

CURRICULUM VITAE

of

John Cairns, Jr.

as of

January 2013

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Blacksburg, Virginia 24060-6298 USA

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Blacksburg, Virginia 24061 USA
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Birth: May 8, 1923—Conshohocken, Pennsylvania

Marital Data: Married—August 5, 1944, to Jean Barbara Ogden
Children—Karen Jean
Stefan Hugh
Duncan Jay
Heather

Education: Conshohocken High School, Pennsylvania, 1940
Swarthmore College—A.B., 1947—biology/chemistry/physics
University of Pennsylvania—M.S., 1949—zoology
University of Pennsylvania—Ph.D., 1953—zoology
Hahnemann Medical College—1-year postdoctoral course in isotope methodology, 1955

Positions Held: Academy of Natural Sciences of Philadelphia
Assistant Curator of Limnology, 1948-54
Associate Curator of Limnology, 1954-61
Curator of Limnology, 1961-66
Acting Chairman of Limnology Department 1 year
(Dr. Patrick's leave of absence for Diatom Manual)
Assistant Chairman, 1963-66
University of Kansas, Lawrence, Kansas
Professor of Zoology, 1966-68
Associate Chairman, Department of Zoology, 1967-68
Virginia Polytechnic Institute and State University
Research Professor of Zoology, 1968-72
University Center for Environmental and Hazardous Materials Studies
Director, 1970-95
Emeritus, 1995-present
University Distinguished Professor of Environmental Biology, 1972-95
Emeritus, 1995-present

Temporary Teaching Positions:

Rocky Mountain Biological Laboratory, Crested Butte, Colorado
Summer 1961-63, 1971, 1984-1987, 1989-94 (research only in 1984 and 1988)
Temple University, Philadelphia, Pennsylvania—1962-63
Director—NSF Institute, Dr. H. Kranzer, Department of Education, Temple University
University of Michigan Biological Station, Pellston, Michigan
Summer 1964-70, 1972-83

Military Service: U. S. Navy, 1942-46

Honors:

Research Associate, Academy of Natural Sciences of Philadelphia, 1967
Fellow, American Association for the Advancement of Science, 1969
Presidential Commendation, 1971
University Distinguished Professor of Environmental Biology, Virginia Polytechnic Institute and State University, 1972
Honorary Member, Phi Sigma Society, 1974
Charles B. Dudley Award for outstanding publication, American Society for Testing and Materials, 1978
Superior Achievement Award, U.S. Environmental Protection Agency, 1980
Nieuwland Lecturer, University of Notre Dame, 1980
President, American Microscopic Society, 1980-81
Founders' Award, Society for Environmental Toxicology and Chemistry, 1982
Icko Iben Award for Interdisciplinary Research, American Water Resources Association, 1984
Morrison Medal for Outstanding Accomplishments in the Environmental Sciences (Awarded at American Chemical Society Pacific Rim Conference), 1984
United Nations Environmental Programme Medal for unique and significant contributions to Environmental Restoration and Sustainability, 1988
Fellow, American Academy of Arts and Sciences, 1988
Award of Excellence, American Fisheries Society, 1989
Life Achievement Award in Science from the Commonwealth of Virginia and the Science Museum of Virginia, 1991
Member, National Academy of Sciences, 1991
*Foreign Member, Linnean Society of London, 1993
Festschrift, Arranged by present and former students in honor of my 70th birthday, May 1993
Abel Wolman Distinguished Lecture, U.S. National Academy of Science, December 1994
Honorary Member, Phi Beta Kappa, May 1994
Doctor of Science, State University of New York at Binghamton, May 1994
Distinguished Scientist Award, American Institute of Biological Sciences, August 6, 1995
Literati Club (England) Award for Outstanding Paper in Environmental Management and Health (Professor Rose Award), 1995
Fellow, Association for Women in Science, February 9, 1996
Member, International Ecology Institute, Oldendorf/Luhe, Germany, 1998
Fellow, Virginia Academy of Sciences, March 1998
Fellow and Founding Member, Eco-Ethics International Union, 1998
Member, American Philosophical Society, 1999
Twentieth Century Distinguished Service Award, International Statistical Institute, 1999
Presented at the Ninth Lukas Symposium, Bowling Green State University, OH
Member, Organizing Committee for the International Symposium "The Future of Life and the Future of Our Civilization," Hiroshima, Japan, August 2001
Ruth Patrick Award, American Society for Limnology and Oceanography, February 2001
Sustained Achievement Award, Renewable Natural Resources Foundation, November 2001
Morrill Chapter, Alpha Zeta, Class of 1944 as of 13 March 2002
Special Session "Putting the Eco in Ecotoxicology," November 18, 2008, dedicated to John Cairns, Jr., Society of Environmental Toxicology and Chemistry, Annual Meeting, Tampa, Florida
Founding Member, Center for Research of the Future, 2009-present
Society for Environmental Chemistry and Toxicology named my 1988 paper, "Putting the Eco in Ecotoxicology," as one of nine papers to "read before you die"
Staff Member, International Center for Research of the Future, 2011

Fellow, Ecological Society of America, 2012

Dedication of book to John Cairns, Jr., 2013. *Ecological Restoration: Principles, Values, and Structure of an Emerging Profession, Second Edition*. Andre F. Clewell and James Aronson. Ed. Island Press, Washington, DC.

*Approximately 50 since the Society was founded

Professional Certifications:

Certified Environmental Professional 02232, Academy of Board Certified Environmental Professionals, June 15, 1991-present

Qualified Fisheries Administrator, American Fisheries Society, April 8, 1977-present

Senior Ecologist, Ecological Society of America, May 1, 1992-98

Gordon Research Conferences:

Discussion Leader, Gordon Research Conference, Stream Sanitation—1956

Discussion Leader, Gordon Research Conference, Environmental Sciences: Water—1964

Session Chairman, Gordon Research Conference, Environmental Sciences: Water—1966

Discussion Leader, Gordon Research Conference, Hazardous Material—1973

Society Memberships:

American Association of University Professors

American College of Toxicology

American Fisheries Society (Certified Fisheries Scientist)

American Institute of Biological Sciences—Member-at-large, Governing Board, 1976-79

American Microscopical Society—Vice-President, 1968-69; President-elect, 1979; President, 1980

American Water Resources Association—Research Committee, 1981

Association of Southeastern Biologists Aquatic Ecosystem Health and Management Society, Founding Member

Ecological Society of America, Program Chairman, Aquatic Ecology Section, 1978-79

Institute of Ecology—Founder

International Association for Ecology

Rocky Mountain Biological Laboratory—Trustee, 1962-73; Vice-President, 1971-72

Society for Ecological Restoration and Management, Charter Member, 1988

Society of Environmental Toxicology and Chemistry

Society of Sigma Xi

Virginia Academy of Science

Water Pollution Control Federation—Chairman, Committee on Toxic Chemicals, 1978-80

Biographical Summaries:

Marquis—Who's Who in America, 31-54th editions

Marquis—Who's Who in the East

Marquis—Who's Who in Frontier Science and Technology

Marquis—Who's Who in the Midwest

Marquis—Who's Who in Science

Marquis—Who's Who in Science and Engineering, 1st-5th editions

Marquis—Who's Who in the South and Southwest, 10-26th editions

American Men and Women of Science, 7-18th editions

The Biographical Roll of Honor

Biography of the Year, First Presidential Edition, 1987

Biological Science—Who's Who in Ecology, 1973

Community Leaders in America

Community Leaders and Noteworthy Americans, 10th edition-present

Dictionary of International Biography

The Directory of Distinguished Americans

Directory of North American Fisheries & Aquatic Scientists

Guide to Specialists in Toxic Substances

International Book of Honor

International Dictionary of Distinguished Leadership

International Scholars Directory

International Who's Who in Community Service

International Who's Who of Contemporary Achievement

Men of Achievement, 4-13th editions

Outstanding Educators of America
Personalities of America, 1-4th editions
Personalities of the Americas—First Commemorative Edition
Personalities of the South, 8-13th editions
Research Programs in Medical Sciences—1st edition
Strathmore's Who's Who
Two Thousand Notable Americans, 1-3rd editions
Who's Who in American Education, 3rd-4th editions
Who's Who in Education (Leaders in American Science Edition)
Who's Who in Health Care, 1-2nd editions
Who's Who in Society, 1988
Who's Who in Technology, 1-6th editions
Who's Who in the World, 1-13th editions
Who's Who Registry of Global Business Leaders
World Environmental Directory, 1-6th editions
World Who's Who in Science 1700 BC-1968 AD
World Who is Who and Does What in Environment & Conservation, 1997
2000 Outstanding Scientists, 2008/2009

Courses Taught:

Ethics and Science
Protozoology
Limnology
Microbial Population and Community Dynamics
Ecology
General Biology
Stressed Ecosystems
Aquatic Ecology
Environmental Science—Water
Comparative Aquatic Ecology
Ecology of Polluted Waters
General Physiology
Environmental Science—Management
Extrachromosomal Inheritance
Generating a Scientific Data Base for Societal Decisions
Biological Testing of Hazardous Chemicals
Hazard Evaluation and Ecosystem Risk Analysis
Winning the Games Scientists Play
Politics, Economics, Science—Going Beyond Disciplinary Boundaries to Protect Natural Ecosystems
Restoration Ecology

Major Non-Departmental Activities, University of Kansas:

Graduate Council (Elected)
University Senate Committee on Scholarly Publications (Appointed)
Chairman, Graduate Council Subcommittee on Student Admission Fees

Major Non-Departmental Activities, Virginia Polytechnic Institute and State University:

Research Council
President's Special Committee on Research
Committee on Graduate Programs
Cunningham Graduate Fellowship Committee
Advisory Board, Center for Public Choice
National Speakers Forum Committee
Rufner Award Committee
Committee on Center for Excellence in Undergraduate Teaching

Representative organizations with which I have been associated as consultant or to carry out research:

American Electric Power Company
American Petroleum Institute
Appalachian Power Company
Atomic Energy Commission

Bio-Test, Incorporated
Brandywine Valley Association
British Petroleum, Ltd.
Brookings Institute
Buckeye Cellulose Corporation
Campbell Soup Company
Center for Ecological Health Research
City of Philadelphia
Committee on Scholarly Communication with the People's Republic of China, National Academy of Sciences
Congressional Committee on Environmental Quality
Council for Scientific and Industrial Research, South Africa
Conservation, Air, and Water Europe
Diamond Match Company
E. I. duPont de Nemours and Company
Environmental Defense Fund
Environmental Information Institute
Environmental Protection Agency
FMC Corporation
French Creek Watershed Association
General Motors
General Reilly Group, Incorporated
Hamilton Paper Company
Hercules Incorporated
International Joint Commission (U.S.A. and Canada)
International Paper Company
Koppers Company, Incorporated
Man and the Biosphere Program – U.S. National Commission for UNESCO
Manufacturing Chemists Association
Martin Marietta
Merck Company, Incorporated
National Academy of Engineering
National Academy of Sciences
National Association of State Universities and Land-Grant Colleges
National Planning Association
National Research Council
National Wildlife Federation
New Jersey Zinc Company
NATO (North Atlantic Treaty Organization)
Office of Technology Assessment, U.S. Congress
Olin Chemical
Potomac Electric Power Company
Program Committee, International Water Pollution Research and Control, United Kingdom, September, 1984
Procter & Gamble
Scientific Group on Methodologies for the Safety Evaluation of Chemicals (68, National Academy of Sciences)
Scientists' Institute for Public Information
Senior Scholar Exchange Program, United Nations
Standard Oil of Indiana
The Soap and Detergent Association
State of California
State of Pennsylvania
State of Virginia
Statens Naturvardsverk (The National Swedish Environmental Protection Board)
Swedish Agency for Research—Cooperation with Developing Countries
Teledyne, Brown Engineering
Texas Gulf Sulfur Company
Third World Science Advisory Board
Time-Life Incorporated
TVA
U.S. Army Corps of Engineering—Waterways Experiment Station
U.S. Army Medical Research and Development Command
United Nations
University of Kalyani

University of Louisville
University of Mississippi
Virginia Farm Bureau Federation, Advisor
Wetlands Fund, Inc.
The Wilderness Conservancy at Mountain Lake, Board Member through March 2000

Service on National Research Council (the operating arm of the National Academy of Sciences and National Academy of Engineering) Committees:

Panel on Freshwater Aquatic Life and Wildlife, Water Quality Criteria 1972, 594 pp.
Committee for the Working Conference on Principles of Protocols for Evaluating Chemicals in the Environment, Principles for Evaluating Chemicals in the Environment, 1975, 454 pp.
Committee for Study of Environmental Manpower, Commission on Human Resources, Manpower for Environmental Pollution Control, 1977, 427 pp.
Military Environmental Research Committee (Installation Renovation Subcommittee), 1977-78
Geophysics Study Committee, Geophysics Research Council Board (to produce report Scientific Basis of Water Resource Management), 1979
Five-Year Research Outlook (Chapter 8—Water Resources)
Committee for Water Supply Reviews
Committee on Ecotoxicology (Chairman), Testing for Effects of Chemicals on Ecosystems, 1981, 98 pp;
Working Documents for Testing for Effects of Chemicals on Ecosystems, 1981
Committee on Application of Ecological Theory to Applied Problems, 1982
Environmental Studies Board (September 1980-October 1982)
Task Force on the Ecological Classification System for Implementing Environmental Quality Evaluation Procedures, 1981
Water Science and Technology Board (Founding Member), 1982-85
Chair, Committee on Restoration of Aquatic Ecosystems: Science, Technology and Public Policy, 1989-92
Committee on U.S. Geological Services Water Resources Research, 1991-93
Committee on Waste Disposal Options, 1992-93
Board of Environmental Studies and Toxicology (BEST), 1992-93
Correspondent, National Academy of Sciences Committee on Human Rights, 1991-present
Report Review Committee (Final approval of all National Academy Press publications), 1993-98

Service on Other Committees of National Importance:

Advisor, Division of Forestry, Fisheries, and Wildlife, TVA
Advisor, Laboratory Reorganization Committee, Office of the Administrator, U.S. Environmental Protection Agency
American Institute of Biological Sciences, Task Force for the '90s, 1990-2000
Biological Assessment Methods, American Society for Testing and Materials
Biological Water Quality Committee, Ohio River Valley Water Sanitation Commission, 1969-88
Board Member, International Union of Biological Sciences
Board Member, Ohio River Basin Consortium for Research and Education, 1985-90
Board of Scientific Advisors, The Wetlands Fund
Carey Arboretum Review Committee, New York Botanical Gardens
Committee on Certification, Ecological Society of America
Ecological Society of America Study Committee
Effluent Standards and Water Quality Information Advisory Committee (Consultant), U.S. Environmental Protection Agency
International Joint Commission (US/Canada), Science Advisory Board, 1988-90
International Statistical Ecology Program, Board of Directors and Executive Committee
Man and the Biosphere, United Nations (through State Department), 1974-88
Member, Certification Review Board of the Academy of Board Certified Environmental Professionals, 1995-97
Member, Environmental Concerns Committee, American Fisheries Society, 1989-90
Member, Senior Scientists and Engineers, American Association for the Advancement of Science, 1998-present
Membership Committee, American Academy of Arts and Sciences, 1997-98
National Wetlands Technical Council
Panel Member, Court Appointed Scientific Experts, American Association for the Advancement of Science, 2000-01
Science Advisor, Academy of Natural Sciences, Philadelphia, 2000-present

Science Advisor, SAREC, Swedish Agency for Research Cooperation with Developing Countries, 1988-94
Science Advisor, Third World Academy of Sciences, 1995-present
Scientific Advisory Board, Society for Restoring the Earth, University of California, Berkeley, 1989-92
Society for Environmental Toxicology and Chemistry, Awards Committee, 1980-83
U.S. Army Research and Development Command (Munitions Water Quality Standards Development Program), 1971-86

U.S. Environmental Protection Agency Science Advisory Board – Ecology Committee, Water Quality Committee, Biological Monitoring Committee, 1978-81; Chairman, Environmental Effects, Transport and Fate Committee, 1982-83
U.S. Environmental Protection Agency Environmental Biology Review Panel, 1987-91

Service on Editorial Boards:

Board of Consulting Editors, Encyclopedia of Life Support Systems, EOLSS Publishers, Surrey, United Kingdom
Board of Associate Editors, Environmental Health Perspectives, 1993-97; Editorial Board, 1997-2001
Series Editor (co-editor was Professor R. M. Harrison), Environmental Management Series, 1991-93, Elsevier Science Publishers Ltd.; transferred to Chapman & Hall Publishers, 1993-97
Associate Editor, Aquatic Toxicology, Toxicology and Industrial Health, 1983-2005
Section Editor, Aquatic Toxicology, Journal of Environmental Pathology, Toxicology and Oncology, 1983-2005
Editor (one of several), Journal of Clean Technology and Environmental Sciences, 1990-96
Editorial Board, Aquatic Toxicology, 1989-2005
Advisory Board, Environmental Professional (currently Environmental Practice) 1988-2002
Editorial Board, Hydrobiologia, 1979-2002
Editorial Board, Environmental Toxicology and Water Quality, 1987-95
Editorial Board, Ecotoxicology, 1991-2005
Editorial Board, Issues in Environmental Science and Technology, 1992-2002
Editorial Board, Ecological Engineering, 1992-95
Editorial Board, Speculations in Science and Technology, 1989-93
Editorial Board, Ecofables/Ecoscience, 1997-99
Board Member, Editorial Advisory Board, Lewis Publishers, Inc., 1986-94
Board of Advisors, Journal of Aquatic Ecosystem Health and Management Society, 1991-present
Consulting Editor, Journal of Aquatic Ecosystem Stress and Recovery, 1997-2005
Board of Reviewers, Journal of Protozoology, 1988-91
Regional Cooperating Editor, Current Practices in Environmental Science & Engineering, 1983-90
American Water Resources Association—Editorial Board, Water Resources Bulletin, 1975-81
Associate Editor, Water Resources Bulletin, 1985-88
Associate Editor, Ecosystem Health and Medicine, 1993-2005
International Editor, Journal of Environmental Sciences China, 1995-present
Board of Editors, Ecosystem Health, 1995-2002
Editorial Board, Sustainable Communities Review, 1997-2005
Advisory Board, Journal of Frontier Sciences, 1998-2005
Editorial Board, The International Journal of Sustainable Development and World Ecology, 1998-present
Editor, Ethics in Science and Environmental Politics, 2000-2005
Contributing Editor, Common Ground, 1999-2005
Advisor, Asian Journal of Experimental Sciences, 2004-present

Representative Keynote Addresses and Visiting Scholar Activities Since 1980:

Keynote Address, Third International Congress on Industrial Wastewater and Wastes, Stockholm, Sweden, February 1980
Keynote Address, Warmwater Streams Symposium, American Fisheries Society, March 1980
Shared Keynote Address (with F. Herbert Bormann), XIII Argonne National Laboratory Symposium, "Biological Aspects of Ecosystem Restoration," 1980
Keynote Address, Symposium on Biological Monitoring of Fish, American Fisheries Society, September 1980
Nieuwland Lecturer in Biology, Notre Dame University, 1980
Keynote Address, 2nd Annual Meeting of the Society of Environmental Toxicology and Chemistry, November 1981
Landsdowne Visitor, University of Victoria, British Columbia, Canada, 1981
Past President's Address, Annual Meeting of the American Microscopical Society, December 1981

Keynote Address, 43rd Annual Meeting, Association of Southeastern Biologists, April 1982

Keynote Address, Symposium on Reclamation and the Phosphate Industry, Tampa, Florida, February 1983

Keynote Address, Symposium on Biological Monitoring, International Association of Water Pollution Research and Control, Cardiff, Wales, September 1984

Morrison Lecture, International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, December 1984

"Using Endangered Ecosystems to Preserve Rare, Endangered, and Threatened Species" Seminar, National Communications Council, March 1985

Keynote Address, Symposium on Persistent Toxic Substances and the Health of Aquatic Communities, sponsored by the International Joint Commission on the Great Lakes and the American Society for Limnology and Oceanography, Minneapolis, Minnesota, June 1985

Keynote Address, Symposium on Wetlands and Water Management on Mined Lands, Pennsylvania State University, October 1985

Keynote Address, "Why Isn't There More Integrated Resource Management?" Ohio River Basin Consortium for Research and Education, Cincinnati, Ohio, November 1985

Keynote Speaker, Natural Resources Leaders Seminar, Charleston, South Carolina, Department of the Army, Natural Resource Management Branch, December 1985

Keynote Address, West Chester University, Science/Technology Lecture Series, 1986

Keynote Address, Symposium "Aquatic Field Testing: Experimental Mesocosms and Field Techniques," Duluth, Minnesota, 1987

Keynote Address, Minerals and Management Services Gulf of Mexico OCS Region, 8th Annual Information Transfer Meeting, New Orleans, Louisiana, 1987

Keynote Address, First International Conference on Environmental Bioassay Techniques and Their Application, University of Lancaster, England, 1988

Keynote Address, Section on Biological Health of Streams, 50th Midwest Fish and Wildlife Conference, Columbus, Ohio, 1988

Keynote Address, Symposium on Recovery of Lotic Communities and Ecosystems Following Disturbance: Theory and Application, USEPA, Duluth, Minnesota, 1988

Wallace Lecturer in Conservation Biology, University of Louisville, Kentucky, 1988

Distinguished Ecologist Lecture Series, Bowling Green State University, Ohio, 1988

Lead Speaker, Initiation of University Program in Environmental Systems, University of Kentucky, February 1989

Brunch Speaker, 14th Annual Colorado Water Workshop, Gunnison, Colorado, July 1989

One of the Keynote Speakers, Workshop on Restoration Ecology, International Resources Group, Yale School of Forestry, 1989

Banquet Speaker, Virginia's Endangered Species Symposium, U.S. Department of Game and Inland Fisheries, 1989

Principal Speaker, Symposium "Tropical Deforestation: Global Effects," Sweet Briar College, 1989

Banquet Speaker, International Symposium on Water Quality, Colorado State University, 1989

Visiting Scholar Program, Penn State University, 1989 Opening Address, Restoring Biodiversity in the Southern Appalachians: A Strategy for Survival, University of North Carolina at Asheville, 1989

Silvey Lecture, University of North Texas, 1989

Opening Address, Integrated Environmental Management, University of South Carolina at Aiken, 1989

All Academy Lecture, 99th Annual Meeting of the Ohio Academy of Science, April 1990

Lead Speaker, Aquatic Ecosystems Section, Canadian Water Resources Association Conference, Penticton, British Columbia, May 1990

Keynote Address, International Symposium on Aquatic Ecosystem Health, Waterloo, Ontario, July 1990

Banquet Address, Ohio River Basin Consortium for Research and Education (ORBCRE), December 1990

Keynote Address, Engineering Foundation Conference on Urban Runoff, Mount Crested Butte, Colorado, August 1991

Keynote Address, Workshop: Principles of Reconstruction for Fragmented Ecosystems, Tammin, Australia, October 1991

Banquet Address, Phi Sigma Society, Blacksburg, March 1992

Keynote Address, Academic Excellence Conference, Virginia Tech, February 1992

Keynote Address, Second European Conference on Ecotoxicology, Amsterdam, The Netherlands, May 1992

Keynote Address, Opening of the Exhibit "Why Waste a Good Planet," Virginia Museum of Natural History, May 1992

Distinguished Ecologist Lecture, North Carolina State University, September 1992

Keynote Address, Center for Talented Youth, The Johns Hopkins University, November 1992

Keynote Address, Annual Meeting of the Society for Environmental Toxicology and Chemistry, Cincinnati, Ohio, November 1992

Keynote Address, International Symposium on Land Reclamation: Advances in Research and Technology, Nashville, Tennessee, December 1992
Keynote Address, 3rd International Conference: Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, Blacksburg, Virginia, May 1993
Keynote Address, Annual Meeting of the Association of Southeastern Biologists, Richmond, Virginia, May 1993

Keynote Address, Annual Meeting of Carolinas Society of Environmental Toxicology and Chemistry, Duke University, May 1994
Keynote Address, Symposium on Sustaining the Ecological Integrity of Large Floodplain Rivers, La Crosse, Wisconsin, July 1994
Keynote Address, Workshop on Mid-Atlantic Highlands, Mountain Lake, Virginia, September 1994
The Dean's Lecture Series, Virginia Polytechnic Institute and State University, October 20, 1994
Keynote Address, Individual Rights vs the Rights of Future Generations: Ecological Resource Distribution Over Large Temporal and Spatial Scales, Symposium on An Aging Population, An Aging Planet, and a Sustainable Future, University of North Texas, Denton, February 1995
Keynote Address, Design with Water: A Symposium on Design, Planning & Restoration of Land Water Interface, VA Tech, March 1995
Keynote Address, Mid-Atlantic Region Workshop for the National Environmental Monitoring and Research Framework, University of Maryland, April 1996
Keynote Address, 10th Annual Virginia Sustainable Agriculture Conference, Nelson County, Virginia, November 1996
Luncheon Address, Virginia Phi Beta Kappa Meeting, February 1997
Convocation Address, Roanoke College, April 3, 1997
Banquet Address, Society of Sigma Xi, April 17, 1997
Regional High School Lecture, Society of Sigma Xi, April 17, 1997
Plenary Session Address, 5th International Conference on Ecosystem Health, Aquatic Ecosystem Health and Management Society, Guadalajara, Mexico, October 26, 1997
Keynote Address, Central Appalachian Ecological Integrity Conference, Elkins, West Virginia, June 27, 1998
Keynote Address (by videotape), Annual Meeting, Aquatic Ecosystem Health and Management Society, Dublin, Ireland, August 1998
Keynote Address (by videotape), First Asian Conference on Ecotoxicology and Environmental Safety, Wuhan, China, September 1998
Convocation Address, Roanoke College, March 1999
Invited Plenary Session Address, International Symposium on The Future of the Universe and the Future of Our Civilization; United Nations Educational, Scientific and Cultural Organization (UNESCO), International Council of Scientific Unions in conjunction with the World Science Conference, Budapest, Hungary, July 1999
Keynote Address, 12th Annual Conference of Concerned Philosophers for Peace, Radford University, October 1999
Plenary Lecturer, 6th Brazilian Meeting of Ecotoxicology and SETAC-Latin America 3rd Meeting, Sao Carlos, Brazil, September 2000
Keynote Address, Virginia Water Research Symposium '2000, Advances in Water and Land Monitoring Technologies and Research for the Management of Water Resources, Roanoke, VA, November 2000

After the September 1998 keynote address, I decided to call a halt to keynote addresses. Two major factors influenced this decision: (1) my increased sensitivity to second-hand cigarette smoke, which causes asthma attacks and (2) dramatically decreased civility in air and automobile travel. This curtailment of keynote addresses provided more time for Jean and me to enjoy the outdoors and for reading, writing manuscripts, and correspondence when indoors.

