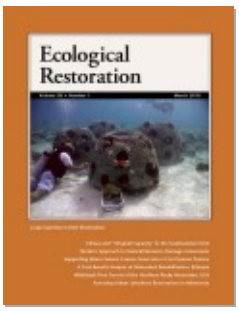
Some Thoughts on Self-Sustainability in Restoration: A Response to Thomas B. Simpson



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Thomas B. Simpson raises several issues. One issue is what it means to under-restore or over-restore a landscape. A second issue addresses the concept of sustainability in respect to restoration. Simpson used both issues as portals to express his underlying presumption that:

> "The only way to recover the past is to intentionally try to do so, which is my definition for ER. . . . And, while ecological restoration may be unnatural, it is the only hope for the classic ecosystems of the preindustrial past to reach the 22nd century."

As explained in the *SER Primer* (SERI 2004), ecological restoration returns an ecosystem to its historic developmental trajectory by reinitiating autogenic, self-sustaining processes that had been impaired. For that reason, we can only restore to the future. If internal flux was modest and environmental conditions had not undergone much change, a preindustrial landscape could reappear following restoration. However, it would be a future expression in that ecosystem's trajectory that perchance resembled one from its past. The intentional reassembly of static ecosystems from a preindustrial era is better designated as landscape design or ecosystem management, and it would avoid confusion if it were not conflated with ecological restoration.

With respect to the sustainability issue, Simpson asserted that landscapes were never self-sustaining. We agree with most aspects of his argument for the reasons he stated. However, we take issue with Simpson's assumption that by *self-sustaining* we meant that an ecosystem is homeostatic and recovers to its former order. On the contrary, intact ecosystems, both restored and previously undisturbed, may express considerable flux over time. For that reason, the initial restored state may differ notably from the predisturbance state. We caution, however, that an ecosystem is not satisfactorily restored until it expresses integrity and health in terms of the nine attributes of restored ecosystems identified in the *SER Primer*. We endorse the statement in the *SER Primer* that says:

> The restored ecosystem is self-sustaining to the same degree as its reference ecosystem, and has the potential to persist indefinitely under existing environmental conditions. . . . As in any intact ecosystem, the species composition and other attributes of a restored ecosystem may evolve as environmental conditions change.

Finally, the *SER Primer* defines restoration as *the process of assisting the recovery of an ecosystem*. We used the terms to under-restore and over-restore in our paper to refer to instances whereby restoration efforts were "under-assisting" or "over-assisting." That is, insufficient or excessive efforts were applied to reinitiate those autogenic processes that foster self-sustainability. The ideal situation is to exert only enough effort to ensure ecosystem recovery. *Assisted recovery* connotes those minimal manipulations which are all that are needed in order to reinitiate autogenic processes. However, restoration projects that suffered considerable impairment may require additional technical effort to achieve restoration.

Reference

Society for Ecological Restoration International, Science & Policy Working Group (SERI). 2004. *The SER International Primer on Ecological Restoration.* Tucson AZ: SERI. www.ser.org/content/ecological_restoration_primer.asp

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