out, accounts of military lands providing ecological benefits are credible and in a number of instances can be backed up by empirical studies (some of which are funded by the DOD; e.g. Kitchen et al. 2000; see also Benton et al. 2008). They also perfectly fit the narrative of collateral ecological values: military activities are dedicated to a primary mission of national defense, but ancillary or subordinate benefits can come as a result of these actions. There are a number of reasons, however, to take a more critical view of military environmentalism. These range from reports that document the environmental *damage* caused by military activities (e.g. Quist et al. 2003) and broader processes of militarization, to concerns about historical erasure and the loss of cultural meaning that may come as new layers of land use obscure previous uses, and new names or reputations for militarized landscapes take hold.

9.5 Critiquing Military Environmentalism

In Colorado, the *Colorado Springs Gazette* newspaper, much like the city's politics, is notoriously pro-military. For the past five decades, Colorado Springs has staked a claim to being a military town, home of the U.S. Air Force Academy, the Army's Fort Carson, Shriever and Peterson Air Force bases, and the headquarters for the North American Aerospace Defense Command (NORAD) that is burrowed into a 9500-foot high granite peak on the edge of town. Lately, though, the news about the military's effect on Colorado Springs hasn't been quite so rosy.

In June 2016, Colorado newspapers broke a story that the drinking water for 80,000 residents in communities downstream from Peterson Air Force Base was contaminated with toxic perfluorinated chemicals (PFCs). The chemicals, which can persist in human bodies for years, had been used for decades at Peterson as a fire-fighting foam (Finley 2016; see also NIH 2016). News coverage over the next several months shifted from concern to outrage, and in late October 2016 an investigative report by the *Gazette* documented that, "the Air Force ignored decades of warnings from its own researchers in continuing to use a chemical-laden firefighting foam that is a leading cause of contaminated drinking water for at least 6 million Americans, including thousands of people south of Colorado Springs" (Roeder and Rodgers 2016).

Even as the controversy crested into national news, with coverage in the *New York Times* (Turkewitz 2016), the Air Force continued to use the toxic foam and resist public notification of known spills. In mid-October 2016, Peterson Air Force base inadvertently dumped 150,000 gallons of PFC-contaminated water into the Colorado Springs wastewater system, which in turn delivered the polluted water into the area's principal stream, Fountain Creek. Air Force environmental officials waited 6 days before notifying the public of the release and, when pressed, simply responded that they were not required by law to alert downstream users about this, "non-regulated substance" (Roeder and Rodgers 2016). Defense officials have now acknowledged at least 2000 sites – mostly Air Force bases – contaminated by PFCs, and some experts expect that defense-related contamination from the endocrine-disrupting chemicals will eventually be documented in every U.S. state (Turkewitz 2016).

The PFC contamination is but one of many examples of continued and long-lasting environmental and public health damage associated with military base operations domestically. Barnett (2001) reported that the U.S. military generates more toxins than the top five U.S. chemical corporations combined (p. 95). By the end of the twentieth century, approximately 25,000 U.S. Army, Navy, and Air Force sites required some degree of cleanup to meet basic environmental regulations, with an anticipated cost of remediation exceeding $80 billion (adjusted to 2016 dollars) (Barnett 2001; Durant 2007).[2] Just in terms of energy consumption, the U.S. military also creates a massive ecological footprint: the DOD is responsible for 2–3% of all the energy consumed in the United States, roughly one-fourth of all jet fuel

[2] Durant, p. 78, cites a 1989 DOD estimate of $42.5 billion.

consumed worldwide, and generates more than 10% of U.S. CO2 emissions (see Renner 1991; Shulman 1992; Barnett 2001, p. 95; and Woodward 2004, p. 73).