On June 19, 2001, it became clear that I could no longer care for Jean (Alzheimer's), and she entered a health care center. I ceased travel to be with her while she could still recognize me.

Miscellaneous:

Honors Examiner in Zoology, Swarthmore College, 1959, 1965
Visiting Lecturer, Junto Adult School, Philadelphia, Pennsylvania, 1964
Consultant, Water Pollution Control Traineeship Program, North Texas State University, 1968
Consultant, Research and Training Programs of the Limnology Department, Academy of Natural Sciences
Committee on Water, Subcommittee on Saline Water Bioassays, American Society for Testing and Materials
Ecology Committee, Water Pollution Control Federation

Scientific Advisor, Congressional Committee on Environmental Quality
Professional Fisheries Scientist Certification by American Fisheries Society
National Academy of Sciences Panel on Freshwater Aquatic Life and Wildlife
National Academy of Sciences Committee on Human Rights, 1991-93
International Biological Program (international scientific areas study)
Member, Technical Advisory Committee, Virginia Chapter for Coal and Energy Research, 1978-95
75th Anniversary Committee, University of Michigan Biological Station, 1981-83

Chief Rapporteur, Symposium on Effects of Oil Refineries on the Environment, University Lauvanne,
August, 1981; Sponsored by International Union of Pure and Applied Chemistry and Conservation Air
and Water Europe

Curriculum Committee, Rocky Mountain Biological Laboratory, 1986

Water Committee, Rocky Mountain Biological Laboratory, 1984-94

Chair, Science Advisory Board, Rocky Mountain Biological Laboratory, 1986

Chair, Environmental Affairs Committee, Rocky Mountain Biological Laboratory, 1986

External Examiner, Australian Research Grants Committee, 1987

Host, Colorado Wildlife Association, 1988

Board Member, Society for Ecological Restoration and Management, 1988-2000

Western Virginia Regional Science Fair, Judge, 1989, 1990

Founding Board of Directors, Milestone Learning Center, Highlands, North Carolina, 1997-99

Member, Advisory Panel, "How on Earth: The Challenge of Nature," television series, 2003-present

Biographical sketch at <http://www.carins.narod.ru>

Grants:

Although most faculty members list each grant on their curriculum vitae, I have never done so since the money is merely the means to an end—research and publication. The publication listing indicates that the necessary resources, including money, were obtained. In lieu of a detailed list, I offer the following information. My salary from 1948 to 1966 came entirely from outside grants and contracts. During this period, I was fortunate to have Ruth Patrick as a mentor—no one could have wished for more. Now well past the customary retirement age for scientists, she is still acquiring substantial funding. Grant funding for me has been continuous from 1948 to the present, although my salary has not been based on outside funding since 1966. Thirty-seven years of grants and contracts would cover many pages, and the use of this information is not clear to me. I tried to determine the total sum of all the grants and contracts on which I was principal investigator or co-principal investigator, but I lost interest when the list reached \$10 million and was far from finished. The peak year was 1978 at \$1.78 million in active grants and contracts. This total was the culmination of the period of large interdisciplinary grants. Obtaining this much money was beneficial for the institution and many colleagues and graduate students, but not for me professionally. The largest grant I ever had (approximately \$1 million) benefited me professionally very little (I was third author on a single small paper), although others benefited greatly. My best publication (personal opinion) was produced on a very small grant.

Graduate Degrees
Chaired or Co-Chaired

1968

Sparks, R. E. M.S. Some Effects of Neutral Mixture of Calcium Oxide and Sulfuric Acid on Channel Catfish Ictalurus punctatus (Rafinesque)

1970

Dickson, K. L. Ph.D. Development and Evaluation of Methodology for the Instream Assessment of the Effects of Water Pollution Upon Macroinvertebrate Organisms

1971

Lorton, E. U. M.S. The Effects of Thermal Stress on Protozoan Community Structure

Sparks, R. E. Ph.D. Using the Respiratory and Cardiac Responses of Bluegill Sunfish (Lepomis macrochirus) to Monitor Zinc Concentrations in Water (Sigma Xi Research Award at Ph.D. level)

Waller, W. T. Ph.D. The Use of Fish Movement Patterns to Monitor Zinc Continuously in Water (Sigma Xi Research Award at Ph.D. level)

1972

Lanza, G. R. Ph.D. Effects of Thermal Stress on Microorganisms

Ruthven, J. A. Ph.D. The Response of Freshwater Protozoan Communities to Concentrations of Various Toxicants, Particularly the Heavy Metals Zinc and Copper

Yongue, W. H., Jr. Ph.D. The Structure of Fresh-water Protozoan Communities

1973

Crossman, J. S. Ph.D. Recovery and Restoration of Damaged Ecosystems

Hales, V. M. M.S. Biological and Chemical Monitoring of Three Streams in the Area of Blacksburg, Virginia (Co-Chair E. F. Benfield)

Herricks, E. E. Ph.D. The Recovery of Stream Macrobenthic Communities from the Effects of Acid Mine Drainage

Morgan, E. Ph.D. The Effects of Stress on Fish Behavior

Sullivan, G. M.S. Acute Bioassays for Assessing the Toxicity of Six Heavy Metals and Factors Affecting Zinc Toxicity to the Rotifer, Philodina (near acuticornis) (Co-Chair A. L. Buikema, Jr.)

1974

Camp, F. A. Ph.D. The Application of Algal Growth Potential Techniques to Surfactant and Zinc Toxicity Studies (Co-Chair A. C. Hendricks)

Dolan, J. M., III. Ph.D. Comparative Studies of the Toxic Effects of Three Surfactants on a Fish (Lepomis macrochirus Rafinesque) and a Snail (Goniobasis Lea sp.)

Hocutt, C. Ph.D. The Effects of Celanese Inc., Narrows, Virginia, on Chemical and Biological Water Quality in the New River (Co-Chair K. L. Dickson)

Smrcek, J. C. Ph.D. The Effects of Various Tertiary Treatment Nutrient Removal Schemes Upon the Productivity of Autotrophic (Periphyton) Communities in Model Laboratory Stream Ecosystems

1975

- Gregg, B. C. Ph.D. Effects of Chlorine and Heat on Selected Stream Invertebrates (Co-Chair E. F. Benfield)
- Maciorowski, A. F. Ph.D. Heavy Metal Toxicity to Aquatic Insects (Co-Chair E. F. Benfield)
- Prather, I. M.S. Computer Interfacing with Biological Systems
- Slocomb, J. M.S. Laser Holography as a Pollution Monitor (Co-Chair K. L. Dickson)
- Stauffer, J. Ph.D. The Distribution of Fish in Relation to Thermal Outfalls (Co-Chair K. L. Dickson)
- Wrenn, W. B. Ph.D. Remote Monitoring of Fish in a Thermally Enriched Zone (Co-Chair K. L. Dickson)

1976

- Lee, D. R. Ph.D. Development of an Invertebrate Bioassay to Screen Petroleum Refinery Effluents Discharged into Freshwater (Co-Chair A. L. Buikema, Jr.)
- Messenger, D. U. M.S. Variability in Sensitivity in Invertebrates to Various Toxicants
- See, C. Ph.D. Effects of Heavy Metals on the Behavior of the Planarian Dugesia tigrina (Co-Chair A. L. Buikema, Jr.)
- Trotter, D. M. Ph.D. The Development of an Algal Bioassay Procedure using Stigeoclonium subsecundum and the Demonstration of the Effect of Intermittent Chlorination on an Attached Filamentous Alga (Co-Chair A. C. Hendricks)
- Wright, J. R., Jr. Ph.D. Chemical Limnology, Algal Growth Potential, and Nutrient Limitation Factors of the Upper New River, Virginia, and Predictions Concerning Trophic Status for the Proposed Blue Ridge Reservoirs (Co-Chair E. F. Benfield)

1977

- Clark, J. M.S. Evaluation of Methods to Estimate Aufwuchs Biomass (Co-Chair K. L. Dickson)
- Klarberg, D. P. Ph.D. Investigations of the Macrobenthos and Physiochemistry of the Upper New River Basin
- Larrick, S. R. M.S. Behavioral Avoidance by Fish of Residual Chlorine in Power Plant Discharges (Co-Chair D. S. Cherry) (Sigma Xi Research Award at M.S. level, 1978)
- McGinniss, M. M.S. Interactions of Acute Thermal Shock and Simulated Effluents to Daphnia pulex (Co-Chair A. L. Buikema, Jr.)
- Paul, R. W. Ph.D. Leaf Processing and the Effects of Thermal Perturbation on Leaf Degradation in the New River, Virginia (Co-Chair E. F. Benfield)
- Rodgers, J. H., Jr. Ph.D. Aufwuchs Communities of Lotic Systems: Nontaxonomic Structure and Function (Co-Chair K. L. Dickson)
- van der Schalie, W. Ph.D. Use of Minicomputers in Biological Monitoring (National Science Foundation Predoctoral Fellowship, 1974)

1978

- King, C. L. M.S. The Development of a System using the Ventilatory Activity of the Fathead Minnow Pimephales promelas to Detect and Predict the Presence of Toxicants (Co-Chair K. L. Dickson)

1979

- Giattina, J. D. M.S. Response of Fish to Chlorinated Effluents under Field and Laboratory Conditions as Determined by Behavioral and Electrophoretic Procedures (Co-Chair D. S. Cherry)
- Honig, R. A. M.S. Effects of a Simulated Refinery Effluent on Periphyton Communities in Laboratory Streams (Co-Chair A. L. Buikema, Jr.)
- Kuhn, D. Ph.D. A Biological Characterization of Environmental Conditions (Sigma Xi Research Award at Ph.D. level)
- Leslie, M. M.S. The Use of Biotic Value Allocation in the Assessment of Heated Discharges
- Lubinski, K. S. Ph.D. Monitoring Bluegill Swimming Behavior and the Effects of Sublethal Ammonium Gradients
- Plafkin, J. Ph.D. The Colonization of Artificial Islands by Protozoa in Differing Habitats and Systems (Sigma Xi Research Award at Ph.D. level, 1980)

1980

- Boatin, H., Jr. Ph.D. Factors Affecting the Endogenous Regulation of Fresh-water Protozoan Communities (Co-Chair W. H. Yongue, Jr.) (Presidential Award for Excellence in Science and Mathematics Teaching, 1990)
- Clark, J. R. Ph.D. Effects of Selected Pollutants on Grazer Utilization of Aufwuchs (Co-Chair D. S. Cherry)

1981

- Abbott, T. Ph.D. The Role of Macrobenthos Drifts in the Energetics of Rainbow Trout (Co-Chair A. L. Buikema, Jr.)
- Henebry, M. S. Ph.D. Protozoan Communities, Macrophyte Vegetation and Trophic Status of Northern Michigan Wetland Lakes (Co-Chair W. H. Yongue, Jr.) (Phi Sigma Research Award at Ph.D. level)

1982

- Hart, K. M.S. Effects of Toxicants upon Microbial Colonization Processes
- Lechleitner, R. M.S. The Resistance of Three Aquatic Insect Detritivores to Fly Ash Constituents (Co-Chair D. S. Cherry)

1984

- Doane, T. R. Ph.D. Comparison of Biomonitoring Techniques for Evaluating Effects of Jet Fuel on Bluegill Sunfish (Lepomis macrochirus) (Co-Chair A. L. Buikema, Jr.)
- Peters, G. T. M.S. Response of Isonychia bicolor to Alkaline pH (Co-Chair D. S. Cherry)
- Pratt, J. R. Ph.D. Export of Species from Sources of Differing Maturity and Complexity (Cunningham Research Fellowship, 1983)

1985

- Belanger, S. E. Ph.D. Functional and Pathological Responses of Selected Aquatic Organisms to Chrysotile Asbestos (Co-Chair D. S. Cherry) (Cunningham Research Fellowship, 1984)
- Hartwell, S. I. Ph.D. Validation of Laboratory Versus Field Avoidance Behavior of Schooling Fathead Minnows to Heavy Metal Blends Relative to Acute Toxicity During Long Term Exposure (Co-Chair D. S. Cherry)
- Stewart, P. M. Ph.D. Diatom and Protozoan Community Analysis and Colonization on Artificial Substrates in Lentic Habitats

1986

Doherty, F. G. Ph.D. Aquatic Ecology (Co-Chair D. S. Cherry) (Cunningham Research Fellowship, 1985)

Farris, J. Ph.D. Assimilative Capacity (Co-Chair D. S. Cherry)

1987

Genter, R. B. Ph.D. Species Interactions in Microbial Communities

McCormick, P. V. M.S. Patterns of Microbial Community Development in Isolated Aquatic Systems (Sigma Xi Research Award at M.S. level, 1988)

1988

Clements, W. H. Ph.D. Community Responses of Aquatic Macroinvertebrates to Heavy Metals in Laboratory and Outdoor Experimental Streams (Co-Chair D. S. Cherry) (Cunningham Research Fellowship, 1987)

Pontasch, K. W. Ph.D. Multispecies Toxicity Tests Using Indigenous Organisms: Predicting the Effects of Hazardous Materials in Streams (Sigma Xi Research Award at Ph.D. level, 1989)

1989

Orvos, D. Ph.D. Environmental Risk Assessment of Genetically-Engineered Microorganisms (Sigma Xi Research Award at Ph.D. level, 1990; SETAC/Procter & Gamble Pre-Doctoral Fellowship, 1987; Cunningham Research Fellowship, 1988)

1990

Comeaux, J. M.S. Transfer of Genetic Information from GEMs to Indigenous Organisms

Rifici, L. M. M.S. Investigation into Three Potential Modifying Factors in Larval Fathead Minnow (Pimephales promelas) Growth and Survival (Co-Chair D. S. Cherry)

Scanferlato, V. S. Ph.D. Environmental Risk Assessment for Toxic Chemicals and Genetically-Engineered Microorganisms: A Microcosm Approach (Sigma Xi Research Award at Ph.D. level, 1991)

1991

Atkinson, R. Ph.D. Rehabilitation of Damaged Ecosystems (Outstanding Performance as a Graduate Teaching Assistant, 1989; Maly Research Fellowship, 1990)

Palmer, S. M.S. Application of Molecular Biology Techniques of the Assessment of Microbial Community Responses to Environmental Perturbations (Phi Sigma National Award at the M.S. level, 1992)

1993

Hill, S. M.S. Evaluation of Seed and Seedling Response to Aid Revegetation of Hazardous Chemical Waste Sites

Arnegard, M. M.S. Functional Toxicity Tests in Microcosms (Fulbright Fellowship, 1989-1990; Sigma Xi Research Award at M.S. level, 1995)

1994

Dobbs, M. P. Ph.D. Ecotoxicology (Co-chair D. S. Cherry)

Holl, K. Ph.D. Restoration Ecology (National Science Foundation Predoctoral Fellowship, 1990; Best Paper of the Year Award, Environmental Conservation, 1991; Emily Stuart YMCA Award for Leadership on Environmental Problems, 1992; Phi Kappa Phi, 1992; Sigma Xi Research Award at Ph.D. level, 1995)

Sabre, M. M.S. Restoration of Disturbed Ecosystems Using Wildflowers (Phi Sigma Award at the M.S. level, 1996)

1995

Jones, D. M.S. Macroinvertebrate Richness and Abundance of Accidental Wetlands on Surface Mines

1996

Comeaux J. Ph.D. Effects of Copper on Benthic Communities in Artificial Microcosms (Presidential Fellowship, 1990)

1997

Heckman, J. Ph.D. Restoring Functional Attributes of Damaged Ecosystems (Cunningham Fellow, Three-Year Scholarship, 1993-1996; Phi Sigma Research Award at Ph.D. level, March 1997; Sigma Xi Research Award at Ph.D. level, 1998)

Post-Doctoral Fellows and Research Associates

E. Fred Benfield
Dennis T. Burton
S. K. Case*
Donald S. Cherry
J. K. T. Eu*
J. M. Fournier*
H. Fujii*
David Gruber

P. F. Lai*
Kenneth W. Thompson
G. F. Westlake
J. R. Pratt
Kay H. Austin
David R. Orvos
Paul V. McCormick
Robert B. Atkinson

*On NSF grant on which S. P. Almeida was co-principal investigator

Sabbaticals

Rodger H. Green, University of Western Ontario
Roger L. Kaesler, University of Kansas
Rex L. Lowe, Bowling Green State University
Shen Yun-fen, National Academy of Sciences, People's Republic of China
Jin Hongjun, Nanjing University, People's Republic of China

Journals in Which I Have Published

Academy of Natural Sciences
Acta Scientia Circumstantiae
Advances in Water Pollution Research
American Association for the Advancement of Science
American Chemical Society
American Malacological Bulletin
American Midland Naturalist
American Naturalist
American Philosophical Society Yearbook
Annals of Earth
Applied and Environmental Microbiology
Aquatic Ecology Newsletter
Aquatic Toxicology
Archiv fuer Hydrobiologie
Archiv fuer Protistenkunde
Archives of Environmental Contamination and Toxicology
Archives of Microbiology
Asian Journal of Experimental Sciences
Association of Systematic Collections
Association of the Southeastern Biologists Bulletin
Aware
Biodiversity Conservation
Biologist
Biometrics
BioScience
Boston College Environmental Affairs and Law Review
Bulletin of Environmental Contamination and Toxicology
Bulletin of Ecological Society of America
Bulletin Torrey Botanical Club
Canadian Journal of Fisheries and Aquatic Sciences
CHEM TECH
Chesapeake Scientist
Chinese Journal of Oceanography and Limnology
Comments on Toxicology
Common Ground
Computer Design
Conservation Biology
Context
Convergence
Corporate Environmental Strategy
Current Practices in Environmental Science and Engineering
Ecological Applications
Ecological Engineering
Ecological Risk Assessment
Ecosystem Health
Ecotoxicology
Ecotoxicology and Environmental Safety
Empiricist
Environment International
Environmental Auditor
Environmental Health
Environmental Health Perspectives
Environmental Management
Environmental Management and Health
Environmental Monitoring and Assessment
Environmental Pollution
Environmental Practice
Environmental Professional

Environmental Science and Technology
Environmental Toxicology and Chemistry
EPA Series
Ethics in Science and Environmental Politics
Federal Water Quality Control Agency
Fire Engineering
Fisheries
Forum
Freshwater Biology
Frontiers
Global Village
Globe
Governor's Conference on Thermal Pollution
Horticultural Technology
Hydrobiologia
Interdisciplinary Science Reviews
Industrial Wastes
Industrial Water and Engineering
Integrated Environmental Assessment and Management
International Journal of Environmental Studies
International Journal of Sustainable Development and World Ecology
Journal of the American Water Works Association
Journal of Anti-Aging Medicine
Journal of Applied Photography and Engineering
Journal of Applied Phycology
Journal of Aquatic Ecosystem Health
Journal of Aquatic Ecosystem Health and Management
Journal of Clean Technology and Environmental Sciences
Journal of Cosmology
Journal Environmental Pathology Toxicology and Oncology
Journal of Environmental Sciences (China)
Journal of Fish Biology
Journal of Freshwater Ecology
Journal of Interdisciplinary Cycle Research
Journal of Protozoology
Journal of Pure and Applied Chemistry
Journal of Social, Political and Economic Studies
Journal of Testing and Evaluation
Journal of Water, Air, and Soil Pollution
Journal of the Elisha Mitchell Scientific Society
Journal of the Fisheries Research Board of Canada
Journal of the Hydraulic Division of the American Society of Chemical Engineering
Journal of the Water Pollution Control Federation
Letters in Applied Microbiology
Limnology and Oceanography
Mankind Quarterly
Microbial Ecology
Minerals and the Environment
Mosquito News
National Academy of Sciences Press
Natulae Naturae, Academy of Natural Sciences of Philadelphia
Naturwissenschaften
Nautilus
Oikos
ORSANCO
Philippine Journal of Biology
Physics and Biology
Polish Archives of Hydrobiologie
Politics and the Life Sciences
Population and Environment
Proceedings of the Academy of Natural Sciences

Proceedings of the American Fisheries Society
Proceedings of the American Philosophical Society
Proceedings of the Fourth Annual Symposium of Industrial Waste Conference
Proceedings of the National Academy of Sciences, People's Republic of China
Proceedings of the Second Aquatic Toxicology Workshop
Proceedings of the U.S. Office of Education
Process Design in Water Pollution Control
Progress in Environmental Science and Technology
Progress in Protozoology
Progress in Water Technology
Progressive Fish-Culturist
Purdue University Engineering Bulletin
Quality Assurance
Regulatory Toxicology and Pharmacology
Renewable Resources Journal
Research and Development
Restoration Ecology
Restoration and Management Notes
Reviews of Environmental Contamination and Toxicology
Revista de la Sociedad Mexicana de Historia Natural
Revista de Biología
Science and Society
Science of the Total Environment
Scientist and Citizen
The Social Contract
Society of Photo-Optical and Instrumentation Engineering
Speculations in Science and Technology
Standard Methods
Standardization News
Sustain
Sustainable Communities Review
Toxicity Assessment
Toxicology and Industrial Health
Transactions of the American Fisheries Society
Transactions of the American Microscopical Society
Transactions of the Kansas Academy of Sciences
Transactions of the Northeastern Wildlife Conference
University of Kansas Science Bulletin
University of Massachusetts Technology Guidance Center Bulletin
U.S. Army Corps of Engineers
U.S. Department of Agriculture
U.S. Public Health Service
Vanderbilt University Press
Verh. Internat. Verein. Limnol
Virginia Cooperative Extension Service
Virginia Issues and Answers
Virginia Journal of Science
Virginia Mining Journal
Virginia Tech Magazine
Virginia Tech Research Magazine
Water (Australia)
Water Air and Soil Pollution
Water Quality Bulletin
Water Research
Water Resources Bulletin
Water Resources Research Center Bulletin
Water Science and Technology
Water Spectrum
Wetlands
Wetlands Ecology and Management

TOTAL ACADEMIC PUBLICATIONS

Published	In press	Submitted	
65	0	0	Books and Monographs
28	0	0	Bulletins
379	2	0	Chapters in Books
715	0	1	Scientific Articles*
310	0	0	Abstracts Only
142	0	0	Editorials, Book Reviews, and Congressional Testimony
110	0	3	Electronic Publications
1749	2	4	TOTAL = 1755

*Scientific articles appearing in 179 different journals

Sole Author and/or Editor

Books	Bulletins	Chapters	Journal Articles	Abstracts	Editorials	Electronic
19	1	215	324	28	123	109

Senior Author

Books	Bulletins	Chapters	Journal Articles	Abstracts	Editorials	Electronic
27	13	78	138	13	13	1

Other Publications

Books	Bulletins	Chapters	Journal Articles	Abstracts	Editorials
19	14	86	253	269	6

Non-Reviewed Limited Distribution Reports: 298

Science Citation Index

(excluding self citations and those of J. Cairns who was at Cold Spring Harbor)

<u>Year</u>	<u>Number of Citations</u>	<u>Year</u>	<u>Number of Citations</u>
1977	98	1978	101
1979	105	1980	159
1981	147	1982	154
1983	149	1984	131
1985	152	1986	157
1987	145	1988	149
1989	156	1990	153
1991	158	1992	147
1993	128	1994	131
1995	190	1996	189
1997	143	1998	157

Social Sciences Citation Index

<u>Year</u>	<u>Number of Citations</u>	<u>Year</u>	<u>Number of Citations</u>
1976-1980	15	1981-1988	2
1989	6	1990	16
1991	14	1992	6
1993	12	1994	9
1995	12	1996	9
1997	23	1998	32

Theses and Dissertations Chaired or Co-Chaired

M.S.: 25
Ph.D.: 49

PRIMARY RESEARCH AREAS

The following letter of nomination for the Ruth Patrick Sustained Achievement Award 2001 is used here to give a description of my research areas. I am indebted to Professor Rex L. Lowe and the American Society of Limnology and Oceanography for permission to do so.

