

Lynton Keith Caldwell (1913–2006): His Pathbreaking Work in Environmental Policy and Continuing Impact on Environmental Professionals

Wendy Read Wertz

Political scientist Lynton Keith Caldwell, a principal architect of the National Environmental Policy Act of 1969 (NEPA) who also is recognized as the “inventor” of the Environmental Impact Statement (or EIS, NEPA’s “action forcing” provision), is widely regarded to be one of the twentieth century’s most influential scholars in the fields of environmental policy, politics, law, and administration. Indeed, because of his groundbreaking work during the 1960s, he has been credited with founding the new subfield of environmental policy, politics, and administration studies within the wider scope of political science and public administration in the United States. In that period, Robert Bartlett and James Gladden believe that Caldwell “proposed the wholly new field of inquiry now known as environmental policy studies” and that he was “alone in focusing on the distinctive, integrative character of the concept ‘environment’ and its implications for politics, public policy, and public administration.”¹ Harold and Margaret Sprout, the only other political scientists then pursuing a path similar to Caldwell’s, share this opinion, writing in 1978, “The long neglect of environmental subjects by academic political scientists [has been] verified . . . The roster of an interdisciplinary conference, ‘Man’s Role in Changing the Face of the Earth’ (1955), sponsored by the Wenner-Gren and National Science Foundations, included no political scientists. Two years later the conference ‘Future Environments of North America’ sponsored by the Conservation Foundation included only one, Professor Caldwell.”²

Caldwell, who for two decades specialized in the establishment and management of public administration programs both in the United States and abroad—including the countries of Columbia, Turkey, Thailand, and Indonesia—before turning his atten-

tion to environmental policy, also has been credited as a founder of another subfield in political science, that of biopolitics.³ Among the many international accolades he received, British ecologist Sir Frank Fraser Darling considered Caldwell to be “the leading thinker in biopolitics” while eminent British conservationist Max Nicholson, citing Caldwell’s work, called NEPA “epoch-making” and considered the EIS to be “perhaps the most internationally influential . . . of American environmental initiatives of the 1960s.”⁴

Caldwell died at the age of 92 on August 15, 2006, but he left behind in his collected work an invaluable legacy of insight and ideas. A visionary thinker, increasingly aware since youth of the deep interconnectedness of all life on earth, he came to believe in the need to take a holistic and interdisciplinary approach toward finding lasting solutions to environmental problems. This integral part of his thinking was at first little understood by public officials who, until the 1970s, tended to regard cases of environmental pollution or despoliation as discrete, unconnected events. As both a supporter of “sound” science and technology to help achieve these ends and a firm believer in the need to take a values-oriented approach to environmental decision making (in order to curtail the dominant beliefs in unhampered economic growth and individual rights), Caldwell advocated the need for careful consideration of cause and effect in every aspect of environmental planning and administration. The resulting volume, range, and high scholarly standard of his books, articles, and papers are astounding, encompassing as they do almost every aspect—social, cultural, political, scientific, technical, ecological, biological, health-related, international, administrative, religious, and value-oriented—of humans’ interactions with their environment, the effects of those interactions upon it, and the development of political policy and methodology based on integrative thinking to mitigate, reduce, or prevent altogether the adverse effects of careless exploitation and overuse of natural resources.

No discussion or analysis of Caldwell’s work can be accomplished with real understand-

ing, I believe, without first reading both the *Purpose*, Section 2 [42 USC § 4321] and Title I (a), *Congressional Declaration of National Environmental Policy*, Section 101 [42 USC § 4331] of the National Environmental Policy Act of 1969.⁵ These parts of NEPA reflect the ideas Caldwell first raised in his draft *A National Policy for the Environment* (see next paragraph). Together, these sections provide a concise summation of the values and beliefs comprising the essence of Caldwell’s environmental thinking down through the years, no matter the particular subject he was pursuing at the time:

(From *Purpose*): . . . [t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation . . .

(From Title I [a]): The Congress, recognizing the profound impact of man’s activity on the interrelations of all components of the natural environment . . . and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares . . . to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans . . .

