

# Use, Misuse and Abuse of "Sustainability" in Environmental Remediation

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**Introduction:** The term "sustainability" and variants thereof in which the word "sustainable" is attached have been used to promote a broad range of technologies and activities (e.g., sustainable remediation; sustainable development). The concept of sustainability has generated more technical conferences, special sessions topics, publications and presentations, and government and NGO policy statements than any other buzz-word in any previous year, dating back to abuse of the phrase "risk assessment" in the 1980's. "Sustainability" has achieved near pop-culture status among environmental professionals, policy makers and companies eager to promote or advocate models, policies, agendas, products or developments, often with minimal (if any) meaningful change in practices or behaviours. This term is increasingly used in conjunction with environmental remediation; but "sustainable remediation" is a tautology in the context that no regulatory agency would wilfully promote *unsustainable* remediation activities.

**Background:** The word "sustainability" is not new in the human lexicon. It can be traced to early human history, which is characterized by the rise and fall of civilizations often as a consequence of poor management of water supplies and agricultural lands. In the 18th and 19th centuries, the environmental movement emerged as a reaction to crises borne from scarcity of timber, coal, clean water and proper sanitation, prompting the first modern-era debates on the environmental consequences of unsustainable human consumption. By the early 20th century conservation movements in the U.S. and Europe had evolved the concepts of sustainability to warn governments that society and industry appetites for land, timber, minerals, fishing and water rights, if unchecked, would result in extinction of essential resources.

Social awareness has since evolved dramatically. Concepts of sustainable behaviour are well embedded in the everyday lives of people around the world – most notably in numerous consumer product recycling programs and Earth Day volunteer events held annually each April, and claims made by countless product promotions, policies and development proposals.

**Discussion:** Whether one deems a practice, development, policy or product as sustainable can be highly dependent upon how the question is scoped and scaled. Many would argue that processes such as development, industry and landscape and aquatic management (including sediment management) are by their definition unsustainable as they work against natural processes, resulting in some level of environmental degradation and depletion of resources [e.g., 1]. However, the realities of past, present and future human consumption mean that we will not only continue to alter landscapes but will also have to remediate the damage from past and future actions [2].

However, although intended to convey responsible green behavior in environmental remediation and restoration work and both large and small infrastructure construction projects, the term "sustainability" has devolved to often represent a shallow, vague concept offering few technological or practical implications. At worst, for some applications, the use of the word "sustainability" has been labeled by some environmentalists as "green-washing" by intentionally masking the absence of any technological or policy innovations. At best, its fuzzy use in so many applications runs the risk of rendering the term meaningless, undermining what should be a powerful concept.

So, where have we gone astray? What constitutes sustainable remediation practices? How should we define this critical concept? For practices and technologies, what are the meaningful and measurable attributes necessary to garner recognition as sustainable, as what, exactly, is being sustained? Finally, to what extent are current regulatory and socioeconomic decision frameworks designed to allow sustainability as a decision criterion rather than a post-hoc justification? This paper will explore these concepts.

**References:** [1] Apitz (2011) *Learned Discourses: Timely Scientific Opinions, Integ Environ Assess Manage* 7(4):691-693; [2] Wenning, Apitz (2012) *Integ Environ Assess Manage* 8(3):395-396.