November 5, 2000

I am extremely pleased to nominate John Cairns, Jr., University Distinguished Professor of Environmental Biology at Virginia Polytechnic Institute and State University for ASLO's 2001 Ruth Patrick Award. I can think of no one who better exemplifies the award criteria "to honor outstanding research by a scientist in the application of basic aquatic science principles to the identification, analysis and/or solution of important environmental problems." Cairns has spent his career developing and applying the best science to environmental problem solving. His accomplishments are diverse, cumulative, and form the basis for many of the ways we approach environmental problems. His influence has been sweeping in several difficult but important areas, representing work over the past 50 years and including books, articles, chapters, and reviews totaling several hundred publications.

Cairns is held in high esteem for many different reasons. In the United States, he is one of the few environmental biologists elected to the National Academy of Sciences for his sustained contributions to environmental protection. Internationally, he is revered for his contributions to ecotoxicology, for his seminal work in ecological restoration, and for his renowned work in protozoology and microbial ecology and their application to environmental problems.

Ecotoxicology. As one of the early practitioners of ecotoxicology, Cairns' work on thermal stress in fishes not only identified heat as a major environmental pollutant but as a stressor that could be detected and avoided by natural fish populations. This work, begun in the 1950s, continued for over 20 years, and had a profound influence on the management of waste heat. At the beginning of the post-World War II era of scientific management, Cairns helped develop and standardize methods for single species testing of toxicants and effluents.

The rigor of modern test methods, including the selection of laboratory tolerant but widely distributed species, began with Cairns' collaboration with Arthur Scheier and other colleagues. The work rapidly progressed from acute bioassays to sublethal testing of such diverse pollutants as sewage, toxic metals, surfactants, and pesticides. Realizing that environmental decision making required real-time data, Cairns and colleagues such as Ken Thompson, Bill van der Schalie, Rip Sparks, Tom Waller, and Dave Gruber developed automated biomonitoring systems based on computer detection and analysis of fish ventilatory behavior. Systems like these continue to be used to monitor and alert managers to potentially adverse ecological effects of high variable waste streams.

By the late 1970s, Cairns realized that preventing environmental problems required more than just single species testing. As the chair of a National Research Council review of chemical testing methods, he determined that multispecies approaches were needed to characterize pollutant effects on emergent community and ecosystem properties. Working closely with numerous colleagues, research approaches on community ecotoxicology led to critical understanding of the effects of pollutants on interspecific interactions, productivity, and community composition. His work was a principal factor in the development of small and large artificial streams for testing trace levels of hazardous materials. By the mid-1980s, the USEPA proposed simulated ecosystem testing for pesticides, based largely on Cairns' work, which stimulated research agendas at USEPA, the US Air Force, and the US Army research centers. Research aimed at understanding the complexity of pollutant effects on multispecies systems continues today, focusing on such diverse test systems as periphyton, macrobenthos, and plankton.

Restoration and Recovery. By the early 1970s, several large-scale ecoaccidents had demonstrated the severe effects of chemicals on the environment. Cairns turned his attention to the restoration and recovery of damaged ecosystems, convening two international conferences to study the complexities of damage and recovery. He coined terminology still in use to describe the kinds of ecological responses to damage – restoration, rehabilitation, enhancement – to differentiate between the kinds of ecosystem recovery, respectively, to original condition, comparable condition, and a completely different ecological system. Clearly, this work was informed by his earliest positions on river survey teams, but his expertise and insight were critical to understanding not only recovery in aquatic ecosystems but in ecosystems of all kinds. By the early 1990s, he was called upon to lead another National Research Council study focusing on the recovery process in aquatic systems.

As part of his work to understand ecological damage and recovery, Cairns drew on his early work on biological integrity. That work formed much of the basis for current research defining ecological integrity on a regional, biogeographical basis. Additionally, Cairns' work on recovery identified critical ecosystem processes as key to recovery strategies; he was among the first to denote these processes as "ecosystem services."

Microbial Ecology. Throughout his career as a research scientist, Cairns paid special attention to his first scientific passion, protozoa. His work with protozoan communities formed the basis of much of his influential body of writing, and many of the details of his ideas were worked out first with these simple, rapidly reproducing communities. Based on his many years of collaboration with Ruth Patrick, he always took care to include algae, especially diatoms, in his research. For example, with S. Almeida, he took the first steps toward automated

identification of diatoms using laser holography. In the mid-1980s, Cairns and colleagues began some of the earliest studies of the effects on genetically engineered microorganisms in the environment.

His earliest publication was a survey of Protozoa in the Conestoga Basin. From there, he progressed to community level studies of protozoa in wide-ranging river surveys, including the Catherwood Foundation expedition to the Peruvian Amazon. He developed, with Bill Yongue, the most widely used artificial substrate for collecting protozoa and other periphyton. This work led to his international recognition as the expert on artificial substrata for collecting all manner of aquatic biota. He performed one of the earliest tests of the MacArthur-Wilson island biogeography models using protozoan colonization of polyurethane foam artificial substrata, working concurrently with Ruth Patrick who had studied diatom colonization of glass slides. This work on artificial substrata became key to developing multispecies toxicity tests and to continued work on biological impact assessment in running waters. The so-called "Cairns school" of studying protozoan communities is internationally recognized, and by the late 1980s colleagues in the People's Republic of China had systematized the method for widespread study of pollution effects in that country's rivers.

In summary, Cairns' research spurred the development of many facets of ecotoxicology as a science, regularized the methods used to study toxic chemicals, effected the systematic study of ecological recovery, and extended the understanding of protozoa and other microbes as models for use in studying complex systems. He set much of the direction of these aspects of environmental science with basic study, applied research, and futuristic thinking, often leading to new models of studying and solving environmental problems. His fundamental work has formed the basis of many fields of study ranging from biological indicators to the basic study of Protozoa in the environment. His work is sweeping, often seminal, and influential. He has typified the engaged scientist ready to think broadly and differently about solving environmental problems.

Addendum. The above kind letter does not mention my more recent work with sustainable use of the planet. In 1948, my mentor Ruth Patrick called the concept "use without abuse" of natural systems. All my previous research was essential to my developing the concept of sustainability. For the last two decades, my attention to this synthesis has steadily increased so that over half my time is spent on it. Two books, Goals and Conditions for a Sustainable World and Eco-Ethics and Sustainability Ethics, summarize this area. The quality of life for our descendants will be markedly affected by the degree to which sustainable use of the planet is implemented. It will also have a dramatic effect upon the survival and well being of the millions of species with which we share the planet.

BOOKS AND MONOGRAPHS

1. Patrick, R., F. A. Aldrich, J. Cairns, Jr., F. Drouet, M. H. Hohn, S. S. Roback, H. Skuja, P. J. Spangler, Y. H. Swabey, and L. A. Whitford. 1966. The Catherwood Foundation Peruvian - Amazon Expedition: Limnological and Systematic Studies. Monographs of the Academy of Natural Sciences, No. 14, Philadelphia, PA. 495 pp.
2. Patrick, R., J. Cairns, Jr. and S. S. Roback. 1967. An Ecosystematic Study of the Fauna and Flora of the Savannah River. Proc. Acad. Nat. Sci. Phila. 118(5):109-407.
3. Cairns, J., Jr., ed. 1971. The Structure and Function of Freshwater Microbial Communities. University Press of Virginia, Charlottesville. 301 pp.
4. Cairns, J., Jr. and K. L. Dickson, ed. 1973. Biological Methods for the Assessment of Water Quality, Spec. Tech. Publ. 528. American Society for Testing and Materials, Philadelphia, PA. 262 pp.
5. Cairns, J., Jr. and K. L. Dickson, ed. 1974. The Environment: Cost, Conflicts, Action. Marcel Dekker, Inc., New York. 156 pp.
6. Cairns, J., Jr., and K. L. Dickson, ed. 1974. Preliminary Environmental Analysis of the Burnsville, Leading Creek, and West Fork Lakes Project. Spec. Publ. U. S. Army Corps of Eng. Three volumes: Vol. I, 800 pp.; Vol. II, 2300 pp.; Vol. III, maps, 49 pp.
7. Cairns, J., Jr., ed. 1977. Aquatic Microbial Communities. Garland Publishing, Inc., New York. 695 pp.
8. Cairns, J., Jr., K. L. Dickson and E. E. Herricks, ed. 1977. Recovery and Restoration of Damaged Ecosystems. University Press of Virginia, Charlottesville. 531 pp.
9. Cairns, J., Jr., K. L. Dickson and G. F. Westlake, ed. 1977. Biological Monitoring of Water and Effluent Quality, Spec. Tech. Publ. 607. American Society for Testing and Materials, Philadelphia, PA. 246 pp.
10. Gloyna, E. F., R. McGinnis, L. Abron-Robinson, P. R. Atkins, M. S. Baran, J. Cairns, Jr., C. W. Cook, H. H. Folk, J. H. Ludwig, M. T. Morgan, J. D. Parkhurst, E. T. Smerdon and G. W. Thomas. 1977. Manpower for Environmental Pollution Control, Vol. V. National Academy Press, Washington, DC. 427 pp.
11. Cairns, J., Jr., K. L. Dickson, and A. Maki, ed. 1978. Estimating the Hazard of Chemical Substances to Aquatic Life, Spec. Tech. Publ. 657. American Society for Testing and Materials, Philadelphia, PA. 278 pp.
12. Dickson, K. L., J. Cairns, Jr. and R. J. Livingston, ed. 1978. Biological Data in Water Pollution Assessment: Quantitative and Statistical Analysis, Spec. Tech. Publ. 652. American Society for Testing and Materials, Philadelphia, PA. 193 pp.
13. Cairns, J., Jr., G. P. Patil and W. E. Waters, ed. 1979. Environmental Biomonitoring, Assessment, Prediction, and Management - Certain Case Studies and Related Quantitative Issues. Statistical Ecology Volume S11. International Co-operative Publishing House, Fairland, MD. 438 pp.
14. Dickson, K. L., J. Cairns, Jr. and A. Maki, ed. 1979. Analyzing the Hazard Evaluation Process. American Fisheries Society, Washington, DC. 159 pp.
15. Buikema, A. L., Jr. and J. Cairns, Jr., ed. 1980. Aquatic Invertebrate Bioassays, Spec. Tech. Publ. 715. American Society for Testing and Materials, Philadelphia, PA. 209 pp.
16. Cairns, J., Jr., ed. 1980. The Recovery Process in Damaged Ecosystems. Ann Arbor Science Publishers, Inc., Ann Arbor, MI. 167 pp.
17. Maki, A. W., K. L. Dickson and J. Cairns, Jr., ed. 1980. Biotransformation and Fate of Chemicals in the Aquatic Environment. American Society for Microbiology, Washington, DC. 150 pp.
18. Cairns, J., Jr., Chairman; M. Alexander, K. W. Cummins, W. T. Edmondson, C. R. Goldman, J. Harte, R. Hartung, A. R. Isensee, R. Levins, J. F. McCormick, T. J. Peterle and J. H. Zar. 1981. Testing for Effects of Chemicals on Ecosystems. National Academy Press, Washington, DC, 103 pp.; Working Papers Prepared as Background for Testing for Effects of Chemicals on Ecosystems, 257 pp.

19. Cairns, J., Jr., ed. 1982. Artificial Substrates. Ann Arbor Science Publishers, Inc., Ann Arbor, MI. 278 pp.
20. Cairns, J., Jr., and collaborators A. L. Buikema, Jr., D. S. Cherry, E. E. Herricks, W. H. van der Schalie, R. Matthews, B. R. Niederlehner and J. H. Rodgers, Jr. 1982. Biological Monitoring. Pergamon Press, London. 150 pp.
21. Dickson, K. L., A. Maki and J. Cairns, Jr., ed. 1982. Modeling the Fate of Chemicals in the Aquatic Environment. Ann Arbor Science Publishers, Inc., Ann Arbor, MI. 413 pp.
22. Cairns, J., Jr. and A. L. Buikema, Jr., ed. 1984. Restoration of Habitats Impacted by Oil Spills. Butterworth Publishers, Woburn, MA. 192 pp.
23. Lynn, W., and nine co-authors including J. Cairns, Jr. 1984. Washington Area Water Supply. National Academy Press, Washington, DC. 824 pp.
24. Cairns, J., Jr., ed. 1985. Multispecies Toxicity Testing. Sponsored by Ecological Society of America and Society for Environmental Toxicology and Chemistry. Pergamon Press, New York. 253 pp.
25. Cairns, J., Jr., ed. 1985. NATO Conference Series I: Ecology, Volume II Ecoaccidents. NATO Scientific Branch, Plenum Press, New York. 164 pp.
26. Cairns, J., Jr., ed. 1986. Community Toxicity Testing, Spec. Tech. Publ. 920. American Society for Testing and Materials, Philadelphia, PA. 350 pp.
27. Cairns, J., Jr. and R. Patrick, ed. 1986. Environmental Regeneration II: Managing Water Resources. Sponsored by the Rene Dubos Foundation, Inc. Published by Praeger Scientific, Philadelphia, PA. 128 pp.
28. Cairns, J., Jr. and T. W. Clark, ed. 1987. Selected Aspects of Exposure to Heavy Metals in the Environment: Monitors, Indicators, and High Risk Groups. National Academy Press, Washington, DC. 135 pp.
29. Cairns, J., Jr., ed. 1988. Rehabilitating Damaged Ecosystems. CRC Press, Boca Raton, FL. Vol. 1, 192 pp., Vol. 2, 222 pp.
30. Cairns, J., Jr., ed. 1989. Biological Monitoring. China Environmental Science Press, Beijing, Peoples Republic of China. 153 pp.
31. Cairns, J., Jr. and J. R. Pratt, ed. 1989. Functional Testing of Aquatic Biota for Estimating Hazards of Chemicals, Spec. Tech. Publ. 988. American Society for Testing and Materials, Philadelphia, PA. 242 pp.
32. Cairns, J., Jr. and P. F. Zweifel, ed. 1989. On Global Warming: Atmospheric Carbon Dioxide and Global Warming. Virginia Polytechnic Institute and State University, Blacksburg, VA.
33. Cairns, J., Jr. (special issue editor). 1991. Pages 185-258 in Environmental Auditor, Vol. 2, No. 4.*
34. Cairns, J., Jr. and T. V. Crawford, ed. 1991. Integrated Environmental Management. Lewis Publishers, Inc., Chelsea, MI. 214 pp.
35. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Hewitt, C. N. 1991. Instrumental Analysis of Pollutants. Elsevier Science Publishers Ltd, Essex. 367 pp.
36. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Jones, K. C. 1991. Organic Contaminants in the Environment. Elsevier Science Publishers Ltd., Essex. 338 pp.
37. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Sturges, W. T. 1991. Pollution of the Arctic Atmosphere. Elsevier Science Publishers Ltd., Essex. 334 pp.
38. Cairns, J., Jr. 1992. The Recovery Process in Damaged Ecosystems. Divyajyoti Prakashan, Jodhpur, India. Reprint of earlier book, 167 pp.

*Not a book or monograph, but edited issue best fits this category of publications.

39. Cairns, J., Jr. 1992. The Structure and Function of Fresh-water Microbial Communities. Divyajyoti Prakashan, Jodhpur, India. Reprint of earlier book, 301 pp.
40. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Hewitt, C. N. 1992. Methods of Environmental Data Analysis. Elsevier Science Publishers, Ltd., Essex. 309 pp.
41. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Radojevic, M. and R. M. Harrison. 1992. Atmospheric Acidity: Sources, Consequences and Abatement. Elsevier Science Publishers, Ltd., Essex. 587 pp.
42. Cairns, J., Jr., B. R. Niederlehner and D. R. Orvos, ed. 1992. Predicting Ecosystem Risk. Princeton Scientific Publishing Co., Inc., Princeton, NJ. Vol. 20 of Advances in Modern Environmental Toxicology. 417 pp.
43. National Research Council. 1992. Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy. Report of the Committee on Restoration of Aquatic Ecosystems, Water Science and Technology Board, Commission on Geosciences, Environment, and Resources. J. Cairns, Jr., Chair; and Committee Members: G. R. Best, P. L. Brezonik, S. R. Carpenter, G. D. Cooke, D. L. Hey, J. A. Kusler, C. L. Schelske, L. Shabman, R. R. Sharitz, S. Sorooshian, R. E. Sparks, J. T. B. Tripp, D. E. Willard, and J. B. Zedler; J. J. Berger, Consultant; Sheila David, Staff Officer. National Academy Press, Washington, DC. 552 pp.
44. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Hewitt, C. N and W. T. Sturges. 1993. Global Atmospheric Chemical Change. Elsevier Science Publishers, Ltd., Essex. 470 pp.
45. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Phillips, D. J. H. and P. S. Rainbow. 1993. Biomonitoring of Trace Aquatic Contaminants. Elsevier Science Publishers, Ltd., Essex. 371 pp.
46. Wallace, B., J. Cairns, Jr. and P. A. Distler. 1993. Environmental Literacy and Beyond, President's Symposium Volume V. Virginia Polytechnic Institute and State University, Blacksburg, VA. 65 pp.
47. Cairns, J., Jr., T. V. Crawford and H. Salwasser. 1994. Implementing Integrated Environmental Management. Virginia Polytechnic Institute and State University, Blacksburg, VA. 137 pp.
48. Eblen, R. A. and W. R. Eblen, ed.; C. Boyer, N. J. Brown, J. Cairns, Jr., V. T. Covello, B. C. Dysart, III, J. P. Keith, L. B. Lave, J. F. Mathis, R. Patrick, J. A. Perkins, G. Piel, C. W. Powers, J. Raymond, J. Salk, R. N. Sampson, J. R. Sheffield, K. E. Simpson, D. Sive, L. Thomas, A. C. Upton and E. H. Zube, Executive Board. 1994. The Encyclopedia of the Environment. Houghton Mifflin Company, Boston, MA. 846 pp.
49. Malone, T., Chairman; J. Cairns, Jr., E. Castle, W. Flowers, J. Gordon, T. Hullar, A. Kelman, V. Lee, D. Lonsdale, D. Nelson, C. Thoroughgood, and H. Vaux. 1994. Sustainable Human Development: A Paradigm for the 21st Century: Challenge and Opportunity for Higher Education. National Association of State Universities and Land-Grant Colleges, Washington, DC. 52 pp.
50. Cairns, J., Jr. 1995. Rehabilitating Damaged Ecosystems, Second Edition. Lewis Publishers, Chelsea, MI. 411 pp.
51. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Hewitt, C. N. 1995. Methods of Environmental Data Analysis. Chapman & Hall, London. 309 pp.
52. Cairns, J., Jr. and B. R. Niederlehner, eds. 1995. Ecological Toxicity Testing: Scale, Complexity, and Relevance. Lewis Publishers, Inc., Chelsea, MI. 222 pp.
53. Hoffman, D. J., B. A. Rattner, G. A. Burton, Jr., and J. Cairns, Jr. 1995. Handbook of Ecotoxicology. Lewis Publishers, Inc., Chelsea, MI. 716 pp.
54. Nierenberg, W. A., Editor-in-Chief; E. O. Wilson, P. H. Raven and I. Karube, Executive Advisory Board; F. A. Bazza, J. Cairns, Jr., M. Gadgil, G. S. Hartshorn, T. T. Kozlowski, H. A. Mooney, G. H. Orians, E. R. Pianka, S. Pimm, M. L. Reaka-Kudla, T. Rosswall, T. W. Schoener, M. Seely, O. Solbrig, S. Ulfstrand, A. Yablokov, Editorial Advisory Board. 1995. Encyclopedia of Environmental Biology. Academic Press, New York. Vol. 1, 767 pp.; Vol. 2, 654 pp.; Vol. 3, 693 pp.