During the course of the four decades (1960s through 1990s) that Caldwell dedicated principally to environmental issues, besides his large volume of academic lectures and many speeches and keynote addresses delivered at conferences around the world, he authored 16 books (a few with others). Besides these, he wrote monographs, chapters in many other books, some three dozen detailed reports on behalf of government agencies and other foundations (of which, arguably, the most important was his preliminary report for Senator Henry Jackson’s Senate Committee on Interior and Insular

Affairs, *A National Policy for the Environment* [1968], which resulted in NEPA, and more than 200 articles, which were published in a wide range of professional and academic journals and conference proceedings. Because the nature of much of their content is as informative and constructive to environmental professionals today as when Caldwell first wrote them, the remainder of this article is devoted to providing the reader a better appreciation of the innovative reasoning that lay behind his ideas, in order to gain an insight into the impact and continuing effect his work has had on the whole arena of environmental affairs.

Where Caldwell's books are concerned, environmental professionals with a particular interest in technical and scientific aspects are encouraged to read *Science and the National Environmental Policy Act* (1982) and *Between Two Worlds: Science, the Environmental Movement and Policy Choice* (1990). Those professionals with a particular interest in national and international environmental policy and administration would profit from reading *Man and His Environment: Policy and Administration* (1975), *International Environmental Policy: From the Twentieth to the Twenty-First Century* (Third Edition, 1996), *Biocracy: Public Policy and the Life Sciences* (1987), and *Environment as a Focus for Public Policy* (1995), particularly valuable because it effectively consists of a collection of 14 of Caldwell's earlier essays and reports. Those professionals involved with NEPA or impact analysis would gain insight from reading *The National Environmental Policy Act: An Agenda for the Future* (1998). Indeed, impact assessment analysis became a focus of Caldwell's work in the early 1980s, resulting in (with others) *A Study of Ways to Improve the Scientific Content and Methodology of Environmental Impact Analysis*.⁶ In a more general context, two earlier books that examine Caldwell's reasoning regarding complex human/nature relationships and the truly integrative meaning of environment (in the context that the term is commonly understood today) are *Environment: A Challenge to Modern Society* (1970) and *In Defense of Earth: International Protection of the Biosphere* (1972).

Although the range and scale of Caldwell's writing remained impressive through the

1990s, those who studied or worked closely with him during the 1970s have opined that some of his most seminal thinking was contained in papers he published between 1963 and 1975, the period in which he worked largely alone and before academic research into environmental policy and politics (which he did a good deal to initiate) had become more accessible and "mainstream." Many also consider this period to be the "golden age" of environmental legislation because, in the 1960s, there was at first a small and then a rapid growth in public awareness of environmental degradation leading to a demand for reform that resulted, during the 1970s, in an explosion of environmental policy and politics research, as well as in the enactment of much of the "bedrock" environmental legislation—commencing with NEPA—that forms the basis for modern environmental policy making today.

Because of the limited scope of this article and the sheer volume of Caldwell's output (the bibliography of his professional writings and publications from 1943–2000 occupies 44 pages of small print), I have taken a generalized approach to his environment-directed work that began in 1963, in an effort to extract from it the essence of his most profound and influential thinking. In a final analysis, although (as Caldwell fully realized) much remains to be accomplished and although he was sometimes criticized for being too idealistic and too hopeful (regarding the lack of public- and political-sector altruism toward the environment), he is also, indisputably, a man whose ideas and prognostications were both prescient and often far ahead of their time.

