

John Cairns, Jr.: a Politically Incorrect, Plain-English Environmental Biologist

By M. RUPERT CUTLER

At age 87 and writing every day, unfettered by the constraint of insecurity associated with fear of offending the university or Virginia's anti-science attorney general, John Cairns, Jr., Virginia Tech's University Distinguished Professor of Environmental Biology Emeritus, knows exactly what is hammering life on Earth and why it is happening. He tells it like it is, and it isn't pretty:

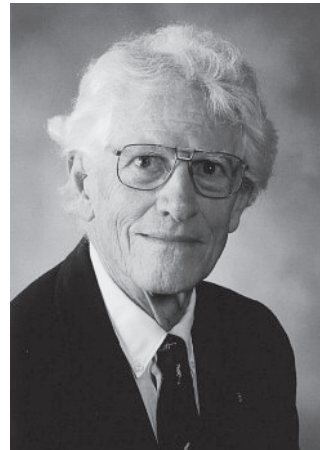
- "The biggest obstacle to sustainability is the notion of perpetual economic growth."
- "No country with an ecological deficit/ecological overshoot should permit immigration. The Scandinavian four might permit it, but the U.S. does not qualify."
- "*Homo sapiens* is a rogue species. I am optimistic about what we could do but not about what we will do."
- "Ecological restoration is no longer possible due to climate change and biotic impoverishment."
- "Scientists are reluctant to become involved in policy matters. Who can blame them, considering the assault on the science of global warming?"

Yet, as an optimist with a sunny smile, Dr. Cairns tempers these tough love conclusions by urging every locality to adopt a damaged ecosystem and restore it to create an understanding of natural systems through "hands on" experience. Why? Because "the biospheric

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life support system is the ultimate unifying theme for all life on Earth," and people need to get that message through their heads and act accordingly.

This hyperactive man, who, over his productive lifetime, has written 64 books, 650 articles, 139 editorials and testified often



Professor John Cairns, Jr.

before legislative committees on ecological destruction and repair, and whose list of international scientific honors alone exceeds the space available for this biography, began life on May 8, 1923, in Conshohocken, Pennsylvania, where a polluted river started him on his career path of protecting the environment. Dr. Cairns' autobiography (*My Quest for Sustainable Use of the Planet*; see his web site, <http://johncairns.net/>) begins:

The Schuylkill River that borders Conshohocken, Pennsylvania, was badly polluted as early as the 1930s from coal mines upstream and a number of industries. I was well aware, as one with a lifelong interest in fishing, that I could catch only carp and catfish in the river . . . [and they] often had surface lesions. Nearby . . . was a disused stone quarry that had filled with water. . . . I caught plenty of sunfish and an occasional bass. These fish were healthy. . . . A professional scientist was not needed to see the difference between polluted and unpolluted water.

His early interest in the effect of water quality on fish led to an A.B. degree in biology, chemistry, and physics from Swarthmore College in 1947, M.S. and Ph.D. degrees in zoology from the University of Pennsylvania in 1949 and 1953, and an early career focused primarily on point sources of waste discharge: "I was convinced

that, if point source discharges were properly dealt with individually and kept within the assimilative capacity of the ecosystems into which they were discharging, environmental pollution effects could be minimized.” Over the years and through the research and publication activities that followed, John Cairns, Jr. became an international authority on the restoration of aquatic ecological systems, much of that work under the auspices of the National Academy of Sciences. He has been a member of the Virginia Tech biology faculty since 1968.



HEAR NO EVIL, SPEAK NO EVIL, SEE NO EVIL: John Cairns (right), author Norman Myers (center) and the Department Head for Urban and Regional Planning, Virginia Tech (left) pose for the camera lens.

Two women were important to his professional career. He served as Curator of Limnology at the Academy of Natural Sciences of Philadelphia for 18 years, where his mentor was Dr. Ruth Patrick, who was awarded the National Medal of Science by President Bill Clinton in 1996. Dr. Cairns’ autobiography cites the “bombshell” effect of Rachel Carson’s 1962 book *Silent Spring* as importantly helping human society toward a reappraisal of existing policies and practices: “I immediately observed that objective, detached science often evoked severe penalties when economic interests were threatened.”

“Anyone contemplating an environmental career would be well advised to study the response to *Silent Spring* and more recent events, such as endocrine disruptors and global warming, before deciding to go public with any view of the danger to the human condition,” he warns in his autobiography.

But he has never applied that warning to himself. “It is necessary to take risks,” he says. He was an early advocate of scientists making public policy recommendations. He is particularly devoted to crafting science-based policy recommendations that transcend disciplines, despite the fact that multi-disciplinary work “takes scientists out of their comfort zones.” His special

roles have included that of a “synthesizer” of work done by many disciplines, all addressed to the solution of a particular problem, and a writer of “plain English” that policy-makers can comprehend and act on.

His 2010 faculty activities report to the Dean of the Virginia Tech College of Science cites “outreach” as his major contribution to the college, particularly his book-in-progress, *The Future Eaters: Metaphors and Aphorisms*, the name derived from the story of a starving Russian village where the people would not eat their seed corn.

To become “up to speed” on the breadth and depth of John Cairns’ current thinking, go to the web and download his article, “Threats to the Biosphere: Eight Interactive Global Crises,” published in the June 2010 issue of *The Journal of Cosmology* (<http://journalofcosmology.com/ClimateChange103.html>). Here is the abstract to whet your appetite for more:

Eight global crises — human economy, climate change, exponential human population growth, ecological overshoot, biotic impoverishment and the reduction of biodiversity, renewable resource depletion, energy allocation, and environmental refugees — affect each other and affect and are affected by the biosphere. Some, perhaps all, are close to tipping points that, if tipped, will result in irreversible change. And yet, no sense of urgency is apparent. If any one of the eight interactive crises passes a tipping point, it will probably act as a threat multiplier for the remaining crises. Both politicians and the average citizen believe that priorities can be established for these interactive crises, but such an option is not viable for a highly interactive system. Polls indicate that most people place economic growth as the highest priority for human society, even though the highest status should be given to the master biospheric life support system to which all other systems are subordinate.

Again, “any one crisis could drive *H. sapiens* to extinction so none can be ignored.” He is particularly concerned about the current “assault on science” in Washington, D.C., the shortage of clean water worldwide, and the lack of discussion of the importance of resource use per capita: “It would take 4.2 planets if everyone lived the way we do.”

We can’t say we weren’t warned. ■