55. Cairns, J., Jr. and R. M. Harrison, Series Editors. Environmental Management Series. Clarke, A. G. 1998. Industrial Air Pollution Monitoring. Chapman & Hall, London. 306 pp.
56. National Research Council (J. Cairns, Jr., Committee Chair). 1999. Japanese edition of Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy. Gihodo Publishing Co., Tokyo. 590 pp.
57. Cairns, J., Jr. (one of 13 editorial board members). 2001. Environment Encyclopedia, 11 volumes. Marshall Cavendish Corp., Tarrytown, NY.
58. Bradshaw, A. D., J. Cairns, Jr., and E. Jeppesan, editorial advisors for M. R. Perrow and A. J. Davy, ed. 2002. The Handbook of Restoration Ecology. Cambridge University Press, Cambridge, UK. 444 pp.
59. Cairns, J., Jr. 2002. Goals and Conditions for a Sustainable World. Ethics in Science and Environmental Politics, Eco-Ethics International Union, Oldendorf/Luhe, Germany. 293 pp.
www.esep.de/journals/esep/esepbooks/CairnsEsepBook.pdf
60. Cairns, Jr., Jr. 2003. Eco-Ethics and Sustainability Ethics, Part 1. Ethics in Science and Environmental Politics, Eco-Ethics International Union, Oldendorf/Luhe, Germany. 154 pp.
www.esep.de/journals/esep/esepbooks/EB2pt1.pdf
61. Hoffman, D. J., B. A. Rattner, G. A. Burton, Jr. and J. Cairns, Jr. 2003. Handbook of Ecotoxicology, Second Edition. Lewis Publishers, CRC Press, Boca Raton, FL. 1290 pp.
62. Cairns, J., Jr. 2004. Eco-Ethics and Sustainability Ethics, Part 2. Ethics in Science and Environmental Politics, Eco-Ethics International Union, Oldendorf/Luhe, Germany. 165 pp. <http://www.int-res.com/journals/esep/esepbooks/EB2Pt2.pdf>
63. Cairns, J., Jr. 2005. My Quest for Sustainable Use of the Planet. <http://www.johncairns.net>
64. Cairns, J., Jr. 2009. The Future Eaters: Metaphors and Aphorisms as Environmental Teaching Tools. <http://www.johncairns.net>

Chapters added to website book *The Future Eaters* since its original posting in 2009

2010 February 24	Better the Devil You Know than the Devil You Don't Know
2010 March 4	'Tis the Gift to be Simple
2010 November 12	A Stitch in Time Saves Nine
2010 November 19	We Never Know the Worth of Water Till the Well is Dry
2011 January 3	England and America are Two Countries Separated by a Common Language
2011 January 5	Prevention is Better Than Cure
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2011 October 6	Tough Decision vs Denial
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2012 July 6	The Consequences of Global Human Dominance
2012 July 17	King Canute and the Universal Laws of Physics, Chemistry, and Biology
2012 October 4	Why Humankind is not Living Sustainably

65. Cairns, J., Jr. 2011. Earth's Biosphere in Peril. <http://www.johncairns.net>.

Chapters added to website book *Earth's Biosphere in Peril* since its original posting in March 2011

—2011 May 22	The Triumph of Ideology in an Increasingly Fact Free World
—2011 May 22	Biospheric Intergenerational Ethics
—2011 May 27	A Worst Case Scenario for Continuing Business as Usual
—2011 May 27	A Covenant for the Biosphere
—2011 August 10	Existential Risks Involving Earth's Biosphere
—2011 August 22	Petition of the Candlemakers Against the Sun
—2011 August 22	Redistribution of Earth's Resources by Global Policy or Laws of Nature?
—2011 September 26	The Biosphere: Humanity's Common Wealth
—2011 October 5	A Social Contract for Preserving and Nurturing the Present Biosphere
—2011 October 10	Biospheric Refugees
2011 November 10	Chaos Theory and Biospheric "Surprises"
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2011 November 10	Eliminating the Biospheric Refugee Crisis
—2011 November 10	Partially Global to Tribal: Will Humankind Be Forced to Make the Transition?
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2011 December 18	Economic Growth and the Biosphere
2011 December 18	Primary Sources of Human Wealth: The Biosphere and Knowledge
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—2012 February 18	The Ultimate Feedback Loop and the Inevitable Tipping Point
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—2012 April 3	Preserving the Present Biosphere Requires Steady State Economics
2012 April 3	The Ninth Threat to the Biosphere: Human Thought Processes
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—2012 June 13	The Loss of Biospheric Resources: Humanity's Ethical Challenge
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2012 August 6	Defining Goals and Conditions for Nurturing the Present Biosphere
2012 August 10	Mutually Assured Destruction (MAD)*: The Biosphere, <i>Homo sapiens</i> , and the Human Economy
2012 August 16	Evolving Toward an Evidence-Based/Ethical Value-Based Society to Nurture Earth's Biosphere
2012 September 17	Critical Thinking, the Common Good, and the New Normal Global Climate
2012 October 5	The Catastrophic Risks of Ignoring the "New Normal" Climate
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2012 November 13	Facing Reality to Preserve the Present Biosphere
2012 December 5	Future Availability of Biospheric Resources: How Will Humans Frame Their World Views?
2012 December 14	Catastrophic Climate Change and the Biosphere
2012 December 20	Deliberately Creating an Alien Planet

— original chapter, not Power Point

BULLETINS

1. Cairns, J., Jr. 1965. Population Dynamics. American Institute of Biological Sciences, Patterns of Life Series, Rand McNally and Company, Chicago, IL. 63 pp.
2. Cairns, J., Jr. and K. L. Dickson, ed. 1972. An Ecosystematic Study of the South River, Virginia. Water Resour. Res. Center Bull. No. 54. Virginia Polytechnic Institute and State University, Blacksburg, VA. 104 pp.
3. Cairns, J., Jr. and G. R. Lanza. 1972. Effects of Heated Waste Waters Upon Some Microorganisms. Water Resour. Res. Center Bull. No. 48. Virginia Polytechnic Institute and State University, Blacksburg, VA. 101 pp.
4. Ritchey, S. J. and J. Cairns, Jr., ed. 1972. The Ecology of Land. Proceedings of the symposium jointly sponsored by the Society of the Sigma Xi and the Center for Environmental Studies. Research Monograph 5, Virginia Polytechnic Institute and State University, Blacksburg, VA. 50 pp.
5. Cairns, J., Jr. and K. L. Dickson, ed. 1973. The Effects of Waste Discharges from Radford Army Ammunition Plant on the New River, Virginia. Water Resour. Res. Center Bull. No. 57. Virginia Polytechnic Institute and State University, Blacksburg, VA. 57 pp.
6. Cairns, J., Jr., J. W. Hall, E. L. Morgan, R. E. Sparks, W. T. Waller, and G. F. Westlake. 1973. The Development of an Automated Biological Monitoring System for Water Quality. Water Resour. Res. Center Bull. No. 59. Virginia Polytechnic Institute and State University, Blacksburg, VA. 50 pp.
7. Crossman, J. S., J. Cairns, Jr., and R. L. Kaesler. 1973. Aquatic Invertebrate Recovery in the Clinch River Following Hazardous Spills and Floods. Water Resour. Res. Center Bull. No. 63. Virginia Polytechnic Institute and State University, Blacksburg, VA. 66 pp.
8. Buikema, A. L., Jr., J. Cairns, Jr., and G. W. Sullivan. 1974. Rotifers as Monitors of Heavy Metal Pollution in Water. Water Resour. Res. Center Bull. No. 71. Virginia Polytechnic Institute and State University, Blacksburg, VA. 74 pp.
9. Herricks, E. E. and J. Cairns, Jr. 1974. Rehabilitation of Streams Receiving Acid Mine Drainage. Water Resour. Res. Center Bull. No. 66. Virginia Polytechnic Institute and State University, Blacksburg, VA. 284 pp.
10. Cairns, J., Jr. (one of twenty-three participants). 1976. Report of a Workshop on the Impact of Thermal Power Plant Cooling Systems on Aquatic Environments. Special Technical Report, Electric Power Research Institute, SR-38. Vol. 1, 119 pp; Vol. 2, 234 pp.
11. Smrchek, J. C., J. Cairns, Jr., K. L. Dickson, P. H. King, C. W. Randall, J. Crowe, D. Huber, and J. W. Olver. 1976. The Effects of Various Tertiary Treatment Nutrient Removal Schemes on Periphyton Communities in Model Laboratory Streams. Water Resour. Res. Center Bull. No. 86. Virginia Polytechnic Institute and State University, Blacksburg, VA. 124 pp.
12. Stauffer, J. R., K. L. Dickson, J. Cairns, Jr., and D. S. Cherry. 1976. The potential and realized influences of temperature on the distribution of fishes in the New River, Glen Lyn, Virginia. Wildl. Monogr. 50:40 pp.
13. Buikema, A. L., Jr., J. Cairns, Jr., P. C. Edmunds, and T. H. Krakauer. 1977. Culturing and ecology studies of the rotifer, Polyarthra vulgaris. Environmental Protection Agency, Ecol. Res. Ser., EPA 600/3-77-051. 54 pp.
14. Buikema, A. L., Jr., C. L. See, and J. Cairns, Jr. 1977. Rotifer Sensitivity to Combinations of Inorganic Water Pollutants. Water Resour. Res. Center Bull. No. 92. Virginia Polytechnic Institute and State University, Blacksburg, VA. 42 pp.
15. Cairns, J., Jr., A. L. Buikema, Jr., A. G. Heath, and B. C. Parker. 1978. Effects of Temperature on Aquatic Organism Sensitivity to Selected Chemicals. Water Resour. Res. Center Bull. No. 106. Virginia Polytechnic Institute and State University, Blacksburg, VA. 88 pp.
16. Gruber, D., J. Cairns, Jr., K. L. Dickson, A. C. Hendricks, M. A. Cavell, J. D. Landers, Jr., W. R. Miller, III, and W. J. Showalter, Jr. 1978. The Construction, Development, and Operation of a Fish Biological Monitoring System. National Technical Information Service, Springfield, VA. Contractor Report ARCSL-CR-78040. 79 pp.

17. Buikema, A. L., Jr., M. J. McGinniss, and J. Cairns, Jr. 1979. Phenolics in aquatic ecosystems – a selected review. Mar. Environ. Res. 2(2):99 pp.
18. Buikema, A. L., Jr., K. Schwaab, and J. Cairns, Jr. 1980. Pollution Assessment: A Training Manual. U. S. Man and the Biosphere, Washington, DC. 15 pp.
19. Cherry, D. S., J. H. Rodgers, Jr., R. L. Graney, and J. Cairns, Jr. 1980. Dynamics and Control of the Asiatic Clam in the New River, Virginia. Virginia Water Resour. Res. Center Bull. No. 123. Virginia Polytechnic Institute and State University, Blacksburg, VA. 72 pp.
20. Cairns, J., Jr., K. W. Thompson, and A. C. Hendricks. 1981. Effects of Fluctuating Sublethal Applications of Heavy Metal Solutions upon the Gill Ventilatory Response of Bluegills (*Lepomis macrochirus*). National Technical Information Service, Springfield, VA. PB81-150 997. 90 pp.
21. Cairns, J., Jr., D. Gruber, and W. R. Miller, III. 1982. Evaluation of an On-Line Biomonitoring System. National Technical Information Service, Springfield, VA. Contractor Report DAAK-11-79-C-0093.
22. Cairns, J., Jr., A. L. Buikema, Jr., and T. R. Doane. 1983. Sublethal Effects of JP-4 on *Lepomis macrochirus*. National Technical Information Service, Springfield, VA. Contractor Report AFOSR-TR-83-0443. 11 pp.
23. Cairns, J., Jr., A. L. Buikema, Jr., and T. R. Doane. 1984. Second Annual Report: Sublethal Effects of JP-4 on Aquatic Organisms and Communities. National Technical Information Service, Springfield, VA. Contractor Report AFOSR-TR-82-0059. 62 pp.
24. Cairns, J., Jr., D. Gruber, W. R. Miller, III, and W. Sydor, Jr. 1984. System Calibration of On-Line Biomonitoring Facility. National Technical Information Service, Springfield, VA. Contractor Report DAAK-11-80-C-0044.
25. Pratt, J. R., J. Cairns, Jr., P. M. Stewart, N. B. Pratt, and B. R. Niederlehner. 1985. Measurement of Recovery in Lakes Following Phosphate Mining. Florida Institute of Phosphate Research, Bartow, FL. 117 pp.
26. Pratt, J. R., P. V. McCormick, K. W. Pontasch, and J. Cairns, Jr. 1987. Evaluating Potential Groundwater Contamination from Contaminated Soils. Virginia Water Resour. Res. Center Bull. No. 155. Virginia Polytechnic Institute and State University, Blacksburg, VA. 30 pp.
27. Cairns, J., Jr., P. V. McCormick, and B. R. Niederlehner. 1991. Indicators of Ecosystem Health. International Joint Commission - United States and Canada. ISBN-895085-29-2. 47 pp.
28. Cairns, J., Jr. and A. L. Kwiram (Co-chairs Group 6). 1992. New Perspectives on Environmental Education and Research. Sigma Xi, The Scientific Research Society, Research Triangle Park, NC. 58 pp.

CHAPTERS IN BOOKS

1. Cairns, J., Jr. 1966. Protozoa. Pages 53-61 in The Catherwood Foundation Peruvian-Amazon Expedition. Academy of Natural Sciences, Philadelphia, PA.
2. Cairns, J., Jr. 1971. Application of aquatic ecological information for water pollution control in the chemical industry. Pages 4-10 in Industrial Process Design for Water Pollution Control, Vol. 3. American Institute of Chemical Engineers.
3. Cairns, J., Jr. 1971. Factors affecting the number of species in freshwater protozoan communities. Pages 219-247 in J. Cairns, Jr., ed. American Microscopic Society Symposium on the Structure and Function of Freshwater Microbial Communities. Virginia Polytechnic Institute and State University, Blacksburg.
4. Cairns, J., Jr. 1972. The impact of pollution on our total environment. Pages 2-11 in Proceedings of Waste Management and Pollution Control. Virginia Cooperative Extension Service, Blacksburg.
5. Cairns, J., Jr. 1972. Rationalization of multiple use of rivers. Pages 421-430 in R. T. Oglesby, C. A. Carlson, and J. A. McCann, ed. River Ecology and the Impact of Man. Academic Press, New York.
6. Cairns, J., Jr. 1972. The response of aquatic communities to thermal pollution and other forms of environmental stress. Pages 829-853 in M. T. Farvar, and J. P. Milton, ed. The Careless Technology: Ecology and International Development. Natural History, New York.
7. Cairns, J., Jr. and G. Lanza. 1972. Pollution controlled changes in algal and protozoan communities. Pages 245-272 in R. Mitchell, ed. Water Pollutional Microbiology. Wiley, Inc., New York.
8. Cairns, J., Jr., K. L. Dickson, and J. S. Crossman. 1972. The response of aquatic communities to spills of hazardous materials. Pages 179-197 in Proceedings of the National Conference on Hazardous Material Spills. Graphics Management Corp., Washington, DC.
9. Dickson, K. L. and J. Cairns, Jr. 1972. Ecological data for water resources management. Pages 1-6 in D. A. Hoffman, ed. Ecological Impact of Water Resources Development. U. S. Department of Interior, Bureau of Reclamation, RE C-ERC-82-17.
10. Cairns, J., Jr. 1973. Ecological management problems caused by heated waste water discharge into the aquatic environment. Pages 55-65 in Freshwater Pollution III: Problems & Control. MSS Information Corp., New York.
11. Cairns, J., Jr. 1973. The energy-ecology confrontation -thermal discharges from steam-electric power plants. Pages 30-35 in C. T. Lange, ed. Pollution. National Association of Biology Teachers.
12. Cairns, J., Jr. 1973. New concepts for managing aquatic life systems. Pages 207-212 in Freshwater Pollution III: Problems & Control. MSS Information Corp., New York.
13. Cairns, J., Jr. 1973. Thermal pollution: A cause for concern. Pages 10-21 in Freshwater Pollution III: Problems & Control. MSS Information Corp., New York.
14. Cairns, J., Jr. and K. L. Dickson. 1973. Biological assessment programs for industry. Pages 271-281 in Environmental Engineers Handbook, Vol. I. Chilton Book Company, Radnor, PA.
15. Cairns, J., Jr. and K. L. Dickson. 1973. Guidelines for developing studies to determine the biological effects of thermal discharges. In J. J. Halvorsen, ed. Water Quality Considerations: Siting and Operating of Nuclear Power Plants. Special Publication, Atomic Industrial Forum, Inc. 23 pp.
16. Cairns, J., Jr., K. L. Dickson, and J. S. Crossman. 1973. The response of aquatic communities to spills of hazardous materials. In Freshwater Pollution I: Bacteriological and Chemical Pollutants. MSS Information Corp., New York. 151 pp.
17. Cairns, J., Jr., K. L. Dickson, and A. C. Hendricks. 1973. Pre- and post-construction surveys. Pages 213-219 in Freshwater Pollution III: Problems & Control. MSS Information Corp., New York.

18. Cairns, J., Jr., K. L. Dickson, and G. Lanza. 1973. Rapid biological monitoring system for determining aquatic community structure in receiving systems. Pages 148-163 in J. Cairns, Jr., and K. L. Dickson, ed. Biological Methods for the Assessment of Water Quality, STP 528. American Society for Testing and Materials, Philadelphia, PA.
19. Cairns, J., Jr., R. E. Sparks, and W. T. Waller. 1973. A rapid in-plant biological monitoring system. Pages 127-147 in J. Cairns, Jr. and K. L. Dickson, ed. Biological Methods for the Assessment of Water Quality, STP 528. American Society for Testing and Materials, Philadelphia, PA.
20. Cairns, J., Jr., R. E. Sparks, and W. T. Waller. 1973. The relationships between continuous biological monitoring and water quality standards for continuous exposure. Pages 383-402 in G. E. Glass, ed. Bioassay Techniques and Environmental Chemistry. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
21. National Technical Advisory Committee on Pesticides in Water Environments (Cairns one of 18 members). 1973. Pesticides in the Aquatic Environment. D. C. Reese, Project Officer; I. W. Dodson, Project Coordinator; V. Ulrich, Senior Editor; D. L. Becker and C. J. Kempter, Project Members. Environmental Protection Agency, Office of Water Programs. 181 pp.
22. Beeton, A. M., J. Cairns, Jr., C. C. Countant, R. Hartung, H. E. Johnson, R. Patrick, L. L. Smith, Jr., and J. B. Sprague. 1974. Fresh-water aquatic life and wildlife. In Water Quality Criteria of 1972. National Academy of Sciences, Washington, DC. 594 pp.
23. Cairns, J., Jr. 1974. Bioassays. Pages 258-270 in Environmental Engineers Handbook, Vol. I. Chilton Book Company, Radnor, PA.
24. Cairns, J., Jr. 1974. Matching heated waste water discharges to environmental assimilative capacity. Pages 81-84 in B. J. Gallager, ed. Energy Production and Thermal Effects. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
25. Cairns, J., Jr. 1974. Protozoans (Protozoa). Pages 1-28 in C. W. Hart, Jr., and S. L. H. Fuller, ed. Pollution Ecology of Freshwater Invertebrates. Academic Press, New York.
26. Cairns, J., Jr. 1974. Zero discharge or non-degrading use of environmental assimilative capacity. Pages 1-31 in Proc. Beak Seminar, Section 5. T. Beak, Inc., Montreal, Canada.
27. Cairns, J., Jr., K. L. Dickson, J. P. Slocomb, S. P. Almeida, J. K. T. Eu, C. Y. C. Liu, and H. F. Smith. 1974. Microcosm pollution monitoring. Pages 223-228 in D. D. Hemphill, ed. Trace Substances in Environmental Health-VII. University of Missouri, Columbia.
28. Cairns, J., Jr., J. W. Hall, E. L. Morgan, R. E. Sparks, W. T. Waller, and G. F. Westlake. 1974. The development of an automated biological monitoring system for water quality management. Pages 43-55 in D. D. Hemphill, ed. Trace Substances in Environmental Health-VII. University of Missouri, Columbia.
29. Cairns, J., Jr., A. C. Heath, and B. C. Parker. 1974. The effects of temperature upon the toxicity of chemicals to aquatic organisms. Pages 1433-1502 in Effects and Methods of Control of Thermal Discharges, Vol. 3. U. S. Government Printing Office Serial No. 93-14, Report to the Congress by the Environmental Protection Agency in Accordance with Section 104(t) of the Federal Water Pollution Control Act Amendments of 1972.
30. Dickson, K. L. and J. Cairns, Jr. 1974. Ecological factors in plant site selection. Pages 723-728 in Environmental Engineers Handbook, Vol. 3. Chilton Book Company, Radnor, PA.
31. Almeida, S. P., J. K. T. Eu, C. Y. C. Liu, J. Cairns, Jr., K. L. Dickson, and J. P. Slocomb. 1975. Identification of diatoms by an optical pattern recognition system for use in water quality monitoring. Pages 156-160 in Proc. 2nd Annual NSF-RANN Trace Contaminants Conference, 1974. Lawrence Berkeley Laboratory, University of California.
32. Cairns, J., Jr. Dated 1974, publ. 1975. Environmental quality indicators for aquatic ecosystems. Pages 48-62 in Proceedings of the Environmental Planning Seminar. Drexel University, Philadelphia, PA.
33. Cairns, J., Jr. 1975. Quality control systems. Pages 588-612 in B. A. Whitten, ed. River Ecology. Blackwell Scientific Publications Ltd., London.

34. Cairns, J., Jr., K. L. Dickson, and G. F. Westlake. 1975. Instrumentation for biological monitoring of industrial wastes. Pages 538-547 in R. J. Krizek, and E. F. Mosonyi, ed. Proc. International Exposition and Seminar on Water Resources Instrumentation. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
35. Cairns, J., Jr. and G. F. Westlake. 1975. Continuous biological monitoring of industrial wastes. Pages 307-313 in Proc. 1974 Conference on Control of Hazardous Materials Spills. American Institute of Chemical Engineers.
36. Cairns, J., Jr., R. L. Metkalf, D. B. Peakal, G. Sprugel, Jr., and G. T. Goodman. Dated 1974, publ. 1975. Environmental toxicology. Chapter 13 in Principles for Evaluating Chemicals in the Environment. National Academy of Sciences, Washington, DC.
37. Hann, R. W., Jr. and J. Cairns, Jr. 1975. Episodic exposures. Pages 263-268 in Principles for Evaluating Chemicals in the Environment. National Academy of Sciences, Washington, DC.
38. Hann, R. W., Jr., M. Alexander, J. Cairns, Jr., and B. H. Ketchum. Dated 1974, publ. 1975. Field studies of ecosystems. Pages 251-262 in Principles for Evaluating Chemicals in the Environment. National Academy of Sciences, Washington, DC.
39. Herricks, E. E. and J. Cairns, Jr. 1975. Stream rehabilitation through control of non-point sources of acid mine drainage. Pages 239-256 in P. M. Ashton, and R. C. Underwood, ed. Non-point Sources of Water Pollution. Water Resources Research Center, Virginia Polytechnic Institute and State University, Blacksburg.
40. Herricks, E. E., J. Cairns, J., and V. O. Shanholtz. Dated 1974, publ. 1975. Preplanning mining operations to reduce the environmental impact of mine drainage on streams. American Water Resources Symposium on Water Resources Related to Mining. 18:1-11.
41. Stauffer, J. R., D. S. Cherry, K. L. Dickson, and J. Cairns, Jr. 1975. Laboratory and field temperature preference and avoidance data of fish related to the establishment of standards. Pages 119-139 in S. B. Saila, ed. Fisheries and Energy Production. Lexington Books, D. C. Heath and Co., Lexington, MA.
42. Almeida, S. P., J. Cairns, Jr., and K. L. Dickson. 1976. The use of matched spatial filters in water pollution monitoring. Page 46 in Optical Processing Conference, Nurnberg, Germany.
43. Almeida, S. P., J. K. T. Eu, J. Cairns, Jr., and K. L. Dickson. 1976. A study of biological specimens using matched spatial filtering methods. Pages 28-30 in Proc. SPSE International Conference on Image Analysis and Evaluation. Toronto, Canada.
44. Almeida, S. P., J. K. T. Eu, P. F. Lai, J. Cairns, Jr., and K. L. Dickson. 1976. An interactive hybrid optical digital processor for matched filtering of biological specimens. Proceedings of International Optical Computing Conference, Capri, Italy, August 31-September 2.
45. Cairns, J., Jr. 1976. Biological monitoring -- an overview. Pages 1-18 in Conference Continuing Education Courses. International Association Water Pollution Research, Melbourne, Australia.
46. Cairns, J., Jr. 1976. Estimating the assimilative capacity of water ecosystems. Pages 173-189 in R. K. Sharma, J. D. Buffington, and J. T. McFadden, ed. Biological Significance of Environmental Impacts. The National Technical Information Service, Springfield, VA.
47. Cairns, J., Jr. 1976. Heated waste-water effects on aquatic ecosystems. Pages 32-38 in G. W. Esch and R. W. McFarlane, ed. Thermal Ecology II. National Technical Information Service, Springfield, VA.
48. Cairns, J., Jr. 1976. Reflective essay. Pages 42-49 in Report of a Workshop on the Impact of Thermal Power Plant Cooling Systems on Aquatic Environments, Vol. 1. Special Report 38. Sigma Research Inc., Richland, WA.
49. Cairns, J., Jr. and K. L. Dickson. 1976. Assuring ecological integrity in water developments. Pages 163-176 in Transactions of the 41st North American Wildlife and Natural Resources Conference. Wildlife Management Institute, Washington, DC.