To provide a comprehensive summation of his ideas and their continuing effects on environmental thinking, I have borrowed from (and have significantly adapted) six main themes first selected and discussed by Bartlett and Gladden which, collectively, form the governing ideology of all Caldwell's work, not only in the period they cover (1963–1973) but as late as the year 2000.⁷ Their seventh theme, taken from suggestions first made by Caldwell in 1963—the need for far more research in environmental policy and administration and in the environmental sciences, to inform political decisions and policy making—needs

no further explanation. As far as the remaining themes are concerned, most environmental professionals will probably find something worth contemplating when planning the scope and objectives of their own future work:

- The human species is an integral part of the natural world (thus all environmental decisions need to consider the interactions and effects on both humans and their supportive biosphere).
- There is a shrinking margin for environmental miscalculation (as populations grow and resources shrink or become more contaminated, scientists and policy makers should work together to evolve an environment-driven philosophy and devise new systems—both political and institutional—in order to reduce adverse human impacts, prevent unsustainable use of resources, and achieve a shift away from the prevailing paradigm that believes humans are separate from nature and that human ingenuity can always overcome the limitations of nature: if not, Caldwell feared, future damage could well be irreparable and irreversible).
- Well-researched science into all manner of social and physical interactions taking place within the Earth's biosphere needs to be employed by academic institutions and government agencies alike to inform reasoned and innovative environmental planning and decision making.
- Values are central to environmental decision making, in order that planning objectives are not based on "cold" science or market-dominated considerations alone but are combined with these to enable a "basic ideological shift in popular values toward the environment as a means to redirect human behavior in more ecologically rational ways."⁸
- Human thinking tends to be segmented but, where complex environmental issues are involved, more integrative methods are required to reach more inclusive solutions (i.e., this speaks to an interdisciplinary approach to problem solving).
- As populations increase, societies will need to reorient their political institutions to-

ward more ecological worldviews in order to have any hope of coping effectively with a correspondingly growing number of environmental problems—which also need to be considered in comprehensive, not compartmentalized, terms.

By 1962, Caldwell had concluded that the extent of unchecked and unregulated environmental degradation in the United States required the urgent development within academic and government institutions of a new interdisciplinary field of study that would “explicitly and purposefully help redirect the behavior of humans toward their environment.”⁹ In 1963, at a time when the idea of “environment” was deeply segmented—as, for example, in the context of human/nature interactions where terms such as “the new conservation movement,” “pollution control,” or “natural beauty” were in wide use—Caldwell wrote his first, pathbreaking article, “Environment: A New Focus for Public Policy?,” which defined the concepts outlined above and called for a new, integrated way of looking at the total human environment.¹⁰ It was also the first time that a political scientist had suggested the term “environment” be interpreted holistically to include all its different components, in order to develop *environmental* policy and administration. I can do no better than to quote from this article, because it was the basis for Caldwell’s later work, it had a profound influence on the content and wording of NEPA, and it remains thought-provoking for environmental professionals today:

Fragmented action and policies affecting natural resources and human environment have brought waste and confusion in their train and are a result of the lack of recognition of environment as a general subject for public action . . . It matters little how environment is defined, provided it is defined *comprehensively* . . . The purpose of this article is to ask whether “environment” as a generic concept may enable us to see more clearly an *integrating profile* of our society . . . Does absence of consensus regarding public responsibility for the environment explain our widespread record of failure to develop stable, self-renewing, and generally desirable communities? Certainly *absence of belief that*

the environment, comprehensively conceived, is, could, or should be a public responsibility, explains the absence of public policies relating to environments as entities different from the sum total of their parts . . . Our national tendency is to deal with environmental problems *segmentally* . . . *A politics better informed by science and a science applied in the service of well-considered values* would provide a firmer and broader basis for public environmental decision making than present circumstances provide [emphasis added].

Was Caldwell too idealistic? Not entirely: he was also very well aware of, and concerned about, the American proclivity toward excessive consumption of resources and the future negative effects on the environment resulting from rapid increases in population growth, sprawl, and material consumption. Understanding that the hortatory words contained in Title I of NEPA would not of themselves be enough to persuade federal agencies always to make environmental decisions based on informed research and values, he introduced into the Senate Hearing on NEPA (held on April 16, 1969) the need for an “action forcing” provision in the Act that would force agencies to “look before they leap.” The resulting Environmental Impact Statement (EIS) has since proved to be an invaluable tool in preventing environmental waste and abuse and the despoliation of some of America’s most glorious remaining natural landscapes. It is also an invaluable part of Caldwell’s environmental legacy to the nation:

