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***Response to Hull et al. (2002) "Assumptions about ecological scale and nature knowing best hiding in environmental decisions"***

## Much More than Ecological Scale and "Nature Knowing Best" Hiding in Environmental Decisions

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Hull et al. (2002) have provided an interesting snapshot of ideas about "nature" from a sampling of those involved in the science, policy, and management of forests in southwestern Virginia. Depending on the viewpoint, "nature" is thought to be either delicately balanced, progressively evolving, and perfect, or dynamic, inefficient, and robust. Probably an equivalent sample anywhere in forested North America would disclose similar results. These opinions, split fairly evenly across the population, are the surface expression of two contesting minds: the preservationist and the interventionist.

A psychological "excavation" of the Western mind would likely show that the preservationist mindset is associated with a degree of humility lacking in the interventionist mindset. Preservationists, unwilling to force "nature" to serve humanity in every conceivable aspect, have a different sense of their place on Earth than the managerial class. The latter has embraced ecology as a tool for increasing productivity (Worster 1977) and cleaning up the environment after it, rather than as the "subversive science" that promotes an ecological ethic of interdependence (Shepard and McKinley 1969). A famous contemporary philosopher (Naess 1973) has named the two contrasting attitudes "shallow ecology" and "deep ecology." Better names are homocentric ecology and ecocentric ecology.

Whether one subscribes to this dichotomy or not, ecology is better defined as the science of context than as the science of nature, because "context" demands an explanation whereas "nature" apparently does not. "Nature" undefined includes a mishmash of concepts, as Hull et al. (2002) note:

Nature has many ecologically significant units, including "cells," "organisms," "populations," "species," "habitat," "ecosystems," "energy flows," "nutrient cycles," "diversity," etc.

And again,

[D]efinitions of environmental quality depended upon whether the person was focusing on individual species ("trees" or even more specifically "pines"), collectives of species (e.g., "ecosystems" or "biodiversity"), collectives of collectives (e.g., "forest" or "biosphere"), or individual organisms (i.e., a "tree").

Obviously, a confusion of ideas clusters around "nature" and the "organizational units" often assumed to represent it. As one example, note the lumping of "ecosystems" with "biodiversity" as collectives of species. This uncertainty is not confined to the laity; it exists in universities too. Ecologists themselves are partly to blame for never having

accepted a logical series of contextual, organizational units. Flaws in the common textbook series (organism–population–community–ecosystem) are rarely noted, yet organisms and ecosystems are volumetric, fully functional/structural units whereas populations and communities are arbitrary taxonomic groupings of organisms. Therefore, these four "organizational units" are not equally good proxies for "nature."

Botkin's (1990) book, *Discordant Harmonies: a New Ecology for the Twenty-first Century*, is an example of selective proofs that nature is chaotically unstable and, therefore, badly in need of interventionist management. Fluctuating populations are taken to be the measure of "nature," with little attention to scale and none to the stability of the landforms, soils, and climate of the geographic ecosystems within which the numbers come and go. A second example of bias when selecting proxies for nature is the textbook *Ecology: Individuals, Populations and Communities*, by Begon et al. (1996), who reject the ecosystem concept as not worth promoting.

If one asks why ecological science, including what Hull et al. (2002) call "the objectivist realm of science" and "science-based education," has not yet brought about their wished-for "visions of healthy human ecosystems that transcend the intervention/preservation dichotomy," the answer is that science is not an "objectivist realm." Scientists as cultural/social beings are influenced in their research by different conceptual models of nature, by different preferences for organizational units (see above notes on Botkin (1990) and Begon et al. (1996)), by their partiality for particular spatial and temporal scales, by ideas of stress limits and resiliency, and, most of all, by their social milieu and its taken-for-granted norms.

As to the influence of the social milieu on scientists and laity alike, those who press the interventionist viewpoint rarely understand that they are motivated (as are most in modern Western society) by ancient Judaeo-Christian norms, and thus are expressing a religious fundamentalism that proclaims Man as the center of creation and all nature his oyster. This is bad religion, bad science, and bad ecology; and, as the daily reports of environmental degradation show, very hard on the "oyster."

My preference is preservationist, and the preference of Hull et al., as natural resource managers, is clearly interventionist. That's traditional and understandable, given the failure of ecology to convincingly portray the non-human values of Earth and its life. What is bothersome is that the authors seem unaware of their biases. The "biocultural approach" that they recommend fits nicely into today's culture without rocking the boat: artfully cultivating new gardens, planning backyard Edens and sunflower forests, and even, forsooth, recommending the sci-fi "biocolonization of neighboring planets."

It all goes to show that there's much more than "ecological scale, and nature knowing best, hiding in environmental decisions."

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## RESPONSES TO THIS ARTICLE

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