HISTORY OF ENVIRONMENTAL CLEAN UP AND RESTORATION

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Keywords: environmental history, restoration, clean up, repair, rewild, renature, improvement, degeneration, degradation.

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Summary

A seemingly recent activity, environmental clean up and restoration is a pursuit with a long and complicated past. Efforts to return environmental conditions to a normal or healthy state are much like any human endeavor meant to improve or meliorate one's natural surroundings considered to be unsatisfactory or depleted. Environmental managers have aimed to convert damaged systems into better, often earlier states. A historical perspective of clean up and restoration, centers on understanding changing notions about environmental damage as well as changing assumptions about environmental recovery.

1. Introduction

Environmental clean up and restoration is a pursuit with a long and complicated past. Efforts to return environmental conditions to a normal or healthy state are much like any human endeavor meant to improve or meliorate one's natural surroundings considered to be unsatisfactory. Thus, technicians neutralizing a dioxin spill or engineers removing particulates from factory smoke are comparable to a farmer fertilizing impoverished soil or a forester reseeding a burned forest. All these environmental managers, now and in the past, aim to convert damaged systems into better, often earlier states. The Society for Ecological Restoration International defines ecological restoration as *the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed*. A historical perspective of clean up and restoration therefore centers on understanding changing notions about environmental damage as well as changing assumptions about environmental recovery. How does one

know when a landscape or natural system is damaged and, following human remedies, how does one deem this system sufficiently repaired? This has been a recurring question for all societies seeking to live sustainably on the earth.

The endeavor of *improvement* is thus a key concept to consider when thinking about clean up, repair, and restoration. If considered broadly, "improvement" can mean all sorts of ways by which humans shape the natural world for their own immediate needs—from straightening rivers for curtailing floods, to irrigating deserts for growing orchards, to selectively breeding animals for enhancing their desirable traits. Improvement can be viewed as any form of management that makes a natural system more productive, healthy, safe, and generally more useful to people, whether that system is pristine or degraded. As improvers, environmental restorationists aim to identify ecosystems that are inadequate, impoverished or damaged, and then set about righting or repairing those systems. This goal of manipulating the environment for human advantage is a very old project, gaining formal expression in Europe with theorists of the seventeenth and eighteenth centuries. Diderot and fellow *Encyclopédie* authors saw humanity as needing to tame, improve, and garden a raw earth in order to produce worth. European settlers and immigrants to new lands likewise viewed themselves as struggling against wild and worthless natures so as to produce useful states and conditions.

One can now understand that creating and restoring beneficial environmental traits like productivity or stability is central to many human practices. Because farmers and gardeners work to restore advantageous qualities to their land everyday, they were the first restorationists, broadly construed. 250 years ago, the French natural philosopher, Comte de Buffon, taught that humanity's highest goal on the land was to garden and improve it: "Wild nature is hideous and dying;" he said, "it is I, I alone who can make it agreeable and living." In this classic Enlightenment statement, not only is it presumed that raw nature requires human input in order to gain worth, but the resulting improvements continually degenerate on their own. Spontaneous, entropic, natural forces (animate or inanimate) serve to debilitate, dissociate, and degenerate the improvements created by humans. Farms and gardens erode and fill up with weeds to become hideous and dying, said Buffon, unless people counteract these degenerative forces. Fruit trees must be pruned or they become less productive, soils must be replenished or they loose their fertility, pastures must be properly grazed or they become weedy. This first and most basic style of restoration is therefore the process of improving degenerated gardens, what might be called *maintenance gardening*.

The second style of restoration can be called *reparative gardening* and is the type of restoration promoted by those who assumed that humanity's forces, not nature's forces, were the main source of environmental damage. By the mid-nineteenth century, theorists such as George Perkins Marsh believed that people could not only make nature agreeable and living, they could also harm and degrade it. His crucial message was that humans and their activities often upset natural processes through indirect and unknown ways, as by cutting forests that promoted river flooding and tilling soils that silted up harbors, or digging mine tunnels that dried up nearby springs. All of these activities, said Marsh, disrupted the "harmonies of nature." Marsh's reference nature was an untouched wildland that could either be improved or else degraded. He taught in *Man*

and Nature (1864) that threats to the Earth were not just *degeneration*, but also *degradation*, or the damage that results from human action. After Marsh's day, some restorationists continued improving degenerated environments in the style of Buffon, while others began repairing degraded environments. A new view of damage had provided a new way to restore.

Just as the ocean shift from Enlightenment to Romantic ways-of-thinking pushed *Homo sapiens* off its pedestal of confidence, placing in question the human ability to properly manage natural systems, various post-Romantic thinkers further challenged the assumption that people always benefit these systems. Buffon taught that enlightened humans brought beneficial changes to the natural world, with Marsh qualifying a century later that enlightened humans could also bring detrimental changes; but by the twentieth-century, some environmental theorists were saying that not humans, but *nature* brought the best changes to the natural world. For this growing fraction of enthusiasts, wild, untrammeled nature was becoming the measure of normal, healthy land. This widening belief in benevolent wilderness meant that some land managers began to practice a third style of restoration that can be called reparative naturalizing. In North America, Aldo Leopold may have been the best known advocate of reparative naturalizing, which can also be termed *rewilding*, the process of repairing degraded wildlands. By imploring land managers "to think like a mountain" so as to simulate and recreate nature's own processes, Leopold advocated a restorative style that is now today's most popular notion of restoration, but it has by no means completely replaced the other two earlier styles still being practiced: while Buffon saw culture as the main source of redemption, with Marsh seeing culture as the main source of damage, Leopold considered nature to be the main source of redemption. Each man worked solidly within his forerunners' paradigm, and then added to it. This article aims to clarify and distinguish these three different restorative views, showing how their conflation can lead to misunderstandings in the policy room and on the ground.

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Biographical Sketch

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