“I have already suggested, it seems to me,” Caldwell said at the Hearing, “that the Congress indeed has a responsibility to develop and could enunciate a [national policy for the environment]. But beyond this, I would urge that in the shaping of such policy, it have an action-forcing, operational aspect. When we speak of policy we ought to think of a statement which is so written that it is capable of implementation; that it is not merely a statement of things hoped for; not merely a statement of desirable goals or objectives: but that it is a statement which will compel or reinforce or assist all of these things, the executive agencies in particular, but going

beyond this, the Nation as a whole, to take the kind of action which will protect and reinforce what I have called the life support system of this country . . . It would not be enough, it seems to me, when we speak of policy, to think that a mere statement of desirable outcomes would be sufficient to give us the foundation we need for a vigorous program of what I would call national defense against environmental degradation. We need something that is clear, firm, and operational.”¹¹

Notes

1. R. V. Bartlett and J. N. Gladden, 1995, “Lynton Keith Caldwell and Environmental Policy: What Have We Learned?” in *Environment as a Focus for Public Policy*, L. K. Caldwell, Texas A&M University Press, College Station, TX, 3–4.
2. H. Sprout and M. Sprout, 1978, *The Context of Environmental Politics: Unfinished Business for America’s Third Century*, The University Press of Kentucky, Lexington, Notes to the Prologue, 4.
3. A. Somit, 1973, *British Journal of Political Science* 2(Jan.):230.
4. M. Nicholson, 1987, *The New Environmental Age*, Cambridge University Press, New York, 100–101.
5. The full wording of the National Environmental Policy Act can be downloaded from, among other sites, <http://www.epa.gov> and <http://ceq.eh.doe.gov/nepa>.
6. L. K. Caldwell, principal investigator, 1982, *Final Report to the National Science Foundation on Grant PRA-79-10014*, Indiana University, School of Public and Environmental Affairs, Bloomington, IN, 453 pp + appendices.
7. Bartlett and Gladden, 1995, *Environment as a Focus for Public Policy*, 13–16.
8. Bartlett and Gladden, 1995, *Environment as a Focus for Public Policy*, 14.
9. Bartlett and Gladden, 1995, *Environment as a Focus for Public Policy*, 3.
10. L. K. Caldwell, 1963, “Environment: A New Focus for Public Policy?” *Public Administration Review* 23:132–39; this article was winner of the William E. Mosher Award from the American Society for Public Administration in 1964.
11. L. K. Caldwell, 1969, Statement at a Hearing before the Committee on Interior and Insu-

lar Affairs, United States Senate, Ninety-First Congress, First Session on bills S. 1075, S. 237, and S. 1752, US Government Printing Office, Washington, DC, April 16.

Books by Lynton Keith Caldwell Cited in Text

1970, *Environment: A Challenge to Modern Society*, The Natural History Press; revised paperback edition (Chapter 10 added), 1971, Doubleday Anchor Books, New York.

1972, *In Defense of Earth: International Protection of the Biosphere*, Indiana University Press, Bloomington.

1975, *Man and His Environment: Policy and Administration*, Man and His Environment Series, J. Bardach, M. Bates, and S. Cain, eds., Harper and Row, New York.

1982, *Science and the National Environmental Policy Act: Redirecting Policy through Procedural Reform*, University of Alabama Press, Tuscaloosa.

1987, *Biocracy: Public Policy and the Life Sciences*, Westview, Boulder, CO.

1990, *Between Two Worlds: Science, the Environmental Movement and Policy Choice*, Cambridge University Press, New York and Cambridge, UK.

1995, *Environment as a Focus for Public Policy*, with R. V. Bartlett and J. N. Gladden, Texas University Press, College Station.

1996, *International Environmental Policy: From the Twentieth to the Twenty-First Century*, Third Edition, Duke University Press, Durham, NC; originally published as *International Environmental Policy: Emergence and Dimensions*, 1984.

1998, *The National Environmental Policy Act: An Agenda for the Future*, Indiana University Press, Bloomington.

Address correspondence to Wendy Read Wertz, 3502 William Court, Hyde Park, Bloomington, IN 47401-4383; (e-mail) wreadw@insightbb.com.