By many accounts, the scope of environmental neglect is even more acute at the hundreds of miltary installations the U.S. maintains internationally, where in many cases environmental oversight can be scant and environmental regulations non-existent (see Gerson and Birchard 1991; Lutz and Enloe 2009; Vine 2015). At the Indian Ocean base of Diego Garcia, for example, four incidents on the small island over a 15-year period spilled more than 1.3 million gallons of jet fuel, which contaiminated groundwater and soils (Vine 2015, p. 139). At Johnston Atoll, in the Pacific Ocean, U.S. military operations left behind 16,000 tons of soil laced with dioxin and 7000 tons of soil tainted with PCBs. The atoll, which is now managed as a national wildlife refuge, was also contaminated with plutonium when nuclear-armed missile tests failed catastrophically on multiple occasions in 1962 (TenBruggencate 2003; Cleaning Up 2005).

Military training and testing activities are, of course, simply forms of preparation for the United States' sharper point of supporting a large military: the ability to assert lethal force broadly across the planet. This fundamental war-fighting mission of the military clearly brings its own acute forms of social and environmental impacts, both inadvertently and as a direct objective. The litany of these impacts is too great to attempt to list comprehensively here, but include human casualties, dislocations and social upheaval, the destruction of infrastructure, hazards created from munitions and explosive hazards, chemical contamination, soil disturbance, water and air pollution, loss of biological diversity, and lasting political instability (see, for example, Sanders 2009). To overlook these widespread and persistent consequences of military action, or to obscure these impacts by highlighting conservation success stories from various training facilities or recovering sites of militarization, is to disregard the fullest accounting of the role the military plays in the world.

To bring the focus back to military environmentalism, however, and the condition of militarized landscapes as these relate to conservation outcomes, it is worth considering DOD lands across the U.S. more broadly. A majority of the country's most severely contaminated sites – included on the National Priorities List for Superfund designation – are found on military training and testing lands (e.g. Nazaryan 2014; see also Vine 2015). Somewhat paradoxically, DOD lands are also considered the most biologically diverse of any federal lands in the U.S., with a greater concentration of Threatened and Endangered species than lands such as national parks and national forests that are more commonly associated with conservation and habitat protection (e.g. Benton et al. 2008). Though these conflicting qualities can seem challenging to reconcile in some cases, at the very least they highlight the heterogeneous character of military impacts on the environment. To take either the environmental abuse wrought by militarization or the environmental amenities found in militarized landscapes as the singular story is clearly too simplistic. *Both* are features of the military-environment relationship, and both ought to be kept in view as we move forward to develop policies that seek to protect positive environmental qualities while also repairing and holding the military accountable for the considerable damage it causes.

9.6 Collateral Values and Militarized Landscapes

In militarized landscapes transitioning explicitly to new purposes of conservation, the risk of losing sight of prior histories, and the social and environmental damage wrought by military activities, is particularly acute (e.g. Hourdequin and Havlick 2016; Havlick 2011; Davis 2005, 2007, 2015). As the earlier example from Florida's Eglin Air Force Base points out, there are, however, also lands that remain more actively militarized but still gain recognition for the ecological and conservation amenities they provide.

The Green Line dividing Cyprus is the site of the United Nations' longest-running peacekeeping mission, where since 1974 UN patrols have maintained a buffer zone put in place after decades of violent conflict that ultimately split the island's Greek and Turkish populations (Cassia 1999; Coates 2014; Chan 2016). The borderland of the Green Line remains heavily militarized and largely off-limits, even as Cypriots on both sides of the line have cooperated to address a variety of environmental, social, and cultural concerns (Grichting 2014, p. 430), and since 2003 have endured relatively few travel restrictions across the line (Chan 2016).

Within the Green Line's buffer zone, which ranges from 3.5 to 5 km in width, most all buildings and infrastructure have been isolated and left to slow ruin during the course of more than three decades. As the built environment gradually disintegrates, however, the natural environment seems to have steadily flourished. Biological inventories of the Green Line conducted since 2007 have documented rare plants and birds, small mammals, amphibians and reptiles (Grichting 2014). The population of Cyprus mouflon (*Ovis orientalis ophion*), an endemic species of wild sheep once on the brink of extinction,[3] now numbers in the thousands, and the endangered Mediterranean monk seal has been sighted along the Green Line seacoast (Coates 2014; Grichting 2014).