50. Cairns, J., Jr. and K. L. Dickson. 1976. Ecological design parameters for assessing the impact of heated wastewater discharges. Pages 78-84 in Report of a Workshop on the Impact of Thermal Power Plant Cooling Systems on Aquatic Environments, Vol. II. Special Report 38. Sigma Research, Inc., Richland, WA.
51. Dickson, K. L., J. Cairns, Jr., D. S. Cherry, and J. R. Stauffer. 1976. An analysis of the applicability of EPA's draft water-temperature criteria: A site-specific case-history evaluation. Pages 316-326 in G. W. Esch and R. W. McFarlane, ed. Thermal Ecology II. National Technical Information Service, Springfield, VA.
52. Westlake, G. F., W. H. van der Schalie, J. Cairns, Jr., and K. L. Dickson. 1976. The use of fish to continuously monitor an industrial effluent. Proceedings of the 3rd International Conference on Environmental Sensing and Assessment, Institute of Electrical and Electronics Engineers, Inc. 1(18-4):1-3.
53. Almeida, S. P., S. K. Case, W. J. Dallas, P. F. Lai, J. Cairns, Jr., K. L. Dickson, and P. Pryfogle. 1977. Pattern recognition of biological specimens via matched spatial filtering. Pages 1-14 in Proceedings of International Optical Computing Conference, Visegrad, Hungary.
54. Almeida, S. P., J. K. T. Eu, P. F. Lai, J. Cairns, Jr., and K. L. Dickson. 1977. A real-time optical processor for pattern recognition of biological specimens. Pages 573-579 in E. Marom and A. A. Friesem, ed. Applications of Holography and Optimal Data Processing. Pergamon Press, Oxford.
55. Cairns, J., Jr. 1977. Quantification of biological integrity. Pages 171-187 in R. K. Ballentine and L. J. Guarria, ed. Integrity of Water. U. S. Environmental Protection Agency, Office of Water and Hazardous Materials, Washington, DC. 055-001-010680-1.
56. Cairns, J., Jr. 1977. Thermal discharges. Pages 733-735 in J. R. Clark, ed. Coastal Ecosystem Management: A Technical Manual for the Conservation of Coastal Resources. Wiley Interscience, New York.
57. Cairns, J., Jr. and K. L. Dickson. 1977. Effects of temperature changes and chlorination upon the community structure of aquatic organisms. Pages 129-144 in M. Marois, ed. Towards a Plan of Action for Mankind: Needs and Resources -- Methods of Provision. Pergamon Press, Oxford.
58. Cairns, J., Jr. and K. L. Dickson. 1977. Elasticity, inertia, and resiliency of water ecosystems. Pages 371-381 in Proc. Symposium Terrestrial and Aquatic Ecological Studies of the Northwest. Eastern Washington State College Press, Cheney, WA.
59. Cairns, J., Jr. and K. L. Dickson. 1977. Recovery of streams. Pages 24-42 in J. Cairns, Jr., K. L. Dickson and E. E. Herricks, ed. Recovery and Restoration of Damaged Ecosystems. University Press of Virginia, Charlottesville.
60. Cairns, J., Jr. and W. H. Yongue, Jr. 1977. Factors affecting the number of species in freshwater protozoan communities. Pages 257-304 in J. Cairns, Jr., ed. Aquatic Microbial Communities. Garland Publishing, Inc., New York.
61. Cairns, J., Jr., K. L. Dickson, and A. L. Buikema, Jr. 1977. Critical Species and Ecosystems, Sections 3.4 and 3.5 in Toxics Handbook for State and Areawide (208) Water Quality Management Planning Agencies, Document P-2225, ERA Contract No. 68-01-4176. Environmental Research and Technology, Inc., Concord, MA.
62. Cairns, J., Jr., K. L. Dickson, and E. E. Herricks. 1977. The recovery and restoration of damaged ecosystems, a challenge for action: Symposium analysis. Pages 522-525 in J. Cairns, Jr., K. L. Dickson and E. E. Herricks, ed. Recovery and Restoration of Damaged Ecosystems. University Press of Virginia, Charlottesville.
63. Cairns, J., Jr., K. L. Dickson, J. P. Slocumb, S. P. Almeida, and J. K. T. Eu. 1977. Biological monitoring of aquatic community structure using a computer interfaced laser system. Pages 143-150 in J. S. Alabaster, ed. Biological Monitoring of Inland Fisheries. Applied Science Publishers, Ltd. Essex, England.
64. Cairns, J., Jr., D. Gruber, K. L. Dickson, A. C. Hendricks, and W. H. van der Schalie. 1977. Developing an on-site continuous biological monitoring system for the chemical industry. Pages 285-294 in L. Delpino and A. Krigman, ed. Proceedings of the Fifth Annual Industrial Pollution Conference. Water and Wastewater Equipment Manufacturers Association, Inc., McLean, VA.

65. Cherry, D. S., S. R. Larrick, K. L. Dickson, and J. Cairns, Jr. 1977. Response of eurythermal and stenothermal fish species to chlorinated discharges. Pages 413-418 in D. D. Hemphill, ed. Trace Substances in Environmental Health - XI. University of Missouri, Columbia.
66. Dickson, K. L., J. P. Slocumb, J. Cairns, Jr., S. P. Almeida, and J. K. T. Eu. 1977. A laser-based optical filtering system to analyze samples of diatom communities. Pages 121-132 in J. Cairns, Jr., K. L. Dickson, and G. F. Westlake, ed. Biological Monitoring of Water and Effluent Quality, STP 607. American Society for Testing and Materials, Philadelphia, PA.
67. Herricks, E. E. and J. Cairns, Jr. 1977. The effects of lime neutralization of acid mine drainage on stream ecology. Pages 477-486 in Proceedings of the 32nd Industrial Waste Conference, Purdue University. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
68. Almeida, S. P., S. K. Case, J. M. Fournier, H. Fugii, J. Cairns, Jr., K. L. Dickson, and P. Pryfogle. 1978. Analysis of algae samples using coherent optical processing. Pages 351-354 in Proceedings of the International Commission for Optics, ICO-11, Madrid, Spain.
69. Buikema, A. L., Jr., S. R. Sherberger, G. W. Knauer, L. A. Newbern, J. T. Reading, and J. Cairns, Jr. 1978. Effects of simulated entrainment on the biology of a freshwater Cladocera. Pages 809-825 in J. H. Thorp, and J. W. Gibbons, ed. Energy and Environmental Stress in Aquatic Systems. National Technical Information Service, Springfield, VA. CONF-7711114.
70. Cairns, J., Jr. 1978. The aquatic communities and biological monitoring: A summary. Page 8 in K. C. Flynn and W. T. Mason, ed. The Freshwater Potomac: Aquatic Communities and Environmental Stresses. Interstate Commission on the Potomac River Basin, Bethesda, MD.
71. Cairns, J., Jr. 1978. Biological monitoring of toxic substances. Paper 6 in F. Zeigler, ed. Water Quality Management. Vanderbilt University, Nashville, TN.
72. Cairns, Jr., Jr. 1978. Biological principles of hazard evaluation. Paper 7 in F. Zeigler, ed. Water Quality Management. Vanderbilt University, Nashville, TN.
73. Cairns, J., Jr. 1978. Future research need. Pages 102-105 in K. C. Flynn and W. T. Mason, ed. The Freshwater Potomac: Aquatic Communities and Environmental Stresses. Interstate Commission on the Potomac River Basin, Bethesda, MD.
74. Cairns, J., Jr. 1978. Improving information feedback loops and environmental quality. Pages 249-260 in Eighth Annual Conference on Environmental Toxicology. National Technical Information Service, Springfield, VA.
75. Cairns, J., Jr. 1978. The modification of inland waters. Pages 146-162 in H. P. Brokaw, ed. Wildlife and America. Council on Environmental Quality, U. S. Government Printing Office, Washington, DC.
76. Cairns, J., Jr. 1978. Summary, recommendations and the future of reclaiming surface mines for fish and wildlife. Pages 15-21 in D. E. Samuel, J. R. Stauffer, C. H. Hocutt, and W. T. Mason, Jr., ed. Surface Mining and Fish/Wildlife Needs in the Eastern United States. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-78/81.
77. Cairns, J., Jr. 1978. Water quality needs for the Potomac and other river basins. Pages 14.1-14.9 in Thames Potomac Seminar. Water Services: Needs, Management and User Relationships. Thames Water Authority and Institution of Environmental Sciences, London.
78. Cairns, J., Jr., K. L. Dickson, and A. W. Maki. 1978. Summary and conclusions. Pages 191-197 in J. Cairns, Jr., K. L. Dickson, and A. W. Maki, ed. Estimating the Hazard of Chemical Substances to Aquatic Life, STP 657. American Society for Testing and Materials, Philadelphia, PA.
79. Cherry, D. S., S. R. Larrick, J. D. Giattina, K. L. Dickson, and J. Cairns, Jr. 1978. The avoidance response of the common shiner to total and combined residual chlorine in thermally influenced discharges. Pages 826-837 in J. H. Thorp and J. W. Gibbons, ed. Energy and Environmental Stress in Aquatic Systems. National Technical Information Service, Springfield, VA. CONF-7711114.

80. Dickson, K. L., J. Cairns, Jr., P. A. Pryfogle, S. P. Almeida, and S. Case. 1978. Automated microbial identification system. Pages 23-30 in R. M. Gerhold, ed. Microbiology of Power Plant Thermal Effluents. University of Iowa, Iowa City.
81. Dickson, K. L., J. Cairns, Jr., J. R. Clark, and J. H. Rodgers, Jr. 1978. Evaluating pollution stress on ecosystems. Pages 80-83 in K. C. Flynn, and W. T. Mason, ed. The Freshwater Potomac: Aquatic Communities and Environmental Stresses. Interstate Commission on the Potomac River Basin, Bethesda, MD.
82. Larrick, S. R., D. S. Cherry, K. L. Dickson, and J. Cairns, Jr. 1978. The use of various avoidance indices to evaluate the behavioral response of the golden shiner to components of total residual chlorine. Pages 135-147 in R. L. Jolley, H. Gorchev, and D. G. Hamilton, Jr., ed. Water Chlorination: Environmental Impact and Health Effects, Vol. 2. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
83. Lubinski, K. S., J. Cairns, Jr., and K. L. Dickson. 1978. Quantifying the effects of ammonia on the swimming behavior of bluegills. Pages 508-514 in D. D. Hemphill, ed. Trace Substances in Environmental Health - XII. University of Missouri, Columbia.
84. Thompson, K. W., K. L. Dickson, D. Hooley, J. Cairns, Jr., and W. H. van der Schalie. 1978. A computer monitored aquatic bioassay system. Pages 61-66 in J. B. Carberry, ed. Proceedings of the 10th Mid-Atlantic Industrial Waste Conference. University of Delaware, Newark.
85. Buikema, A. L., Jr. and J. Cairns, Jr. 1979. Toxicity tests and water quality criteria -- a biologist's perspective. Pages 343-354 in Proceedings of Ecological Damage Assessment Conference, Society of Petroleum Industry Biologists, Arlington, VA.
86. Cairns, J., Jr. 1979. Academic blocks to assessing environmental impact of water supply alternatives. Pages 77-79 in A. M. Blackburn, ed. The Thames Potomac Seminars. Interstate Commission on the Potomac River Basin, Bethesda, MD.
87. Cairns, J., Jr. 1979. Biological monitoring - scope and concept. Pages 3-20 in J. Cairns, Jr., G. P. Patil, and W. E. Waters, ed. Environmental Biomonitoring, Assessment, Prediction, and Management - Certain Case Studies and Related Quantitative Issues. International Cooperative Publishing House, Fairland, MD.
88. Cairns, J., Jr. 1979. Conference Summary. Pages 13-15 in D. E. Samuel, J. R. Stauffer, C. H. Hocutt, and W. T. Mason, ed. Addendum to Surface Mining and Fish/Wildlife Needs in the Eastern United States. U. S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-78-81A.
89. Cairns, J., Jr. (one of 27 collaborators). 1979. Contribution on rehabilitation. In G. R. Francis, J. J. Magnuson, H. A. Regier, and D. R. Talheim, ed. Rehabilitating Great Lakes Ecosystems, Tech. Report No. 37, Great Lakes Fishery Commission, Ann Arbor, MI. 99 pp.
90. Cairns, J., Jr. 1979. Estimating environmental damage. Pages 162-171 in C. H. Brown, Chrm. Proceedings of the 1979 U. S. Fish and Wildlife Service Pollution Response Workshop. U. S. Department of the Interior, Fish and Wildlife Service, Washington, DC.
91. Cairns, J., Jr. 1979. Final summary. Pages 22.6-22.7 in A. James, and L. Evison, ed. Biological Indicators of Water Quality. John Wiley & Sons, Ltd., Sussex, England.
92. Cairns, J., Jr. 1979. A strategy for use of protozoans in the evaluation of hazardous substances. Pages 61-67 in A. James, and L. Evison, ed. Biological Indicators of Water Quality. John Wiley & Sons, Ltd., Sussex, England.
93. Cairns, J., Jr., D. S. Cherry, and S. R. Larrick. 1979. Use of a site specific laboratory and artificial stream system to evaluate the response of fish and other biota to power plant discharges. Pages 417-433 in Proceedings of the 7th Annual Industrial Pollution Conference. Water and Wastewater Equipment Manufacturers Association, McLean, VA.
94. Cairns, J., Jr., D. L. Kuhn, and J. L. Plafkin. 1979. Protozoan colonization of artificial substrates. Pages 39-57 in R. L. Weitzel, ed. Methods and Measurements of Attached Microcommunities: A Review, STP 690. American Society for Testing and Materials, Philadelphia, PA.

95. Cairns, J., Jr., J. R. Stauffer, Jr., and C. H. Hocutt. 1979. Opportunities for maintenance and rehabilitation of riparian habitats: The Eastern United States. Pages 304-317 in R. R. Johnson, and J. F. McCormick, ed. Strategies for Protection and Management of Floodplain Wetlands and Other Riparian Ecosystems. Department of Agriculture, Forest Service, Office of Biological Sciences, Washington, DC. GTR-WO-12.
96. Clark, J. R., K. L. Dickson, and J. Cairns, Jr. 1979. Estimating aufwuchs biomass. Pages 116-140 in R. L. Weitzel, ed. Methods and Measurements of Attached Microcommunities: A Review. American Society for Testing and Materials, Philadelphia, PA.
97. Gruber, D., J. Cairns, Jr., and A. C. Hendricks. 1979. A Computerized biological monitoring facility for demonstrating compliance. Pages 1-12 in K. Watson, ed. Proceedings of the Industrial Wastes Symposia. 52nd Annual WPCF Conference, Houston, TX.
98. Herricks, E. E. and J. Cairns, Jr. 1979. Monitoring and mitigation of aquatic hazards. Pages 220-231 in E. R. Frederick, ed. Control of Specific (Toxic) Pollutants. The Air Pollution Control Association, Pittsburgh, PA.
99. Rodgers, J. H., Jr., D. S. Cherry, K. L. Dickson, and J. Cairns, Jr. 1979. Invasion, population dynamics and elemental accumulation of Corbicula fluminea in the New River at Glen Lyn, Virginia. Pages 99-110 in J. C. Britton, ed. Proceedings, First International Corbicula Symposium. Texas Christian University, Fort Worth, TX.
100. Rodgers, J. H., Jr., K. L. Dickson, and J. Cairns, Jr. 1979. A review and analysis of some methods to measure functional aspects of periphyton. Pages 142-167 in R. L. Weitzel, ed. Methods and Measurements of Attached Microcommunities: A Review. American Society for Testing and Materials, Philadelphia, PA.
101. Buikema, A. L., Jr., B. R. Niederlehner, and J. Cairns, Jr. 1980. The use of grass shrimp in toxicity testing. Pages 155-173 in A. L. Buikema, Jr., and J. Cairns, Jr., ed. Aquatic Invertebrate Bioassays. American Society for Testing and Materials, Philadelphia, PA.
102. Buikema, A. L., Jr., C. L. Rutherford, and J. Cairns, Jr. 1980. Screening sediments for potential toxicity by in vitro enzyme inhibition. Pages 463-476 in R. A. Baker, ed. Contaminants and Sediments, Vol. 1: Transport, Fate, and Case Studies. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
103. Cairns, J., Jr. 1980. Computer interfaced systems for biological monitoring of water quality. Pages 81-101 in Second Interagency Workshop on In-Situ Water Quality Sensing: Biological Sensors. National Oceanographic and Atmospheric Administration, U. S. Department of Commerce, Washington, DC.
104. Cairns, J., Jr. 1980. Environmental analysis. Pages 219-244 in L. Nielson, and Bob Lackey, ed. Fisheries Management. Blackwell Scientific Publications Ltd., Oxford.
105. Cairns, J., Jr. 1980. Scenarios on alternative future for biological monitoring 1978-1985. Pages 11-21 in D. L. Wolfe, ed. Biological Monitoring for Environmental Effects. Lexington Books, Lexington, MA.
106. Cairns, J., Jr. and K. L. Dickson. 1980. The ABC's of biological monitoring. Pages 1-31 in J. R. Stauffer, and C. H. Hocutt, ed. Biological Monitoring of Fish. Lexington Books, Lexington, MA.
107. Cairns, J., Jr. and K. L. Dickson. 1980. Risk analysis for aquatic ecosystems. Pages 73-83 in Biological Evaluation of Environmental Impact. Council on Environmental Quality and Fish and Wildlife Service, Washington, DC. FWS/OBS-80-26.
108. Cairns, J. and D. Gruber. 1980. The use of fish in inplant monitoring. Pages 43-58 in J. R. Stauffer, and C. H. Hocutt, ed. Biological Monitoring of Fish. Lexington Books, Lexington, MA.
109. Geiger, J. G., A. L. Buikema, Jr., and J. Cairns, Jr. 1980. A tentative seven-day test for predicting effects of stress on populations of Daphnia pulex. Pages 13-26 in J. G. Eaton, P. R. Parrish, and A. C. Hendricks, ed. Aquatic Toxicology. American Society for Testing and Materials, Philadelphia, PA.
110. Lubinski, K. S., K. L. Dickson, and J. Cairns, Jr. 1980. The effects of abrupt sublethal gradients of ammonium chloride on the activity level, turning and preference-avoidance behavior of bluegills. Pages 328-340 in J. G. Eaton, P. R. Parrish, and A. C. Hendricks, ed. Aquatic Toxicology. American Society for Testing and Materials, Philadelphia, PA.

111. Miller, W. R., III., D. Gruber, J. Cairns, Jr., and A. C. Hendricks. 1980. Biological monitoring of chlorine-induced ventilatory changes in bluegill sunfish (*Lepomis macrochirus*). Pages 589-597 in R. L. Jolley, W. A. Brungs, and R. B. Cummings, ed. Water Chlorination: Environmental Impact and Health Effects, Vol. 3. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
112. Rodgers, J. H., Jr., D. S. Cherry, R. L. Graney, K. L. Dickson, and J. Cairns, Jr. 1980. Comparison of heavy metal interactions in acute and artificial stream bioassay techniques for the Asiatic clam (*Corbicula fluminea*). Pages 266-280 in J. G. Eaton, P. R. Parrish, and A. C. Hendricks, ed. Aquatic Toxicology. American Society for Testing and Materials, Philadelphia, PA.
113. Rodgers, J. H., Jr., J. R. Clark, K. L. Dickson, and J. Cairns, Jr. 1980. Nontaxonomic analyses of structure and function of aufwuchs communities in lotic microcosms. Pages 625-644 in J. P. Giesy, Jr., ed. Microcosms in Ecological Research. National Technical Information Service, Springfield, VA. CONF-781101.
114. Webster, J. R., E. F. Benfield, and J. Cairns, Jr. 1980. Model predictions of the effects of impoundment on particulate organic matter transport in a river system. Pages 339-364 in J. V. Ward, and J. A. Stanford, ed. The Ecology of Regulated Streams. Plenum Press, New York.
115. Cairns, J., Jr. 1981. Introduction to biological monitoring. Pages 375-409 in H. B. Mark, Jr., and J. S. Mattson, ed. Water Quality Measurement: The Modern Analytical Techniques. Marcel Dekker, Inc., New York.
116. Cairns, J., Jr. 1981. The role of aquatic biologists in the evaluation of pollution. Keynote address. Pages 7-12 in L. A. Krumholtz, ed. Warmwater Streams Symposium. Allen Press, Inc., Lawrence, KS.
117. Cairns, J., Jr. 1981. The water management crunch: an ecological perspective. Pages 88-94 in W. E. Jeske, ed. Economics, Ethics, Ecology: Roots of Productive Conservation. Soil Conservation Society of America, Ankeny, IA.
118. Cairns, J., Jr. and K. W. Thompson. 1981. A computer interfaced toxicity testing system for simulating variable effluent loading. Pages 183-198 in P. L. Levins, J. C. Harris, and K. D. Drewitz, ed. Second Symposium on Process Measurements for Environmental Assessment. Arthur D. Little, Inc., Cambridge, MA. EPA 600/9-81-018.
119. Cairns, J., Jr., M. M. Brinson, R. L. Johnson, W. B. Parker, R. E. Turner, and P. V. Winger. 1981. Impacts associated with southeastern bottomland hardwood forest ecosystems. Pages 91-124 in J. R. Clark, and J. Benforado, ed. Wetlands of Bottomland Hardwood Forests. Elsevier Scientific Publishing Co., Amsterdam, The Netherlands.
120. White, G., J. D. Bredehoeft, J. Cairns, Jr., F. Christman, A. V. Kneese, D. A. Okun, and T. M. Schad. 1981. Water resources. Pages 241-270 in Outlook for Science and Technology: The Next Five Years. Prepared for the National Science Foundation by the National Research Council, Washington, DC.
121. Cairns, J., Jr. 1982. Are single species toxicity tests alone adequate for estimating environmental hazard? Pages 7-33 in Symposium on Environmental Monitoring. Alberta Society of Professional Biologists, Edmonton, Alberta.
122. Cairns, J., Jr. 1982. Environmental effects. Pages 4-15 to 4-21 in G. F. Bennett, F. S. Feates, and I. Wilder, ed. Hazardous Materials Spills Handbook. McGraw-Hill Book Company, New York.
123. Cairns, J., Jr. 1982. Freshwater protozoan communities. Pages 249-285 in A. T. Bull and A. R. K. Watkinson, ed. Microbial Interactions and Communities, Vol. 1. Academic Press, Inc., London.
124. Cairns, J., Jr. 1982. Predictive and reactive systems for aquatic ecosystem quality control. Pages 72-84 in M. B. Fiering, ed. Scientific Basis of Water-Resource Management. Geophysics Research Board, National Academy Press, Washington, DC.
125. Cairns, J., Jr. 1982. Restoration of damaged ecosystems. Pages 220-239 in W. T. Mason, Jr. and S. Iker, ed. Research on Fish and Wildlife Habitat. Office of Research and Development, U. S. Environmental Protection Agency, Washington, DC. EPA-600/8-82-002.

