

March 1995

## Review of: Dorothy J. Howell, *Ecology for Environmental Professionals* (Quorum Books 1994)

Karla Sievers McManus

Follow this and additional works at: <https://scholars.unh.edu/risk>

 Part of the [Law Commons](#), [Life Sciences Commons](#), [Physical Sciences and Mathematics Commons](#), and the [Social and Behavioral Sciences Commons](#)

---

### Repository Citation

Karla Sievers McManus, *Review of: Dorothy J. Howell, Ecology for Environmental Professionals (Quorum Books 1994)*, 6 RISK 185 (1995).

This Book Review is brought to you for free and open access by the University of New Hampshire – School of Law at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in RISK: Health, Safety & Environment (1990-2002) by an authorized editor of University of New Hampshire Scholars' Repository. For more information, please contact [ellen.phillips@law.unh.edu](mailto:ellen.phillips@law.unh.edu).

## Book Reviews

Dorothy J. Howell, *Ecology for Environmental Professionals* (Quorum Books 1994). Appendices, bibliographical references, figures, glossary, index, preface, tables. LC 93-5580; ISBN 0-89930-745-0 [215 pp. Cloth \$59.95. 88 Post Road West, Westport, CT 06881.]

Professor Howell defines ecology as “the principal natural science serving environmental protection and natural resources management.”<sup>1</sup> To protect the environment, there must be mutual respect between ecology and law,<sup>2</sup> but both are complex.<sup>3</sup> Howell says:<sup>4</sup>

... only the human organism is directly amenable to legal constraint, and then only to the extent the individual respects the law.... Other biological systems, including ecosystems... respond to intervention... according to the constraints of natural law... only dimly understood, if at all.

Howell hopes to help humans manage nature by teaching environmental professionals basic ecology. Her book is organized into six parts based on her lectures at Vermont Law School.<sup>5</sup> It teaches everything from the most basic to most complex tenets of ecology.

In part one, Howell explains science, the scientific method and the scope of ecology. She starts with the premise that everything in the environment is interconnected. An ecosystem is very efficient and holistic. Each organism has a job and must do it for the ecosystem to function.<sup>6</sup> This is demonstrated by the Theory of Integrative Levels, which holds that:<sup>7</sup>

each level of organization within the natural sciences builds on those below in conceptual steps from pure mathematics to the planetary complex of ecosystems identified as the biosphere.

---

1 At 14.

2 At 4.

3 At 49.

4 At 4.

5 At *xii*.

6 At 23.

7 At 10.

Thus, mathematics is seen as expanded by physics, chemistry and biology to reach, at the highest level, ecology.

Part two covers the basic units of a typical ecosystem, habitats, communities and specific organisms, but it is difficult to isolate them.<sup>8</sup> Ecosystems are not static; they develop and evolve.<sup>9</sup> To determine whether an ecosystem is being polluted, an environmental professional must know its initial state.<sup>10</sup> Although this is difficult, it is even more difficult to translate this information into law and policy.<sup>11</sup>

Part three describes how energy flows through ecological systems and materials cycle biogeochemically.<sup>12</sup> Parts four and five discuss the last two ecosystem elements, time and biota. For example, Howell says that extinction is infrequent and difficult to predict: "the last event in a long sequence of subtle ecological and evolutionary processes acting in concert."<sup>13</sup> She asks what an environmental professional should do if a species must adapt, evolve or face extinction.<sup>14</sup>

Howell's last chapter lists eighteen great ideas in ecology. One problem she sees with the human perspective on environmental quality is that it focuses on human use rather than healthy environments for all species. Some Native Americans consider the effects of actions through seven generations.<sup>15</sup> Maybe that would be a good rule for all.

Although short, Howell's book is informative, well organized and documented. It also has a glossary for those with limited technical backgrounds.

Karla Sievers McManus<sup>†</sup>

---

<sup>8</sup> At 39.

<sup>9</sup> At 37.

<sup>10</sup> At 49.

<sup>11</sup> At 65.

<sup>12</sup> At 86.

<sup>13</sup> At 168.

<sup>14</sup> At 170.

<sup>15</sup> At 182.

<sup>†</sup> Ms. McManus received her B.A. (Psychology) from Cornell University. She is a candidate for the J.D. at Franklin Pierce Law Center and for the M.S.L. (Environmental) at Vermont Law School.