A continent away, on the Korean peninsula, the demilitarized zone (DMZ) separating North from South has also attracted attention for its conservation prospects amid its longstanding militarized condition (see Brady, Chap. 7 of this book). By many accounts, the DMZ is the most heavily militarized border found anywhere in the world (e.g. Lah and Kwon 2015; Moss 2014), a title previously applied to Europe's Iron Curtain. Former U.S. President Bill Clinton famously called the DMZ's 240-kilometer long border, "the scariest place on earth" (Havely 2003). The DMZ has drawn attention in recent decades, however, as a de facto wildlife reserve (Higuchi et al. 1996; Kim 1997; Turner 2005; Thomas 2009; see also Weisman 2007; Card 2008; Brady 2008). In the four-kilometer swath "preserved" between the two Korean states by watchtowers, fences, armed patrols, and nearly two million land mines, an ecosystem has managed to thrive: the DMZ now provides important habitat for migratory birds along the East Asia/Australasia flyway, and serves as a rare terrestrial sanctuary for resident species including Asiatic black bear, musk

[3] Mouflon in Cyprus are considered a distinct subspecies by the IUCN, but have a complicated genealogy and history of geographic of distribution; see for example, Pedrosa et al. 2005.

deer, Amur leopard cats, raccoon dogs, Amur gorals, and possibly Siberian tigers and Amur leopards (Card 2008; Platt 2011; see also Bird Life International n.d.).

The various representations of the social and natural qualities found in the DMZ illustrate how militarized landscapes can press us to renegotiate ideas of public safety, beauty, restoration, and preservation. South Korea increasingly presents the DMZ as a tourist attraction, and a number of tourist websites and government efforts rebrand the zone in markedly non-militarized terms. In recent years, South Korea has sought to rename the DMZ and a southern buffer zone of agricultural lands the "Peace and Life Zone" or PLZ (see DMZ Tour Course Guidebook 2009; Cain 2014). The Korea Tourism Organization offers PLZ tours and its website explains, "The name 'Peace and Life Zone' pays reference to the unpolluted natural environment and the people's general hope for the arrival of a new peaceful era to both sides of the border" (Demilitarized Zone Tours 2015). Although the website acknowledges broad outlines of the DMZ's history, and clearly still identifies the DMZ as a militarized borderland, it also casts the militarization of the zone very much as *historical*: "The DMZ and its surroundings were once the site of fierce battles during the Korean War, but has recovered from its wounds over the last half-century to become a quiet lush green area inhabited by diverse living creatures" (Demilitarized Zone Tours 2015). Another DMZ tour company website encourages prospective visitors to "Explore the Excitement of Silence" (DMZ Tours 2014). The more detailed text on the site explicitly acknowledges certain aspects of the zone's militarization, but emphasizes qualities of naturalization and the *peacefulness* of the place.

The DMZ in this way is presented as a site where, absent human activity, nature is thriving. Of course, the area might also – rather differently – be seen as land sacrificed to the security ambitions of a divided Korea, or the lingering outcome of intrapeninsular hostilities and years of violent conflict, but when its ecology is singled out, the DMZ instead can be valorized – and commodified – as territory affirmatively providing environmental and ecotourist amenities to the region. Tourists from around the world now come to the DMZ to pose for pictures in faux-North Korean classrooms, complete with framed portraits of Dear Leader Kim Jong-Il, scurry through tunnels ostensibly dug by the North in preparation for a broad military assault, buy DMZ-oriented trinkets, and enjoy a theme park named "Peace Land" (Pearson and Ingrassia 2013).