126. Cairns, J., Jr. and D. S. Cherry. 1982. A site-specific field and laboratory evaluation of coal-fired power plant discharges. Pages 10-29 in International Conference on Coal Fired Power Plants and the Aquatic Environment. Copenhagen, Denmark.
127. Cairns, J., Jr. and M. S. Henebry. 1982. Interactive and noninteractive protozoan colonization processes. Pages 23-70 in J. Cairns, Jr., ed. Artificial Substrates. Ann Arbor Science Publishers, Inc., Ann Arbor, MI.
128. Cairns, J., Jr., D. S. Cherry, and J. D. Giattina. 1982. Correspondence between behavioral responses of fish in laboratory and field heated, chlorinated effluents. Pages 207-215 in W. J. Mitsch, R. W. Bosserman, and J. M. Klopatek, ed. Energy and Ecological Modeling. Elsevier Scientific Publishing Co., Amsterdam, The Netherlands.
129. Buikema, A. L., Jr., J. Cairns, Jr., and W. H. Yongue, Jr. 1983. Correlation between the autotrophic index and protozoan invasion rates as indicators of pollution stress. Pages 204-215 in W. E. Bishop, R. D. Cardwell, and B. B. Heidolph, ed. Aquatic Toxicology and Hazard Assessments: Sixth Symposium, STP 802. American Society for Testing and Materials, Philadelphia, PA.
130. Cairns, J., Jr. 1983. The case for simultaneous toxicity testing at different levels of biological organization. Pages 111-127 in W. E. Bishop, R. D. Cardwell, and B. B. Heidolph, ed. Aquatic Toxicology and Hazard Assessment: Sixth Symposium, STP 802. American Society for Testing and Materials, Philadelphia, PA.
131. Cairns, J., Jr. 1983. Comments on environmental quality standards for trichloroethylene. Pages 78-79 in R. C. Graber, ed. Proceedings of the Seminar on Development and Assessment of Environmental Standards. American Academy of Environmental Engineers, Annapolis, MD.
132. Cairns, J., Jr. 1983. Desirable characteristics of environmental quality standards and general considerations involved in their development: The perspective of an aquatic ecologist. Pages 27-30 in R. C. Graber, ed. Proceedings of the Seminar on Development and Assessment of Environmental Standards. American Academy of Environmental Engineers, Annapolis, MD.
133. Cairns, J., Jr. 1983. Management options for the rehabilitation and enhancement of surface mined ecosystems. Pages 4-30 in D. J. Robertson, ed., Reclamation and the Phosphate Industry, Florida Institute of Phosphate Research, Bartow, FL. Publ. No. 03-036-010.
134. Cairns, J., Jr. and A. L. Buikema, Jr. 1983. Verifying predictions of environmental safety and harm. Pages 1.5.1-1.5.23 in Concepts in Marine Pollution Measurements. USEPA/NOAA, Washington, DC.
135. Cairns, J., Jr., M. H. Dahlberg, K. L. Dickson, N. Smith, and W. T. Waller. 1983. The relationship of fresh-water protozoan communities to the MacArthur-Wilson equilibrium model. Pages 272-287 in R. Patrick, ed. Diversity. Hutchinson Ross Publishing Company, Stroudsburg, PA. (Selected as a key paper on diversity in Benchmark Papers in Ecology/13 and reprinted from Am. Nat. 103:439-454 (1969) by permission of the University of Chicago Press).
136. Paul, R. W., Jr., E. F. Benfield, and J. Cairns, Jr. 1983. Dynamics of leaf processing in a medium-sized river. Pages 403-423 in T. D. Fontaine, III, and S. M. Bartell, ed. Dynamics of Lotic Ecosystems. Ann Arbor Science Publishers, Ann Arbor, MI.
137. Rodgers, J. H., Jr., M. E. McKeivitt, D. O. Hammerlund, K. L. Dickson, and J. Cairns, Jr. 1983. Primary production and decomposition of submergent and emergent aquatic plants of two Appalachian rivers. Pages 282-301 in T. D. Fontaine, III, and S. M. Bartell, ed. Dynamics of Lotic Ecosystems. Ann Arbor Science Publishers, Ann Arbor, MI.
138. Cairns, J., Jr. 1984. Freshwater biological monitoring: Keynote address. Pages 1-14 in D. Pascoe, and R. W. Edwards, ed. Freshwater Biological Monitoring. Pergamon Press, Oxford.
139. Cairns, J., Jr. 1984. Future directions and refinements of bioassay techniques for industrial effluent monitoring. Pages 153-176 in Environmental Symposium '84 Proceedings. The Fertilizer Institute, Washington, DC.
140. Cairns, J., Jr. and A. L. Buikema, Jr. 1984. Verifying predictions of environmental safety and harm. Pages 81-111 in H. H. White, ed. Concepts in Marine Pollution Measurements. Maryland Sea Grant Publication, University of Maryland, College Park.

141. Cherry, D. S., J. Cairns, Jr., J. Van Hassel, W. L. Specht, R. A. Lechleitner, R. B. Nicholson, and J. B. Whitaker. 1984. Field and laboratory methods useful in predicting ecotoxicological effects of coal ash. Pages 9-1 to 9-31 in Workshop Proceedings: The Effects of Trace Elements on Aquatic Ecosystems. Carolina Power & Light Company, New Hill, NC. EPRI Ea-3329.
142. Doane, T. R., J. Cairns, J., and A. L. Buikema, Jr. 1984. Comparison of biomonitoring and techniques for evaluating effects of jet fuel on bluegill sunfish (Lepomis macrochirus). Pages 103-112 in D. Pascoe, and R. W. Edwards, ed. Freshwater Biological Monitoring. Pergamon Press, Oxford.
143. Cairns, J., Jr. 1985. Factors moderating toxicity in surface waters. Pages 49-64 in J. Wilson, ed. The Fate of Toxics in Surface and Ground Waters: Proceedings of the Second National Water Conference. Jan. 24-25, 1984. Academy of Natural Sciences, Philadelphia, PA.
144. Cairns, J., Jr. 1985. Future needs. Pages 151-153 in J. Cairns, Jr., ed., Ecoaccidents. Plenum Publishing, London.
145. Cairns, J., Jr. 1985. Keynote address: Facing some awkward questions concerning rehabilitation management practices on mined lands. Pages 9-17 in R. P. Brooks, D. E. Samuel, and J. B. Hill, ed. Wetlands and Water Management on Mined Lands. Pennsylvania State University, University Park.
146. Cairns, J., Jr. 1985. Legislation and water quality. Pages 135-139 in C. Coale, J. P. Marshall, and W. Kerns, ed. Land Use and the Chesapeake Bay. Virginia Cooperative Extension Service Publ. 305-003. Virginia Polytechnic Institute and State University, Blacksburg.
147. Cairns, J., Jr. and J. R. Pratt. 1985. Conference summary - Aquatic environments on mined lands: Progress and future need. Pages 1-8 in R. P. Brooks, D. E. Samuel, and J. B. Hill, ed. Wetlands and Water Management on Mined Lands. Pennsylvania State University, University Park.
148. Cairns, J., Jr. and J. R. Pratt. 1985. Ecological consequence assessment: Effects of bioengineered organisms. Pages D-1 to D-32 in V. T. Covello, and J. R. Fiksel, ed. The Suitability and Applicability of Risk Analysis Methods for Environmental Applications of Biotechnology. National Science Foundation, Washington, DC. Report No. NSF/PRA 8502286.
149. Cairns, J., Jr. and J. R. Pratt. 1985. Multispecies toxicity testing using indigenous organisms -- A new, cost-effective approach to ecosystem protection. Pages 149-159 in 1985 Environmental Conference, ISSN 0272-7269. Tappi Press, Atlanta, GA.
150. Pratt, J. R. and J. Cairns, Jr. 1985. Determining microbial community equilibrium in disturbed wetland ecosystems. Pages 201-209 in F. J. Webb, ed. Proceedings of the Twelfth Annual Conference on Wetland Restoration and Creation. Hillsborough Community College, Tampa, FL.
151. Pratt, J. R., J. Cairns, Jr., and P. M. Stewart. 1985. Development of microbial communities in mined lands. Pages 239-259 in R. P. Brooks, D. E. Samuel, and J. B. Hill, ed. Wetlands and Water Management on Mined Lands. Pennsylvania State University, University Park.
152. Cairns, J., Jr. 1986. Don't forget to look at the stream! Pages 29-30 in W. R. Eblen, ed. Conference Proceedings: Water Quality Forum. The Rene Dubos Center for Human Environments, Inc., New York.
153. Cairns, J., Jr. 1986. Emergence of integrative environmental management. Pages 232-242 in C. Y. Kuo and T. M. Younos, ed. Effects of Upland and Shoreline Land Use on the Chesapeake Bay. Virginia Cooperative Extension Service, Virginia Polytechnic Institute and State University, Blacksburg.
154. Cairns, J., Jr. 1986. Freshwater. Pages 39-43 in G. E. Beanlands, W. J. Erckmann, G. H. Orians, J. O'Riordan, D. Policansky, M. H. Sadar, and B. Sadler, ed. Cumulative Environmental Effects: A Binational Perspective. Canadian Environmental Assessment Research Council, Ottawa, and National Research Council, Washington, DC.
155. Cairns, J., Jr. 1986. Management of water quality and natural habitats to enhance both human and wildlife need. Pages 49-64 in J. Cairns, Jr., and Ruth Patrick, ed. Environmental Regeneration II: The Uses and Management of Water for Human Need. Praeger Scientific, Philadelphia, PA.

156. Cairns, J., Jr. 1986. Multispecies toxicity testing: A new information base for hazard evaluation. Pages 37-49 in A. Singh and U. S. Sharma, ed. International Overviews: Environmental Sciences and Engineering, Vol. 2. Geo-Environ. Academia, Jodhpur, India.
157. Cairns, J., Jr. 1986. Overview. Pages 1-5 in J. Cairns, Jr., ed., Community Toxicity Testing, STP920. American Society for Testing and Materials, Philadelphia, PA.
158. Cairns, J., Jr. 1986. Research needed to develop toxicity testing procedures for making water quality permitting decisions. Pages 185-195 in A. Singh and U. S. Sharma, ed. International Overviews: Environmental Sciences and Engineering, Vol. 2. Geo-Environ. Academia, Jodhpur, India.
159. Cairns, J., Jr. 1986. Restoration, reclamation, and regeneration of degraded or destroyed habitats. Pages 465-484 in M. Soule, ed. Conservation Biology: Science of Scarcity and Diversity. Sinauer Associates, Inc., Sunderland, MA.
160. Cairns, J., Jr. and J. R. Pratt. 1986. Developing a sampling strategy. Pages 168-186 in B. G. Isom, ed. Rationale for Sampling and Interpretation of Ecological Data in the Assessment of Freshwater Ecosystems, STP 894. American Society for Testing and Materials, Philadelphia, PA.
161. Cairns, J., Jr. and J. R. Pratt. 1987. Ecological consequence assessment: Effects of bioengineered organisms. Pages 88-108 in J. Fiksel and V. T. Covello, ed. Biotechnology Risk Assessment. Pergamon Press, New York.
162. Cairns, J., Jr. and J. R. Pratt. 1986. Factors affecting the acceptance and rejection of genetically altered microorganisms by established natural aquatic communities. Pages 207-221 in T. M. Poston, and R. Purdy, ed. Aquatic Toxicology and Environmental Fate, Ninth Symposium, STP 921. American Society for Testing and Materials, Philadelphia, PA.
163. Cairns, J., Jr. and J. R. Pratt. 1986. Use of protozoan communities in protecting aquatic ecosystems. Pages 187-197 in M. Cs. Bereczky, ed. Advances in Protozoological Research. Akademiai Kiado, Budapest, Hungary.
164. McCormick, P. V., J. R. Pratt, and J. Cairns, Jr. 1986. The effect of 3-trifluoromethyl-4-nitrophenol on the structure and function of protozoan communities established on artificial substrates. Pages 224-240 in J. Cairns, Jr., ed. Community Toxicity Testing, STP 920. American Society for Testing and Materials, Philadelphia, PA.
165. Niederlehner, B. R., J. R. Pratt, A. L. Buikema, Jr., and J. Cairns, Jr. 1986. Comparison of estimates of hazard derived at three levels of complexity. Pages 30-48 in J. Cairns, Jr., ed. Community Toxicity Testing, STP 920. American Society for Testing and Materials, Philadelphia, PA.
166. Cairns, J., Jr. 1987. Disturbed ecosystems as opportunities for research in restoration ecology. Pages 307-320 in W. R. Jordon, III, J. D. Aber, and M. E. Gilpin, ed. Restoration Ecology: A Synthetic Approach to Ecological Research. Cambridge University Press, Cambridge, England.
167. Cairns, J., Jr. 1987. First surveys on the Savannah River. Pages 7-17 in The Savannah River and Its Environs. National Technical Information Service, Springfield, VA.
168. Cairns, J., Jr. and A. L. Buikema, Jr. 1987. Estimating the impact of pulses of mixtures of chemicals upon aquatic organisms. Pages 285-300 in V. B. Vouk, G. C. Butler, A. C. Upton, D. V. Parke, and S. H. Asher, ed. Methods for Assessing the Effects of Mixtures of Chemicals. John Wiley & Sons, Ltd., Sussex.
169. Cherry, D. S. and J. Cairns, Jr. 1987. Toxicological, physiological, and behavioral responses of selected organisms to fly ash effluent: Twelve-year summary. In Selected Aspects of Exposure to Heavy Metals in the Environment: Monitors, Indicators, and High Risk Groups. National Academy Press, Washington, DC.
170. Pratt, J. R., B. R. Niederlehner, N. J. Bowers, and J. Cairns, Jr. 1987. Effects of zinc on freshwater microbial communities. Pages 324-326 in S. E. Lindberg, and T. C. Hutchinson, ed. Sixth International Conference on Heavy Metals in the Environment, Vol. 2, CEP Consultants Ltd., Edinburgh.

171. Cairns, J., Jr. 1988. Environmental risk research: How much is enough? Pages 9-19 in Proceedings: Eighth Annual Gulf of Mexico Information Transfer Meeting. U. S. Department of the Interior, Minerals Management Service, New Orleans, LA. 456 pp. OCS Study MMS 88-0035.
172. Cairns, J., Jr. 1988. Increasing diversity by restoring damaged ecosystems. Pages 333-343 in E. O. Wilson, ed. Biodiversity. National Academy Press, Washington, DC.
173. Cairns, J., Jr. 1988. Integrated resource management: The challenge for the next ten years. Pages 559-566 in W. J. Adams, G. A. Chapman, and W. G. Landis, ed. Aquatic Toxicology and Hazard Assessment: Tenth Volume. American Society for Testing and Materials, Philadelphia, PA.
174. Cairns, J., Jr. 1988. Keynote address: Politics, economics, science - Going beyond disciplinary boundaries to protect aquatic ecosystems. Pages 1-16 in M. Evans, ed., Toxic Contaminants and Ecosystem Health: A Great Lakes Focus. John Wiley & Sons, Inc., New York.
175. Cairns, J., Jr. 1988. Predicting, validating and monitoring effects of toxics on large lake ecosystems. Pages 291-316 in N. W. Schmidtke, ed. Toxic Contamination in Large Lakes, Vol. II: Impact of Toxic Contaminants on Fisheries Management. International Association for Great Lakes Research, Lewis Publishers, Chelsea, MI.
176. Cairns, J., Jr. 1988. Preface, Chinese translation of Biological Monitoring. China Environmental Science Press, Beijing, Peoples Republic of China.
177. Cairns, J., Jr. 1988. Restoration ecology: The new frontier. Pages 1-11 in J. Cairns, Jr., ed. Rehabilitating Damaged Ecosystems. CRC Press, Boca Raton, FL.
178. Cairns, J., Jr. 1988. Validating biological monitoring. Pages 40-48 in D. Gruber, and J. M. Diamond, ed. Automated Biomonitoring: Living Sensors As Environmental Monitors. Horwood, Ltd., West Sussex, England.
179. Cairns, J., Jr. 1988. What constitutes field validation of predictions based on laboratory evidence? Pages 361-368 in W. J. Adams, G. A. Chapman, and W. G. Landis, ed. Aquatic Toxicology and Hazard Assessment: Tenth Volume. American Society for Testing and Materials, Philadelphia, PA.
180. Cairns, J., Jr., E. P. Smith, and D. Orvos. 1988. The problem of validating simulation of hazardous materials exposure in natural systems. Pages 448-464 in C. C. Barnet, and W. M. Holmes, ed. Proceedings, 1988 Summer Computer Simulation Conference. The Society for Computer Simulation International, San Diego, CA.
181. Hartwell, I., D. S. Cherry, and J. Cairns, Jr. 1988. Fish behavioral assessment of pollutants. Pages 138-165 in J. Cairns, Jr., and J. R. Pratt, ed. Functional Testing of Aquatic Biota for Estimating Hazards of Chemicals, STP 988. American Society for Testing and Materials, Philadelphia, PA.
182. Pratt, J. R. and J. Cairns, Jr. 1988. Use of microbial colonization parameters as a measure of functional response in aquatic ecosystems. Pages 55-67 in J. Cairns, Jr., and J. R. Pratt, ed. Functional Testing of Aquatic Biota for Estimating Hazards of Chemicals, STP 988. American Society for Testing and Materials, Philadelphia, PA.
183. Cairns, J., Jr. 1989. Applied ecotoxicology and methodology. Pages 275-290 in A. Boudou, and F. Ribeyre, ed. Aquatic Ecotoxicology: Fundamental Concepts and Methodologies, Vol. II. CRC Press, Boca Raton, FL.
184. Cairns, J., Jr. 1989. Biological monitoring of water quality. Pages 338-346 in R. C. Ward, J. C. Loftis and G. B. McBride, ed. International Symposium on the Design of Water Quality Information Systems. Fort Collins, CO.
185. Cairns, J., Jr. and D. Orvos. 1989. Ecological consequence assessment: predicting effects of hazardous substances upon aquatic ecosystems using ecological engineering. Pages 409-442 in W. J. Mitsch, and S. E. Jorgenson, ed. Ecological Engineering -- An Introduction to Ecotechnology. J. Wiley & Sons, Inc., New York.
186. Pratt, J. R., J. Cairns, Jr., and M. S. Henebry. 1989. Use of microbial community dynamics and microbial functional indices to assess wetland condition. Pages 1005-1017 in R. R. Sharitz, and J. W. Gibbons, ed. Freshwater Wetlands and Wildlife. Office of Scientific and Technical Information, U.S. Department of Energy, Oak Ridge, TN. DOE/CONF 8603101.

187. Pratt, J. R., J. Mitchell, R. Ayers, and J. Cairns, Jr. 1989. Comparison of estimates of effects of a complex effluent at differing levels of biological organization. Pages 174-188 in G. W. Suter, II, and M. A. Lewis, ed. Aquatic Toxicology and Environmental Fate: Eleventh Volume, STP 1007. American Society for Testing and Materials, Philadelphia, PA.
188. Stromberg, V. K., D. R. Orvos, V. S. Scanferlato, G. H. Lacy, and J. Cairns, Jr. 1989. In planta competition among cell-degrading enzyme mutants and wildlife strains of Erwinia carotovora. Pages 721-725 in Z. Klement, ed., Plant Pathogenic Bacteria, Proceedings of the 7th International Conference on Plant Pathogenic Bacteria. Budapest, Hungary.
189. Cairns, J., Jr. 1990. Gauging the cumulative effects of developmental activities on complex ecosystems. Pages 239-258 in J. G. Gosselink, L. C. Lee, and T. A. Muir, ed. Ecological Processes and Cumulative Impacts: Illustrated by Bottomland Hardwood Wetland Ecosystems. Lewis Publishers, Inc., Chelsea, MI.
190. Cairns, J., Jr. 1990. Some factors affecting management strategies for restoring the earth. Pages 347-351 in J. J. Berger, ed. Environmental Restoration: Science and Strategies for Restoring the Earth. Island Press, Washington, DC.
191. Cairns, J., Jr. and D. R. Orvos. 1990. Developing an ecological risk assessment strategy for the Chesapeake Bay. Pages 83-98 in M. Haire, and E. C. Krome, ed. Perspectives on the Chesapeake Bay, 1990. Chesapeake Research Consortium, Inc., Gloucester Point, VA.
192. Cairns, J., Jr. and J. R. Pratt. 1990. Biotic impoverishment: effects of anthropogenic stress. Pages 494-504 in G. M. Woodwell, ed. The Earth in Transition: Patterns and Processes of Biotic Impoverishment. Cambridge University Press, Cambridge, MA.
193. Cairns, J., Jr. and J. R. Pratt. 1990. Integrating aquatic ecosystem resource management. Pages 265-280 in R. McNeil, and J. E. Windor, ed. Innovations in River Basin Management. Canadian Water Resources Association, Cambridge, Ontario. 458 pp.
194. Cairns, J., Jr. and J. R. Pratt. 1990. Methods for studying dynamics of fresh water protozoan communities under natural and anthropogenic stress. In W. Foissner, ed. Symposium: Dynamics of Ecology of Free-Living Protozoa. Zool. Sci. 7(Supplement):155-165.
195. Atkinson, R. B., J. Cairns, Jr., B. Wallace, and P. E. Perry. 1991. Ecological risk assessment for highways in the Chesapeake Bay watershed. Pages 673-680 in J. A. Mihursky and A. Chaney, ed. New Perspectives in the Chesapeake System: A Research and Management Partnership, No. 137. Chesapeake Bay Consortium, Solomons, MD.
196. Cairns, J., Jr. 1991. Improving environmental protection. Pages 1-12 in N. K. Shastree, ed. Current Trends in Limnology, Vol. I. Narendra Publishing House, New Delhi, India.
197. Cairns, J., Jr. 1991. The need for integrated environmental systems management. Pages 5-19 in J. Cairns, Jr. and T. V. Crawford, ed. Integrated Environmental Management. Lewis Publishers, Inc., Chelsea, MI.
198. Cairns, J., Jr. 1991. The prediction, validation, monitoring and mitigation of anthropogenic effects upon natural systems. Pages 141-153 in R. C. Dalela (ed.), Environmental Impact on Biosystems. Pragati Press, Muzaffarnager, India.
199. Cairns, J., Jr. 1991. Saving endangered species. Pages 623-629 in K. Terwilliger, coordinator. Symposium on Virginia's Endangered Species. McDonald and Woodward Publishing Company, Blacksburg, VA.
200. Holl, K. D. and J. Cairns, Jr. 1991. Reclaimed coal surface mined sites as diurnal Lepidopteran habitat: A preliminary report. Pages 87-90 in 1991 Powell River Project Symposium and Progress Reports. Clinch Valley College, Wise, VA.
201. Orvos, D. R. and J. Cairns, Jr. 1991. Chesapeake Bay risk assessment. Pages 29-32 in J. A. Mihursky and A. Chaney, ed. New Perspectives in the Chesapeake System: A Research and Management Partnership, No. 137. Chesapeake Bay Consortium, Solomons, MD.

