

*Ecology for Environmental Professionals*, by Dorothy J. Howell, Quorum Books, Greenwood Publishing Group, Inc. Westport, CT, 1993, 215 pages, price US\$ 59.95, ISBN 0-89930-745-0

The interconnectedness of nature is not adequately appreciated among environmental professionals, particularly those serving environmental law and policy. In *Ecology for Environmental Professionals*, Dorothy J. Howell makes this assertion based on the failure of environmental policy to fully integrate sound ecological principles. *Ecology for Environmental Professionals* explores the nature and extent of definitional divergence as putative ecology becomes law, arguing that comprehension of fundamental ecology is the missing link between environmental professionals and effective environmental programs. Howell's book has two primary objectives: The first is to render ecology accessible to the environmental professional, and the second is to convey specific points of divergence between ecology and environmental policy. Through these objectives, Howell hopes to redirect the perspective of the environmental professional from local to global, from short-term to multi-generational, and from piecemeal to holistic. It is hoped that redirecting perspectives will in turn lead to refocused loyalties, and ultimately, more effective environmental programs.

Howell achieves her first objective by reducing the mathematical and statistical components of the ecological sciences to relative, digestible terms, for the 'scientifically unprepared', arguing that one need not be a scientist in order to understand and utilize scientific principles intelligently. Notably, Howell extends beyond the three spatial dimensions to include the fourth dimension of time, expressing the ecological sciences from holistic and reductionist vantages, providing an empirical comprehension of an ecosystem before illuminating a simplified analysis of its separate components. Addressed in this way, Howell informs environmental professionals at levels as diverse as ecosystems experimentation and empirical human ecology. Her discussions on energy flow, materials cycling, population dynamics, abiotic and biotic phenomena, planetary evolution, and geology are interwoven with issues of species tolerance and dependency, community equilibrium and homeostasis, and the impacts of various perturbations, particularly anthropogenic ecological perturbations. Toward the latter objective, the phenomena revealed through her analysis of interactions within an ecosystem are placed in a politicolegal context. First, Howell connects humans with nature by exploring the niche, uniqueness, and responsibilities of *homo sapiens sapiens*, showing that human populations are parts of widely ranging, complex biotic communities and ecosystems. Second, a review of existing environmental policy illustrates the inefficacy of continued emphasis on the quality of the *human* environment. Environmental policy is currently inept, Howell argues, because it continues to place public health, welfare, and recreation far above the preservation of the ecological system for its own sake.

Her poignant lessons unveil the astonishing simplicity that emerges from the complexity of our natural world, convincing the reader that it is only with a sense of profound humility that we should engage in systems ecology in order to manage

natural resources. Indeed, policy for environmental protection, pollution control, natural resource conservation and preservation should reflect the interconnectedness of natural systems and the role of *all* inhabiting species.

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*Hazardous Materials MSDS: Key to Chemical Hazards*, a videotape prepared by Air and Water Technologies (AWT), Wakefield, MA, in association with Metcalf and Eddy, 1993, US\$ 495.00, 18 min

About a year ago I reviewed several videotapes on hazardous materials prepared by Air and Water Technologies (AWT). They were excellent — and this new one is no exception. The key, as I see it, to effective hazardous material response (in an acute incident) and worker safety (in chronic chemical exposure) is information on chemical properties and hazards. The MSDSs (material safety data sheets) are a key resource in supplying that vitally needed information.

The goal of the video program (according to the brochure accompanying the video tape) is to “clearly describe(s) and explain(s) the terms and concepts contained in the MSDS and provide(s) information on its content, organization, and importance” — I believe their goal was well attained.

In addition to the video, the training package includes: a suggested lesson plan; a discussion guide; review questions and answers; an annotated script; additional references; a sign-up sheet.

The video starts with a discussion between a foreman and a new employee with the foreman relating the importance of MSDSs in conveying information to the employee on safety. The foreman first quickly reviews the major sections of MSDSs: manufacturer's identification; hazardous ingredients; physical and chemical hazards; fire and explosion hazard data; health hazards; precautions for safe handling and use; control measures.

The foreman then goes on to explore the details of information found in each of the foregoing sections, using isopropyl alcohol as an example. In the process, he explains the meaning of some of the innumerable acronyms we utilize in the environmental field: PEL, PEL-C and PEL-STEL, LEL, UEL, TLV, REL and ppm.

In addition to describing the physical and reactive properties of the chemical involved, the video shows demonstrations that chemists have prepared to illustrate the physical phenomena: relative boiling rates, etc.

Also well done is the health hazards section in which routes of entry of chemicals into the body and the negative health effects of chemicals are reviewed (including carcinogenic possibilities).

The final segment of the movie discusses chemical control measures — especially the type and use of personal protection equipment — respiration, gloves and eye protection.