These examples from the DMZ highlight how politicized the greening of militarized space can become, even as these transitions may play out in popular media more simply as examples of nature's resilience. As the disparate representations of the DMZ suggest, casting militarized landscapes as ecological havens can create its own set of problems, with still-dangerous landscapes airbrushed into seemingly benign attractions. Elsewhere, the militarization of conservation – or what Lunstrum (2014) labels *green militarization* – remains more visibly problematic, as conservation objectives are leveraged to justify the use of deadly force against local human populations (see also Bocarejo and Ojeda 2016). At these sites and others, it remains important to find ways to highlight the military-environment relationship without diminishing the violence that occurs, but also without entirely disregarding the

conservation opportunities some of these places provide (or the real threats that poaching can pose). It seems essential, then, to ask: how might we preserve the memory, meaning, and continuing toll of these cultural impacts while also engaging with the conservation merits of these lands?[4]

9.7 Memory, Meaning, and Conservation

Dangerous military sites remain alarmingly common globally, but in the United States a number of environmental regulations and regulatory agencies exist to try to address the most egregious cases of physical contamination. As noted earlier, the U.S. National Priorities List includes many sites of military training and testing now designated for Superfund cleanups. At the federal level, the U.S. Environmental Protection Agency (EPA) oversees remediation efforts at many of these locations, and state and county public health agencies are often in the regulatory mix as well. At the Rocky Mountain Arsenal National Wildlife Refuge just outside Denver, Colorado, for example, cleanup of this former chemical weapons manufacturing site had to clear both EPA and State standards thanks to a series of lawsuits that held the U.S. Army and a private lessee of the site, Shell Chemical Corporation (now Shell Oil), accountable. Although the remediation and consolidation of contaminants at this and similar sites remain controversial, there are at least specific legal standards that pertain to the environmental degradation that took place (Nazaryan 2013; Redeker 2002; see also Iversen 2012; Draper 2014). At the Rocky Mountain Arsenal, these requirements led to a multi-billion dollar restoration effort designed to make the site safe for wildlife refuge workers and visitors (though it's worth noting this standard is weaker than what would be required of residential or commercial uses). The wildlife inhabiting the area have also been tested repeatedly for signs of higher-than-normal chemical loads.

It likely comes as no surprise that cleanup of contaminants, and financial and legal accountability, drive remediation efforts at military-to-wildlife sites such as the Rocky Mountain Arsenal. What often gets left behind in these efforts is the cultural attributes and lasting meaning of these places. As one official at the Rocky Mountain Arsenal wildlife refuge pointed out, "The number one priority is to restore as many disturbed acres as we possibly can… for the benefit of wildlife and land conservation" (author interview, 2012). This approach fits the overarching mission of the U.S. National Wildlife Refuge System: "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations" (U.S. Fish and Wildlife Service 2015). Although people are ultimately presented as the beneficiaries of the conservation services provided by the wildlife refuge system, the human histories and cultural meaning from refuge sites are not directly considered. Refuge managers

[4] On a related question, see Smallwood 2014, p. 302.

often point to their agency's "wildlife first" mission (and funding shortages) as a key reason why they're not able to attend to cultural concerns at their refuges, even as many of these same managers acknowledge that the cultural layers of their refuges merit attention.

The views of citizen volunteers and organizations from communities adjacent to military-to-wildlife refuges often support this interest in historic preservation and cultural memory. When interviewed, many of the restoration volunteers at the Rocky Mountain Arsenal indicated their concerns about the ecological character of the site and their volunteer efforts to remove invasive plants, but they also highlighted the importance of learning about the site's history. As one volunteer explained, "I think people should know the history behind the Arsenal. For a family to come and enjoy it, they have to know why they turned this place into a wildlife refuge and they have to know why it is this and not another type of place" (see Havlick et al. 2014). Framed this way, the history of the site and the changes that have taken place can actually *add* value and meaning to the emerging ecologies that the processes of militarization, ecological restoration, and conservation have produced. In nearby Commerce City, Colorado, and in other communities located near transitioning military installations, local citizens have banded together to form historical associations explicitly dedicated to keeping the cultural attributes – and in many cases, the sacrifices made by local communities – visible.