202. Orvos, D. R. and J. Cairns, Jr. 1991. Ecological risk assessment for the Chesapeake Bay. Pages 681-685 in J. A. Mihursky and A. Chaney, ed. New Perspectives in the Chesapeake System: A Research and Management Partnership, No. 137. Chesapeake Bay Consortium, Solomons, MD.
203. Smith, E. P., D. R. Orvos, and J. Cairns, Jr. 1991. Comments and concerns in using the BACI model for impact assessment. Pages 153-157 in Proceedings of the Section on Statistics and the Environment, American Statistical Association, Alexandria, VA.
204. Atkinson, R. B. and J. Cairns, Jr. 1992. Ecological risks of highways. Pages 237-262 in J. Cairns, Jr., D. R. Orvos, and B. R. Niederlehner, ed. Predicting Ecosystem Risk. Princeton Scientific Publishing Co., Inc., Princeton, NJ.
205. Cairns, J., Jr. 1992. Keynote address -- Land restoration: Where do we go from here? Pages 1-13 in T. Younos, P. Diplas, and S. Mostaghimi, ed. Land Reclamation: Advances in Research and Technology. American Society of Agricultural Engineers, St. Joseph, MI.
206. Cairns, J., Jr. 1992. Monitoring for global change. Pages 63-75 in J. Cairns, Jr., D. R. Orvos, and B. R. Niederlehner, ed. Predicting Ecosystem Risk. Princeton Scientific Publishing Co., Inc., Princeton, NJ.
207. Cairns, J., Jr. and B. R. Niederlehner. 1992. Predicting ecosystem risk: Genesis and future need. Pages 327-343 in J. Cairns, Jr., D. R. Orvos, and B. R. Niederlehner, ed. Predicting Ecosystem Risk. Princeton Scientific Publishing Co., Inc., Princeton, NJ.
208. Cairns, J., Jr., B. R. Niederlehner, and E. P. Smith. 1992. The emergence of functional attributes as end points in ecotoxicology. Pages 111-128 in G. A. Burton, Jr., ed. Sediment Toxicity Assessment. Lewis Publishers, Inc., Boca Raton, FL.
209. Pratt, J. R. and J. Cairns, Jr. 1992. Ecological risks associated with the extinction of species. Pages 93-117 in J. Cairns, Jr., B. R. Niederlehner, and D. R. Orvos, ed. Predicting Ecosystem Risk. Princeton Scientific Publishing Co., Inc., Princeton, NJ.
210. Atkinson, R. B. and J. Cairns, Jr. 1993. Constructed wetland potential for performing wetland functions dependent on anaerobic soil conditions. Pages 15-30 in F. J. Webb, ed. Proceedings of the 20th Annual Conference on Wetlands Restoration and Creation. Hillsborough Community College, Plant City, FL.
211. Atkinson, R. B., J. Cairns, Jr., D. H. Jones, G. B. Noe, and R. N. Brent. 1993. Ecological applications to enhance surface mine reclamation: Some recommendations. Pages 46-50 in Powell River Project Symposium and Progress Reports. Clinch Valley College, Wise, VA.
212. Cairns, J., Jr. 1993. Ecological restoration: Replenishing our national and global ecological capital. Pages 193-208 in D. A. Saunders, R. J. Hobbs, and P. R. Ehrlich, ed., Nature Conservation 3: Reconstruction of Fragmented Ecosystems, Global and Regional Perspectives. Surrey Beatty & Sons Pty Limited, Chipping Norton, Australia.
213. Cairns, J., Jr. 1993. The intellectual electric fence. Pages 57-60 in B. Wallace, J. Cairns, Jr., and P. A. Distler, ed. Environmental Literacy and Beyond, President's Symposium Volume V. Virginia Polytechnic Institute and State University, Blacksburg, VA.
214. Cairns, J., Jr. and P. V. McCormick. 1993. Protists as indicators of water quality in marine environments. Pages 627-638 in M. Corn, ed. Handbook of Hazardous Materials. Academic Press, Inc., San Diego, CA.
215. Cairns, J., Jr. and J. R. Pratt. 1993. A history of biological monitoring using benthic macroinvertebrates. Pages 10-27 in D. M. Rosenberg and V. H. Resh, ed. Freshwater Biomonitoring and Benthic Macroinvertebrates. Chapman and Hall, New York.
216. Holl, K. D. and J. Cairns, Jr. 1993. Diurnal lepidopteran communities reclaimed surface mines. Pages 16-20 in Powell River Project Symposium and Progress Reports. Clinch Valley College, Wise, VA.
217. Atkinson, R. B. and J. Cairns, Jr. 1994. Wetlands in the post mining landscape, 1993 progress report. Pages 20-24 in Powell River Project Research and Education Program Reports. Virginia Polytechnic Institute and State University, Blacksburg, VA.

218. Atkinson, R. B. and J. Cairns, Jr. 1994. Wetlands on golf courses: Opportunities and concerns. Page 21 in J. R. Hall, III, W. D. McKissack, and L. Diacont, ed. Proceedings of the 34th Virginia Turf and Landscape Conference and Trade Show. Virginia Cooperative Extension, Virginia Polytechnic Institute and State University, Blacksburg, VA.
219. Cairns, J., Jr. 1994. The current state of watersheds in the United States: Ecological and institution concerns. Pages 11-17 in Watershed '93: A National Conference on Watershed Management, EPA 840-R-94-002. U.S. Environmental Protection Agency, Washington, DC.
220. Cairns, J., Jr. 1994. Ecotoxicology. Pages 257-258 in W. P. Cunningham, T. Bell, T. H. Cooper, E. Gorham, M. T. Hepworth, and A. A. Marcus, ed. Environmental Encyclopedia, 1st Edition. Gale Research Inc., Detroit, MI.
221. Cairns, J., Jr. 1994. Restoration ecology. Pages 703-705 in W. P. Cunningham, T. Bell, J. H. Cooper, E. Gorham, M. T. Hepworth, and A. A. Marcus, ed. Environmental Encyclopedia, 1st Edition. Gale Research Inc., Detroit, MI.
222. Cairns, J., Jr. 1994. Restoration ecology. Pages 609-611 in R. A. Eblen and W. R. Eblen, ed. The Encyclopedia of the Environment. Houghton Mifflin Company, Boston, MA.
223. Cairns, J., Jr. 1994. Technology and biodiversity conservation: Are they incompatible? Pages 327-338 in K. C. Kim and R. D. Weaver, ed. Biodiversity and Landscapes: A Paradox of Humanity. Cambridge University Press, New York.
224. Cairns, J., Jr. and R. B. Atkinson. 1994. Constructing ecosystems and determining their connectivity to the larger ecological landscape. Pages 111-119 in R. E. Hester and R. M. Harrison, Ed. Mining and Its Environmental Impact, Vol. 1 of Issues in Environmental Science and Technology. Royal Society of Chemistry, Cambridge, United Kingdom.
225. Cairns, J., Jr. and D. S. Cherry. 1993. Freshwater multi-species test systems. Pages 101-116 in P. Calow, ed. Handbook of Ecotoxicology. Blackwell Scientific Publications, Inc., London.
226. Cairns, J., Jr. and B. R. Niederlehner. 1994. Indicator species. Page 359 in R. A. Eblen and W. R. Eblen, ed. The Encyclopedia of the Environment. Houghton Mifflin Company, Boston, MA.
227. Cairns, J., Jr. and B. R. Niederlehner. 1994. Risk analysis. Pages 710-711 in W. P. Cunningham, T. Bell, T. H. Cooper, E. Gorham, M. T. Hepworth, and A. A. Marcus, ed. Environmental Encyclopedia, 1st Edition. Gale Research Inc., Detroit, MI.
228. Cairns, J., Jr. and E. P. Smith. 1994. The statistical validity of biomonitoring data. Pages 49-68 in S. L. Loeb and A. Spacie, ed. Biological Monitoring of Aquatic Ecosystems. Lewis Publishers, Chelsea, MI.
229. Cairns, J., Jr., P. V. McCormick, and B. R. Niederlehner. 1994. Bioassay and field assessment of pollutant effects. Pages 267-282 in L. C. Rai, J. P. Gaur, and C. J. Soeder, ed. Algae and Water Pollution. E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart.
230. Cherry, D. S., L. G. Rutherford, M. G. Dobbs, C. E. Zipper, and J. Cairns, Jr. 1994. Heavy metal impacts into stream and river ecosystems by abandoned mined lands, Power River, Virginia. Pages 60-79 in Powell River Project Research and Education Program Reports. Virginia Polytechnic Institute and State University, Blacksburg, VA.
231. Jones, D. H., R. B. Atkinson, and J. Cairns, Jr. 1994. Macroinvertebrates of the Powell River Project. Pages 25-32 in Powell River Project Research and Education Program Reports. Virginia Polytechnic Institute and State University, Blacksburg, VA.
232. Sabre, M., K. D. Holl, and J. Cairns, Jr. 1994. Wild flower establishment on reclaimed mine sites. Pages 17-19 in Powell River Project Research and Education Program Reports. Virginia Polytechnic Institute and State University, Blacksburg, VA.

233. Atkinson, R. B., D. H. Jones, and J. Cairns, Jr. 1995. Ecological engineering considerations in constructing wetlands for surface mine reclamation. Pages 145-149 in J. C. Fischenich, C. M. Lloyd, and M. R. Palermo, ed. Proceedings: National Wetlands Engineering Workshop, Tech. Rep. WRP-RE-8. U.S. Army Corps of Engineers, Vicksburg, MS.
234. Cairns, J., Jr. 1995. Foreword to Section D: Research topics in restoration ecology. Pages 169-172 in J. M. Gunn, ed. Restoration and Recovery of an Industrial Region. Springer-Verlag, New York.
235. Cairns, J., Jr. 1995. Future trends in ecotoxicology. Pages 217-222 in J. Cairns, Jr. and B. R. Niederlehner. Ecological Toxicity Testing: Scale, Complexity, and Relevance. Lewis Publishers, Inc., Chelsea, MI.
236. Cairns, J., Jr. 1995. The genesis of ecotoxicology. Pages 1-10 in J. Cairns, Jr. and B. R. Niederlehner, ed. Ecological Toxicity Testing: Scale, Complexity, and Relevance. Lewis Publishers, Inc., Chelsea, MI.
237. Cairns, J., Jr. 1995. Restoration ecology. Pages 223-235 in W. A. Nierenberg, ed., Encyclopedia of Environmental Biology, Vol. 3. Academic Press, Inc., San Diego, CA.
238. Cairns, J., Jr. 1995. Restoration ecology and ecotoxicology. Pages 717-731 In D. J. Hoffman, B. A. Rattner, A. G. Burton, Jr., and J. Cairns, Jr., ed., Handbook of Ecotoxicology. Lewis Publishers, Inc., Boca Raton, FL.
239. Cairns, Jr., Jr. 1995. Restoration ecology: Protecting our national and global life support systems. Pages 1-12 in J. Cairns, Jr., ed. Rehabilitating Damaged Ecosystems, Second Edition. Lewis Publishers, Inc., Chelsea, MI.
240. Cairns, J., Jr. 1995. The status of the theoretical and applied science of restoration ecology. Pages 76-84 in Readings from the Environmental Professional: Natural Resources, J. Lemons, ed. Blackwell Science, Inc., Cambridge, MA.
241. Cairns, J., Jr. 1995. A tribute to my graduate students present and past. Pages 265-268 in J. R. Pratt, N. Bowers, and J. R. Stauffer, ed. Making Environment Science: A Festschrift in Honor of John Cairns, Jr. Ecoprint, Portland, OR.
242. Cairns, J., Jr. 1995. Urban runoff in an integrated landscape context. Pages 9-20 in E. E. Herricks, ed. Stormwater Runoff and Receiving Systems: Impact, Monitoring, and Assessment. Lewis Publishers, Boca Raton, FL.
243. Cairns, J., Jr. and K. L. Dickson. 1995. Individual rights versus the rights of future generations: Ecological resource distribution over large temporal and spatial scales. Pages 175-187 in S. R. Ingman, X. Pei, C. D. Ekstrom, H. J. Friedsam, and K. R. Bartlett, ed. An Aging Population, An Aging Planet, and a Sustainable Future. Texas Institute for Research and Education on Aging, Denton, TX.
244. Cairns, J., Jr. and P. V. McCormick. 1995. Developing an ecosystem-based capability for ecological risk assessments. Pages 25-35 in Readings from the Environmental Professional: Risk Assessment, J. Lemons, ed. Blackwell Science, Inc., Cambridge, MA.
245. Cairns, J., Jr. and B. R. Niederlehner. 1995. Chemical versus biological pollution monitoring. Pages 7-25 in B. C. Rana, ed., Pollution and Biomonitoring. Tata McGraw-Hill Publishing Co., Ltd., New Delhi, India. 452 pp.
246. Cairns, J., Jr. and B. R. Niederlehner. 1995. Ecological function and resilience: Neglected criteria for environmental impact assessment and ecological risk analysis. Pages 110-118 in Readings from the Environmental Professional: National Environmental Policy Act, J. Lemons, ed. Blackwell Science, Inc., Cambridge, MA.
247. Cairns, J., Jr. and B. R. Niederlehner. 1995. Predictive ecotoxicology. Pages 667-680 in D. J. Hoffman, B. A. Rattner, A. G. Burton, Jr., and J. Cairns, Jr., ed., Handbook of Ecotoxicology. Lewis Publishers, Inc., Boca Raton, FL.
248. Cairns, J., Jr. and J. R. Pratt. 1995. The relationship between ecosystem health and delivery of ecosystem services. Pages 63-75 in D. J. Rapport, C. L. Gaudet, and P. Calow, ed. Evaluating and Monitoring the Health of Large-Scale Ecosystems, NATO ASI Series, Vol. 128. Springer-Verlag, Germany.

249. Cairns, J., Jr., B. R. Niederlehner, and E. P. Smith. 1995. Ecosystem effects: Functional end points. Pages 589-607 in G. M. Rand, ed., Fundamentals of Aquatic Toxicology: Effects, Environmental Fate and Risk Assessment, 2nd Ed. Taylor & Francis, Washington, DC.
250. Cherry, D. S., J. H. Van Hassel, M. M. Yeager, and J. Cairns, Jr. 1995. Avoidance of twenty-four fish species to thermally influenced chlorinated water. Pages 215-238 in J. R. Pratt, N. Bowers, and J. R. Stauffer, ed. Making Environment Science: A Festschrift in Honor of John Cairns, Jr. Ecoprint, Portland, OR.
251. Holl, K. D. and J. Cairns, Jr. 1995. Landscape indicators in ecotoxicology. Pages 185-197 in D. J. Hoffman, B. A. Rattner, A. G. Burton, Jr., and J. Cairns, Jr., ed., Handbook of Ecotoxicology. Lewis Publishers, Inc., Boca Raton, FL.
252. Niederlehner, B. R. and J. Cairns, Jr. 1995. Naturally derived microbial communities as receptors in toxicity tests. Pages 123-147 in J. Cairns, Jr. and B. R. Niederlehner, ed. Ecological Toxicity Testing: Scale, Complexity, and Relevance. Lewis Publishers, Inc., Chelsea, MI.
253. Atkinson, R. B., W. L. Daniels, and J. Cairns, Jr. 1996. Ontogeny of accidental wetlands and hydric soil development in surface mined landscapes. Page 516-528 in W. L. Daniels, J. A. Burger, and C. E. Zipper, ed. Proceedings, 1996 Annual Meeting of the American Society for Surface Mining Reclamation, Knoxville, TN, May 18-23. Virginia Tech Research Division, Powell River Project, Blacksburg, VA.
254. Cairns, J., Jr. 1996. Determining the balance between technological and ecosystem services. Pages 13-30 in P. C. Schulze, ed. Engineering Within Ecological Constraints. National Academy Press, Washington, DC.
255. Cairns, J., Jr. 1996. Interfacing product life cycles and ecological assimilative capacity. Pages 115-123 in R. T. Di Giulio and E. Monosson, ed. Interconnections Between Human and Ecosystem Health. Chapman & Hall, London.
256. Cairns, J., Jr. and J. Heckman. 1996. Restoration ecology: The state of an emerging field. Pages 167-187 in R. H. Socolow, ed. Annual Review of Energy and the Environment, Vol. 21. Annual Reviews, Inc., Palo Alto, CA.
257. Cairns, J., Jr. and E. P. Smith. 1996. Uncertainties associated with extrapolating from toxicologic responses in laboratory systems to the responses of natural systems. Pages 188-205 in J. Lemons, ed. Scientific Uncertainty and Environmental Problem Solving. Blackwell Science, Cambridge, MA.
258. Heckman, J. R., K. D. Holl, M. Sabre, and J. Cairns, Jr. 1996. The potential for using wildflower species to increase natural habitat in contour surface mine reclamation. Pages 453-461 in W. L. Daniels, J. A. Burger, and C. E. Zipper, ed. Proceedings, 1996 Annual Meeting of the American Society for Surface Mining Reclamation, Knoxville, TN, May 18-23. Virginia Tech Research Division, Powell River Project, Blacksburg, VA.
259. Pratt, J. R. and J. Cairns, Jr. 1996. Ecotoxicology and the redundancy problem: Understanding effects on community structure and function. Pages 347-370 in M. C. Newman and C. H. Jago, ed. Ecotoxicology: A Hierarchical Treatment. Lewis Publishers, Boca Raton, FL.
260. Cairns, J., Jr. 1997. Eco-societal restoration: Creating a harmonious future between human society and natural systems. Pages 487-499 in J. E. Williams, C. A. Wood, and M. P. Dombek, ed. Watershed Restoration: Principles and Practices. American Fisheries Society, Bethesda, MD.
261. McCormick, P. V. and Cairns, J., Jr. 1997. Algal indicators of aquatic ecosystem condition and change. Pages 177-208 in W. Wang, W. R. Lower, J. W. Gorsuch, and J. S. Hughes, ed., Plants for Environmental Studies. Lewis Publishers, Boca Raton, FL.
262. Atkinson, R. B., W. L. Daniels, and J. Cairns, Jr. 1998. Hydric soil development in depressional wetlands: A Case study from surface mined landscapes. Pages 182-197 in S. K. Majumdar, E. W. Miller, and F. J. Brenner, ed., Ecology of Wetlands and Associated Systems. Pennsylvania Academy of Science, Easton, PA.
263. Cairns, J., Jr. 1998. Aquatic toxicology. Pages 55-56 in W. P. Cunningham, T. H. Cooper, E. Gorham, and M. T. Hepworth, ed., Environmental Encyclopedia, Second Edition. Gale Research, Detroit, MI.

264. Cairns, J., Jr. 1998. A close linkage between the fate of natural ecosystems and the long-term survival of human society. Page 661 in G. T. Miller, Jr., ed., Living in the Environment: Principles, Connections, and Solutions, 10th ed. Wadsworth Publishing Company, Belmont, CA.
265. Cairns, J., Jr. 1998. Ecological restoration. Pages 217-219 in P. Calow, ed., The Encyclopedia of Ecology & Environmental Management. Blackwell Science, Oxford.
266. Cairns, J., Jr. 1998. Ecological risk assessment: A predictive approach to assessing ecosystem health. Pages 216-228 in D. Rapport, R. Costanza, P. R. Epstein, C. Gaudet, and R. Levins, ed. Ecosystem Health. Blackwell Science, Malden, MA.
267. Cairns, J., Jr. 1998. Eco-societal restoration: Rehabilitating human society's life support system. Pages 1-23 in B. C. Rana, ed. Damaged Ecosystems and Restoration. World Scientific Publishing Co., Singapore.
268. Cairns, J., Jr. 1998. Endpoints and thresholds in ecotoxicology. Pages 751-768 in G. Schuurmann and B. Markert, ed. Ecotoxicology: Ecological Fundamentals, Chemical Exposure, and Biological Effects. John Wiley & Sons, New York.
269. Cairns, J., Jr. 1998. Foreword. Pages xi-xiii in W. Gibbons and A. R. Gibbons, Ecoreviews: Snakes, Snails, and Environmental Tales. The University of Alabama Press, Tuscaloosa, AL.
270. Cairns, J., Jr. 1998. Myths impeding the utilization of infusoria in ecotoxicological toxicity testing. Pages 12-21 in Infusoria in Bioassays. Saint-Petersburg State Institute of Technology, Saint-Petersburg, Russia.
271. Cairns, J., Jr. 1998. Protecting the environment: The role of ecotoxicology. Pages 61-78 in R. Mathur, A. Mathur, and S. Sharma, ed., Latest Advances in Environmental Conservation. Scientific Publishers, Jodhpur, India.
272. Cairns, J., Jr. 1998. Reclamation. Pages 621-623 in P. Calow, ed., The Encyclopedia of Ecology & Environmental Management. Blackwell Science, Oxford.
273. Cairns, J., Jr. and D. S. Cherry. 1998. Fresh-water multi-species tests systems. Pages 101-116 in P. Calow, ed. Handbook of Ecotoxicology. Blackwell Science, Oxford. Paperback reissue from 1994.
274. Cairns, J., Jr., B. R. Niederlehner, and J. R. Bidwell. 1998. Ecological toxicity testing. Pages 1482-1497 in R. A. Meyers, ed., Encyclopedia of Environmental Analysis and Remediation. John Wiley & Sons, Inc., New York.
275. Cairns, J., Jr., B. R. Niederlehner, and E. P. Smith. 1998. Correspondence of a microscale toxicity test to responses to toxicants in natural systems. Pages 539-547 in P. G. Wells, K. Lee, C. Blaise, and J. Gauthier, ed., Microscale Testing in Aquatic Toxicology: Advances, Techniques, and Practice. CRC Press, Boca Raton, FL.
276. Heckman, J. R. and J. Cairns, Jr. 1998. Ecosystem restoration: A new perspective for sustainable use of the planet. Pages 69-76 in B. C. Rana, ed. Damaged Ecosystems and Restoration. World Scientific Publishing Co., Singapore.
277. Cairns, J., Jr. 1999. Can human society exist without ecological restoration? Pages 20-31 in Proceedings from the 1998 Central Appalachian Ecological Integrity Conference. Heartwood, Elkins, WV.
278. Cairns, J., Jr. 1999. New Preface to the Japanese edition of Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy. Gihodo Publishing Co., Tokyo. (J. Cairns, Jr., Committee Chair of this National Research Council volume).
279. Cairns, J., Jr. 2000. Commentary: Equity, fairness, and the development of a sustainability ethos. Pages 58-66 in Gospodarka Przestrzenna III (K. R. Mazurski). Oficyna Wydawnicza "Sudety," Wroclaw.
280. Cairns, J., Jr. 2000. The genesis and future of the field of ecotoxicology. Pages 1-13 in K. M. Scow, G. Fogg, D. Hinton, and M. Johnson, ed. Integrated Assessment of Ecosystem Health. Lewis Publishers, Boca Raton, FL.

281. Cairns, J., Jr. 2000. Invited Plenary Address. The quest for immortality on an unsustainable planet. Pages 3 - 11 in V. Burdyuzha and G. Khozin, ed., The Future of the Universe and the Future of Our Civilization, World Scientific Publishing Co., Rivers Edge, NJ.
282. Cairns, J., Jr. 2001. Stress, environmental. Pages 515-522 in S. Levin, ed., Encyclopedia of Biodiversity, Vol. 5. Academic Press, New York.
283. Cairns, J., Jr. 2001. Restoration ecology. Pages 1086-1089 in R. A. Eblen and W. .Eblen, ed., The Environment Encyclopedia, Vol. 4. Marshall Cavendish Corp., Tarrytown, NY.
284. Cairns, J., Jr. 2002. Foreword. Pages xiii-xiv in Davy and M. R. Perrow, ed., Handbook of Ecological Restoration. Cambridge University Press, Cambridge, UK.
285. Cairns, J., Jr. 2002. Interactions between scientists and managers/policy makers. Pages 426-436 in G. Tripathi and Y. C. Tripathi, ed., Biological and Biotechnical Resources. Campus Books, New Delhi, India.
286. Cairns, J., Jr. 2002. Making peace with the biosphere. Pages 1-10 in G. Tripathi and Y. C. Tripathi, ed., Bioresource and Environment. Campus Books, New Delhi, India.
287. Cairns, J., Jr. 2002. Monitoring the restoration of natural capital: Water and land ecosystems. Pages 1-32 in T. Younos, ed., Advances in Water Monitoring Research. Water Resources Publications, LLC, Highlands Ranch, CO.
288. Cairns, J., Jr. 2002. Probable future trends in the field of ecotoxicology. Proceedings, First Asian Conference on Ecotoxicology and Environmental Safety. Chinese Academy of Sciences, Wuhan, China. 14 pp.
289. Cairns, J., Jr. 2002. Rationale for restoration. Pages 10-23 in A. J. Davy and M. R. Perrow, ed., u. Cambridge University Press, Cambridge, UK.
290. Holl, K. D. and J. Cairns, Jr. 2002. Monitoring and appraisal. Pages 411-432 in A. J. Davy and M. R. Perrow, ed., Handbook of Ecological Restoration, Vol. 1: Principles of Restoration. Cambridge University Press, Cambridge, UK.
291. Cairns, J., Jr. 2003. Biotic community response to stress. Pages 13-21 in T. Simon, ed., Biological Response Signatures: Indicator Patterns Using Aquatic Communities. CRC Press, Boca Raton, FL.
292. Cairns, J., Jr. 2003. Repairing the country's ecological infrastructure: The cumulative impact of small decisions. Pages 31-41 in R. B. Atkinson, D. A. Brown and R. T. Belcher, ed. Atlantic White Cedar Management and Restoration Ecology Symposium, May 31-June 2, 2000. Christopher Newport University, Newport News, VA.
293. Cairns, J., Jr. 2003. Restoration ecology and ecotoxicology. Pages 1015-1019 in D. Hoffman, B. A. Rattner, G. A. Burton and J. Cairns, Jr., ed., Handbook of Ecotoxicology, Second Edition. CRC Press, Boca Raton, FL.
294. Cairns, J., Jr. 2003. The role of ecotoxicology in industrial ecology and natural capitalism. Pages 1149-1172 in D. Hoffman, B. A. Rattner, G. A. Burton and J. Cairns, Jr., ed., Handbook of Ecotoxicology, Second Edition. Lewis Publishers/CRC Press, Boca Raton, FL.
295. Cairns, J., Jr. 2003. Vignette 1.1: The emergence and future of ecotoxicology. Pages 8-11 in M. C. Newman and M. A. Unger, ed., Fundamentals of Ecotoxicology, Second Edition. Lewis Publishers/CRC Press, Boca Raton, FL.
296. Cairns, J., Jr. and B. R. Niederlehner. 2003. Predictive ecotoxicology. Pages 911-924 in D. Hoffman, B. A. Rattner, G. A. Burton and J. Cairns, Jr., ed., Handbook of Ecotoxicology, Second Edition. Lewis Publishers/CRC Press, Boca Raton, FL.
297. Holl, K. D. and J. Cairns, Jr. 2003. Landscape indicators in ecotoxicology. Pages 217-230 in D. Hoffman, B. A. Rattner, G. A. Burton and J. Cairns, Jr., ed., Handbook of Ecotoxicology, Second Edition. Lewis Publishers/CRC Press, Boca Raton, FL.
298. Cairns, J., Jr. 2005. Foreword. Pages ix-x in M. V. Reddy, ed., Restoration and Management of Tropical Eutrophic Lakes. Science Publishers, Inc., Enfield, New Hampshire.