The idea that history and ecology *both* ought to be represented in militarized landscapes that are now recognized for their ecological values is an important, recurring theme for those working on the Green Belt of Europe project as well. As the main EU Parliament sponsor of the Iron Curtain Trail told me in a 2013 interview, "We can't only look to nature, that would be crazy. Culture, politics, nature, and history all need to be considered together" (Cramer 2013). The broader European Green Belt initiative similarly foregrounds both the ecological promise of the changing central European borderlands and their cultural significance: "Besides its extraordinary ecological importance, the initiative is a living example of how Europe and its diverse cultures can truly grow together. From the European Green Belt, we can learn that biological diversity goes hand in hand with cultural diversity. It is a symbol for transboundary cooperation and a Europe's [sic] shared natural and cultural heritage" (European Green Belt 2016).

The comparison between military-to-wildlife refuges in the U.S. and the changes along the former Iron Curtain is revealing, at least in part, for the structural differences in policy that underpin the respective efforts. U.S. Fish and Wildlife Service officials tasked with managing refuges that come from previous military uses are limited by their legal mandate ("wildlife first"), and when faced with ever-limited budgets often need simply to focus on conservation priorities fairly exclusively. The mandate for Europe's Green Belt, on the other hand, points to "high-value natural and cultural landscapes" (European Green Belt 2016). Given these structural differences in how the U.S. and European lands are to be managed, it's also worth examining how experiences at the ground level may influence what meaning visitors take away from these transitioning landscapes of collateral conservation.

9.8 Curation of Cultural Landscapes

Access to military-to-wildlife refuges in the U.S. varies considerably, from wide open to completely off-limits, but many of these sites provide some form of public use.[5] At sites that are open to the public, visitors often engage with these places at particular locations managed specifically for a visitor interface: visitor centers, trailheads, or kiosks installed at parking lots. Although many U.S. national wildlife refuges include thoughtful interpretive signs or exhibits highlighting cultural features, visitor surveys at several of these sites suggest that people often fail to register these efforts at curation, the cultural attributes of the refuges generally, or the more specific military histories and impacts at these sites (on this and what immediately follows, see Havlick 2016). When asked an open-ended question about what words they would use to describe the Rocky Mountain Arsenal National Wildlife Refuge, visitors' most common cluster of words were "peaceful" or "quiet," "wild" or "natural," and "beautiful." Each of these appeared in at least 25% of visitor responses, whereas only 4% of the responses made any explicit mention of remediation efforts or the military and chemical production that characterized the site for decades. When visitors at a different former military installation, now the Assabet River National Wildlife Refuge, were asked the same open-ended question, 48% responded "beautiful," 36% said "peaceful" or "quiet," and 23% suggested "wild" or "natural." Just 3% of respondents commented on the history of the site or its 50 years of military use as an ammunition storage facility.

It's worth emphasizing that the Fish and Wildlife Service does not try to hide the military history of either site. To the contrary, exhibits in new visitor centers at both refuges feature a mix of ecological and cultural displays. The landscapes themselves also contain evidence of their military use. Portions of the Rocky Mountain Arsenal remain off-limits to public use and are marked, if visitors look carefully, as Army-owned landfills for contaminated military and chemical waste. At Assabet River, dozens of large concrete igloos (or "bunkers") are scattered across the refuge, and local historians and refuge volunteers periodically offer popular "bunker tours."

These findings raise the question of what could be done differently to impress upon visitors that these refuges are not just sites of ecological flourishing, but rather exist as examples of collateral values that come from mixed cultural and ecological processes. Even with explicit curation that points out the military histories at these sites, most visitors seem to pay more notice to the live roaming bison, for instance, at the Rocky Mountain Arsenal, and not the bomb casing or hazmat-suited mannequin mounted as visitor center exhibits. What's perhaps most striking about the refuge is exactly what visitors commented on in the surveys: it appears *natural*. Where the South Plants chemical manufacturing operations once sprawled across the interior of the Rocky Mountain Arsenal site, visitors today encounter a resurgent

[5] U.S. National Wildlife Refuges in general are typically open only from dawn to dusk, and may have designated entrance locations and signed boundaries, but most are free to the public, have few if any entrance locations staffed by agency employees, and many are large enough that boundaries are generally unmonitored and porous.

shortgrass prairie and extensive prairie dog towns. Basin F, which just a few decades ago was described as the single most toxic square mile on the planet, now sports prairie grasses against a backdrop of the refuge's growing herd of bison. Little wonder then, that despite materials that depict and describe the Arsenal's history of chemical production, for most visitors the takeaway message from their time at this refuge is simply that plants and wildlife are thriving on this valuable scrap of habitat tucked between Denver, Commerce City, and Denver International Airport.

Perhaps there's no harm in this ecological flattening of the Arsenal's history, but what happened previously on this site matters, and the sacrifices demanded of the land, the neighboring communities, and the persistent contamination of groundwater and soils should be part of the public understanding of this place. To keep this in view would not require gutting the ecological commitment the U.S. Fish and Wildlife Service is required to make here, nor would it need to detract from visitors' enjoyment of their time at the refuge. The cultural layers here could be represented simply and directly, with auto tour stops that provide before and after images of the chemical facilities-turned-prairie, interpretive signs that mark the location of former schoolhouses and homesteads that predated the Army takeover of the site, and maps that indicate where munitions and napalm and rocket fuels manufactured here were used, transported, or stored. Curation of this site could also be more oblique, perhaps signaled by art installations, murals and mosaics, or even fields dotted with neon army figures (see Drenthen 2016). Each of these could serve to disrupt the tempting reception of this site as *simply a wildlife refuge*, and instead spur visitors to question the meaning of the place and the images or figures stationed upon it.

This is, in fact, the approach taken at a number of locations along the Iron Curtain borderlands. In addition to open air museums and reconstructions of the fortifications that once characterized this stretch of land, today's Green Belt of Europe is dotted with reminders that this hasn't always been a landscape known for its ecological features. Most every road crossing along the former inner German border is marked with a large brown sign that depicts a map of divided Germany and lists the date and hour that the barriers of the Iron Curtain lifted at that spot.

Elsewhere, border locations in Slovakia, the Czech Republic, Austria, and Germany are marked by metal sculptures, lists of those who died at a particular crossing, neglected border control stations, or kilometer after kilometer of overgrown patrol roads. Guard towers have intentionally been left standing, many abandoned and left to ruin, others refurbished as unique structures for lodging, restaurants, or sight-seeing. Scraps of the original walls and fences have also been left standing in a few places, but more common than all of these are the crosses. Some are elaborate, with rococo flourishes or detailed inscriptions, others stand stark in their simplicity. One, standing more than five meters high, was made of refabricated fencing torn down from the inner German border that it had long barricaded. Each of these, in their own ways, serves to disrupt the tidy acceptance of these borderlands as simply natural or naturalizing landscapes, and instead challenges those who pass through or live along these areas to question and reflect.

This highlights the lasting challenge of collateral values more generally: that we keep in view the fact that the environmental qualities emerging from such places –

and perhaps militarized lands most dramatically – have mostly not come by design, but coincidentally or by ancillary convenience. We should not deceive ourselves into thinking that military priorities have necessarily softened or yielded to a new ecological ethic. "Mission first" remains the underlying creed of military institutions, and that mission retains as its foundation the application of far-flung lethal force. As militarization and conservation emerge in various contexts as compatible objectives, it will remain important not to confuse one with the other.

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