299. Cairns, J., Jr. 2005. Microscale test relationships to responses to toxicants in natural systems. Pages 379-380 in J. H. Lehr, J. Keeley, and J. Lehr, ed., *Water Encyclopedia: Water Quality and Resource Development, Vol. 2*. Wiley-Interscience, New York.
300. Cairns, J., Jr. 2005. War and sustainability. Page 55 in Preparing for Peace. Westmorland General Meeting, Society of Friends, London, England.
301. Cairns, J., Jr. 2006. Ecological integrity. Pages 78-85 in A. L. Bhatia, ed. Sustainable Environment and Impact Assessment. Pointers Publishers, Jaipur, India.
302. Cairns, J., Jr. 2006. Ecological restoration. Pages 55-56 in R. Abramson and J. Haskell, ed. Encyclopedia of Appalachia. University of Tennessee Press, Knoxville, TN.
303. Cairns, J., Jr. 2006. Human alteration of evolutionary processes. Pages 97-104 in V. Burdyuzha, ed., The Future of Life and the Future of Our Civilization. Springer, The Netherlands.
<http://www.archive.future25.org/Symposium05>
304. Cairns, J., Jr. 2006. Humankind's security and shift to sustainable practices. Pages 66-77 in A. L. Bhatia, ed. Sustainable Environment and Impact Assessment. Pointers Publishers, Jaipur, India.
305. Cairns, J., Jr. 2006. Sustainability and the global commons. Pages 42-52 in A. L. Bhatia, ed. Sustainable Environment and Impact Assessment. Pointers Publishers, Jaipur, India.
306. Cairns, J., Jr. 2007. Postponing the quest for sustainability: Survival first – then sustainability. Chapter 25 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 3 July, www.johncairns.net.
307. Cairns, J., Jr. 2007. My first full time job. Chapter 26 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 5 October, www.johncairns.net.
308. Cairns, J., Jr. 2007. My first experience in a research laboratory. Chapter 27 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 29 November, www.johncairns.net.
309. Cairns, J., Jr. 2008. Crawling over ice-covered snow with Jeannie. Chapter 28 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 9 January, www.johncairns.net.
310. Cairns, J., Jr. 2008. The Cairns family begins three decades at field stations. Chapter 29 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 16 January, www.johncairns.net.
311. Cairns, J., Jr. 2008. The University of Michigan Biological Station (UMBS). Chapter 30 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 7 February, www.johncairns.net.
312. Cairns, J., Jr. 2008. The most important day of my life. Chapter 31 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 4 August, www.johncairns.net.
313. Cairns, J., Jr. 2008. Co-evolving with Jeannie. Chapter 32 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. www.johncairns.net.
314. Cairns, J., Jr. 2009. Becoming a risk taker. Chapter 33 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 24 April, www.johncairns.net.
315. Cairns, J., Jr. 2009. The ecosystems in my life. Chapter 34 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 28 May, www.johncairns.net.
316. Cairns, J., Jr. 2009. The influence of contaminated sediments on sustainable use of the planet. Pages 1-19 in T. Kassim and D. Barcelo, ed. The Handbook of Environmental Chemistry, Vol. 5. Part I: Contaminated Sediments. Springer-Verlag, Berlin/Heidelberg, Germany. DOI 10.1007/698_5_110. Online 20 May.
317. Cairns, J., Jr. 2009. Putting bioterrorism in perspective. Pages 1-8 in A. L. Bhatia and S. K. Kulshrestha, ed., Bioterrorism and Biological Warfare. Pointer Publishers, Jaipur, India.

318. Cairns, J., Jr. 2009. Terrorist attacks vs cultural risks. Pages 321-328 in A. L. Bhatia and S. K. Kulshrestha, ed., Bioterrorism and Biological Warfare. Pointer Publishers, Jaipur, India.
319. Cairns, J., Jr. 2009. Transcendental fly fishing for trout. Chapter 35 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 11 August, www.johncairns.net.
320. Cairns, J., Jr. 2009. Six-word stories. Chapter 36 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 12 August, www.johncairns.net.
321. Cairns, J., Jr. 2009. Our World War II low-budget marriage and honeymoon. Chapter 37 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 11 December www.johncairns.net.
322. Cairns, J., Jr. 2009. My boyhood home. Chapter 38 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 17 December, www.johncairns.net.
323. Cairns, J., Jr. 2010. Greeting ritual for advanced Alzheimers. Chapter 39 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 4 February, www.johncairns.net.
324. Cairns, J., Jr. 2010. Changes in public attitude toward science during my lifetime. Chapter 40 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 22 April, www.johncairns.net.
325. Cairns, J., Jr. 2010. Growing up in a small factory town during the Great Depression. Chapter 41 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 14 July, www.johncairns.net.
326. Cairns, J., Jr. 2010. Closing a lifetime of doors. Chapter 42 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 20 Sept, www.johncairns.net.
327. Cairns, J., Jr. 2010. Living with lymphedema. Chapter 43 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. 4 Nov, www.johncairns.net.
328. Cairns, J., Jr. 2010. The Catherwood Amazon River Survey: Non-scientific memories from a distant past. Chapter 44 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. www.johncairns.net.
329. Cairns, J., Jr. 2010. Crawling over ice-covered snow with Jeannie. Pages 72-74 in Tales from the Hearth, Pocahontas Press, Blacksburg, VA.
330. Cairns, J., Jr. 2010. Greeting ritual for advanced Alzheimers. Pages 95-98 in Tales from the Hearth, Pocahontas Press, Blacksburg, VA.
331. Cairns, J., Jr. 2010. The most important day of my life. Pages 58-62 in Tales from the Hearth, Pocahontas Press, Blacksburg, VA.
332. Cairns, J., Jr. 2010. My boyhood home. Pages 44-48 in Tales from the Hearth, Pocahontas Press, Blacksburg, VA.
333. Cairns, J., Jr. 2010. Vignette 1.1: The emergence and future of ecotoxicology. Pages 13-16 in M. C. Newman ed., Fundamentals of Ecotoxicology, Third Edition. CRC Press, Taylor & Francis Group, Boca Raton, FL.
334. Cairns, J., Jr. 2011. The long goodbye. Chapter 45 in J. Cairns, Jr., My Quest for Sustainable Use of the Planet. www.johncairns.net.
335. Cairns, J., Jr. 2012. Becoming a risk-taker. Pages 65-67 in Tales from the Hearth, Vol. 2. Warm Hearth Writers, Blacksburg, VA.
336. Cairns, J., Jr. 2012. Canaries of the stream. Pages 132-136 in A River Again: the Story of the Schuylkill River Project. C. Towne, ed. Delaware Riverkeeper Network Press, Bristol, PA.
337. Cairns, J., Jr. 2012. A Colorado summer. Pages 15-20 in Tales from the Hearth, Vol. 2. Warm Hearth Writers, Blacksburg, VA.

338. Cairns, J., Jr. 2012. A major defining moment in my professional career. Pages 334-335 in A Glorious Enterprise: The Academy of Natural Sciences of Philadelphia and the Making of American Science. R. M. Peck and P. T. Stroud, ed. University of Pennsylvania Press, Philadelphia, PA.
339. Cairns, J., Jr. 2013. Stress, environmental. Pages 39-44, Chapter 7 in Encyclopedia of Biodiversity, 2nd Edition, S. Levin, ed. Academic Press, San Diego, CA.
340. Cairns, J., Jr. In press. Vignette 1.1: the emergence and future of ecotoxicology. In Fundamentals of Ecotoxicology, 4th Ed. M. C. Newman, ed. Lewis Publishers, CRC Press, Boca Raton, FL.

JOURNAL ARTICLES

1. Cairns, J., Jr. 1948. A study of the effects of pollution upon the protozoan population of a stream. M.S. thesis, University of Pennsylvania, Philadelphia, PA.
2. Cairns, J., Jr. 1949. The free-living Protozoa of the Conestoga Creek Basin. Pages 1-110 in R. Patrick, and H. R. Roberts, ed. Biological Survey of the Conestoga Basin and Observations on the West Branch Brandywine Creek. Academy of Natural Sciences of Philadelphia, PA.
3. Cairns, J., Jr. 1953. Protozoan populations of the Savannah River. Pages 1-125 in A.E.C. report, Savannah River. Biological Survey, June, 1951 - May, 1952. Academy of Natural Sciences of Philadelphia, PA.
4. Cairns, J., Jr. 1953. Transfaunation studies of the host-specificity of the enteric Protozoa of amphibia and various other vertebrates. Proc. Acad. Nat. Sci. Phila. 105:45-69.
5. Cairns, J., Jr. 1955. The effect of increased temperature upon aquatic organisms. Proc. 10th Ind. Waste Conf., Purdue Univ. Eng. Bull. 89:346-354.
6. Cairns, J., Jr. 1956. The effect of variation in the host diet upon Tritrichomonas augusta and T. batrachorum. Not. Nat. Acad. Nat. Sci. Phila. 292:1-4.
7. Cairns, J., Jr. 1956. Effects of heat on fish. Ind. Wastes 1(5):180-183.
8. Cairns, J., Jr. 1956. Effects of increased temperatures on aquatic organisms. Ind. Wastes 1(4):150-152.
9. Reimer, C. W., J. Cairns, Jr., and R. J. Benoit. 1956. Sacramento River Keswick Reservoir and Vicinity, Fall, 1956. Stream Survey Report for the State of California. Academy of Natural Sciences of Philadelphia, PA. 111 pp.
10. Cairns, J., Jr. 1957. Environment and time in fish toxicity. Ind. Wastes 2(1):1-5.
11. Cairns, J., Jr. and A. Scheier. 1957. The effects of periodic low oxygen upon the toxicity of various chemicals to aquatic organisms. Proc. 12th Ind. Waste Conf., Purdue Univ. Eng. Bull. 94:165-176.
12. Cairns, J., Jr. and A. Scheier. 1957. The effects of temperature and hardness of water upon the toxicity of zinc to the common bluegill (Lepomis macrochirus Raf.). Not. Nat. Acad. Nat. Sci. Phila. 299:1-12.
13. Cairns, J., Jr. and A. Scheier. 1958. The effects of temperature and hardness of water upon the toxicity of zinc to the pond snail, Physa heterostropha (Say). Not. Nat. Acad. Nat. Sci. Phila. 308:1-11.
14. Cairns, J., Jr. and A. Scheier. 1958. The relationship of bluegill sunfish body size to the acute toxicity of some common chemicals Ind. Wastes 3(5):126-129.
15. Cairns, J., Jr. and A. Scheier. 1959. The effects of temperature and hardness of water upon the toxicity of potassium dichromate to the common bluegill sunfish. Trans. Northeast Wildl. Conf. 1:86-98.
16. Cairns, J., Jr. and A. Scheier. 1959. The relationship of bluegill sunfish body size to tolerance for some common chemicals. Proc. 13th Ind. Waste Conf., Purdue Univ. Eng. Bull. 96:243-252.
17. Cairns, J., Jr. and A. Scheier. 1962. The effects of temperature and hardness of water upon the toxicity of naphthenic acids to the common bluegill (Lepomis macrochirus Raf.) and the pond snail (Physa heterostropha Say). Not. Nat. Acad. Nat. Sci. Phila. 353-11.
18. Cairns, J., Jr. and A. Scheier. 1963. The acute and chronic effects of standard sodium alkyl benzene sulfonate upon the pumpkinseed sunfish, Lepomis gibbosus (Linn.) and the bluegill sunfish (L. macrochirus Raf.) Proc. 17th Ind. Waste Conf., Purdue Univ. Eng. Bull. 112:14-28.
19. Cairns, J., Jr. and A. Scheier. 1963. Environmental effects upon cyanide toxicity to fish. Not. Nat. Acad. Nat. Sci. Phila. 361:1-11.

20. Cairns, J., Jr., A. Scheier, and N. E. Hess. 1963. The effects of alkyl benzene sulfonate on aquatic organisms. Pages 43-54 in Proc. Fourth Annual Symposium on Industrial Waste Control. The Johns Hopkins University and the State of Maryland.
21. Cairns, J., Jr. 1964. The chemical environment of common freshwater Protozoa. Not. Nat. Acad. Nat. Sci. Phila. 365:1-6.
22. Cairns, J., Jr. and A. Scheier. 1964. Blood corpuscle count, hemoglobin concentration, and oxygen consumption values for the pumpkinseed sunfish (Lepomis gibbous Linn.). Not. Nat. Acad. Nat. Sci. Phila. 366:1-4.
23. Cairns, J., Jr. and A. Scheier. 1964. The effect upon the pumpkinseed sunfish (Lepomis gibbous Linn.) of chronic exposure to lethal and sublethal concentrations of dieldrin. Not. Nat. Acad. Nat. Sci. Phila. 370:1-10.
24. Cairns, J., Jr. and A. Scheier. 1964. The effects of sublethal levels of zinc and high temperature upon the toxicity of a detergent to the sunfish (Lepomis gibbous Linn.). Not. Nat. Acad. Nat. Sci. Phila. 367:1-3.
25. Cairns, J., Jr., A. Scheier, and N. E. Hess. 1964. The effects of alkyl benzene sulfonate on aquatic organisms. Ind. Water Wastes 9(1):22-28.
26. Cairns, J., Jr. 1965. A biological yardstick for industrial pollution. Ind. Water Eng. 2(6):10-13, 30.
27. Cairns, J., Jr. 1965. Discussion of "Communications -- sound and unsound -- on problems of pollution." Assoc. Southeast. Biol. Bull. 12(4):85,87.
28. Cairns, J., Jr. 1965. The environmental requirements of freshwater Protozoa. Biological Problems in Water Pollution, Third Seminar, 1962, PHS Publ. No. 999-WP-25, pp. 48-52, Abst. pp. 385-386.
29. Cairns, J., Jr. 1965. Pollution's eternal triangle. Assoc. Southeast. Biol. Bull. 12(2):35-37.
30. Cairns, J., Jr. 1965. The Protozoa of the Conestoga basin. Not. Nat. Acad. Nat. Sci. Phila. 375:1-14.
31. Cairns, J., Jr., A. Scheier, and J. J. Loos. 1965. A comparison of the sensitivity to certain chemicals of adult zebra danios, Brachydanio rerio (Hamilton-Buchana) and zebra danio eggs with that of adult bluegill sunfish, Lepomis macrochirus Raf. Not. Nat. Acad. Nat. Sci. Phila. 381:1-9.
32. Cairns, J., Jr. 1966. Biological concepts and industrial waste disposal problems. Proc. 20th Ind. Waste Conf., Purdue Univ. Eng. Bull. Ext. Ser. 118:49-59.
33. Cairns, J., Jr. 1966. The Protozoa of the Potomac River from Point of Rocks to White Ferry. Not. Nat. Acad. Nat. Sci. Phila. 387:1-11. Plus 43 pages supporting data deposited as document No. 8902 with the AID Aux. Pub. Proj. Photodupl. Serv., Library of Congress.
34. Cairns, J., Jr. and J. J. Loos. 1966. Changes in guppy populations resulting from exposure to dieldrin. Prog. Fish-Cult. 28(4):220-226.
35. Cairns, J., Jr. and A. Scheier. 1966. The influence of exposure to ABS detergent upon the blood chloride regulation of the pumpkinseed. Prog. Fish-Cult. 28(3):128-132.
36. Cairns, J., Jr. and W. H. Yongue, Jr. 1966. A checklist of the fresh-water Protozoa of the Douglas Lake region, Michigan. Not. Nat. Acad. Nat. Sci. Phila. 383:1-10.
37. Foster, N. R., A. Scheier, and J. Cairns, Jr. 1966. Effects of ABS on feeding behavior of flagfish, Jordanella floridae. Trans. Am. Fish. Soc. 95(1):109-110.
38. Scheier, A. and J. Cairns, Jr. 1966. Persistence of gill damage in Lepomis gibbous following a brief exposure to alkyl benzene sulfonate. Not. Nat. Acad. Nat. Sci. Phila. 391:1-7.
39. Cairns, J., Jr. 1967. Don't be half safe - the current revolution in bioassay techniques. Proc. 21st Ind. Waste Conf., Purdue Univ. Eng. Bull. 121(1):559-567.
40. Cairns, J., Jr. 1967. Living with our natural water systems. Scientist and Citizen 9(2):28-33.

41. Cairns, J., Jr. 1967. Probable existence of synergistic interactions among different species of protozoans. Revista de Biologia 6(1-2):103-108.
42. Cairns, J., Jr. 1967. The relationship between national, state and regional water quality standards. Pages 13-14 in Proc. Am. Fish. Soc. 97th Annual Meeting.
43. Cairns, J., Jr. 1967. The use of quality control techniques in the management of aquatic ecosystems. Water Resour. Bull. 3(4):47-53.
44. Cairns, J., Jr. and J. J. Loos. 1967. Changed feeding rate of Brachydanio rerio (Hamilton-Buchana) resulting from exposure to sublethal concentrations of zinc, potassium dichromate, and alkyl benzene sulfonate detergent. Proc. PA. Acad. Sci. 40(1):10 (abstract); 40(2):47-52 (full paper).
45. Cairns, J., Jr., N. R. Foster, and J. J. Loos. 1967. Effects of sublethal concentrations of dieldrin on laboratory population of guppies Poecilia reticulata Peters. Proc. Acad. Nat. Phila. 119(3):75-91.
46. Benoit, R. J., J. Cairns, Jr., and C. W. Reimer. 1968. A limnological reconnaissance of an impoundment receiving heavy metals, with special emphasis on diatoms and fish. Proc. Reservoir Fishery Resources Symposium, Am. Fish. Soc. pp. 69-99.
47. Cairns, J., Jr. 1968. The Catherwood Peruvian-Amazon expedition. Revista de Biologia 6(1-2):234g-234p.
48. Cairns, J., Jr. 1968. The effects of dieldrin on diatoms. Mosq. News 28(2):177-179.
49. Cairns, J., Jr. 1968. Suspended solids standards for the protection of aquatic organisms. Proc. 22nd Ind. Waste Conf., Purdue Univ. Eng. Bull. 129(1):16-27.
50. Cairns, J., Jr. 1968. We're in hot water! Scientist and Citizen 10(8):187-198.
51. Cairns, J. and A. Scheier. 1968. A comparison of the toxicity of some common industrial waste components tested individually and combined. Prog. Fish-Cult. 30(1):3-8.
52. Cairns, J., Jr. and W. H. Yongue, Jr. 1968. The distribution of fresh-water Protozoa on a relatively homogeneous substrate. Hydrobiologia 31(1):65-72.
53. Cairns, J., Jr., D. W. Albaugh, F. Busey, and M. D. Chanay. 1968. The sequential comparison index - a simplified method for non-biologists to estimate differences in biological diversity in stream pollution studies. J. Water Pollut. Control Fed. 40(9):1607-1613.
54. Patrick, R., J. Cairns, Jr., and A. Scheier. 1968. The relative sensitivity of diatoms, snails, and fish to twenty common constituents of industrial wastes. Prog. Fish-Cult. 30(3):137-140.
55. Scheier, A. and J. Cairns, Jr. 1968. An apparatus for estimating the effect of toxicants on the critical flicker frequency response of bluegill sunfish. Proc. 23rd Ind. Waste Conf., Purdue Univ. Eng. Bull. Ext. Ser. 132(2):849-855.
56. Shirer, H. W., J. Cairns, Jr., and W. T. Waller. 1968. A simple apparatus for measuring activity patterns of fish. Water Resour. Bull. 4(3):27-43.
57. Cairns, J., Jr. 1969. Fish bioassays -- reproducibility and rating. Revista de Biologia 7(1-2):7-12.
58. Cairns, J., Jr. 1969. Formal discussion of "Bacterial and ciliate quantity related to water pollution: by Vera Straskrobova and Milos Legner." Pages 72-73 in S. H. Jenkins, ed. Advances in Water Pollution Research. Proc. 4th International Conference on Water Pollution, Pergamon Press, New York.
59. Cairns, J., Jr. 1969. Formal discussion of "The effects of heated discharges on fresh-water benthos: by Charles B. Kurtz." Pages 214-220, 154, 225-277 in P. A. Krenkel and F. L. Parker, ed. Biological Aspects of Thermal Pollution. Vanderbilt University Press, Nashville, TN.
60. Cairns, J., Jr. 1969. Heat effects upon the aquatic environment. Pages 21-30 in Governor's Conference on Thermal Pollution, July 18, 1969, Traverse City, MI. Michigan Water Resources Commission.

61. Cairns, J., Jr. 1969. The need for regional water resources management. Trans. Kansas Acad. Sci. 714(4):480-490. (Winter issue, 1968).
62. Cairns, J., Jr. 1969. Rate of species diversity restoration following stress in freshwater protozoan communities. Univ. Kans. Sci. Bull. 48(6):290-324.
63. Cairns, J., Jr. 1969. The response of fresh-water protozoan communities to heated waste waters. Proc. 2nd U.S.I.B.P. Thermal Workshop. Chesapeake Sci. 10(3-4):177-185.
64. Cairns, J., Jr. 1969. Some basic problems of environmental research. Pages 9-10 in E. M. Hafner and J. M. Foster, ed. AAAS Symposium on Undergraduate Studies in Environmental Science. School of Natural Science and Mathematics, Hampshire College, Amherst, MA.
65. Cairns, J., Jr. and P. S. Humphrey. 1969. A water resources ecology capability for the Waterways Experiment Station and the U.S. Army Corps of Engineers. U. S. Army Corps of Engineers Contract Report 0-69-1. 26 pp.
66. Cairns, J., Jr. and R. L. Kaesler. 1969. Cluster analysis of Potomac River survey stations based on protozoan presence-absence data. Hydrobiologia 34(3-4):414-432.
67. Cairns, J., Jr., M. L. Dahlberg, K. L. Dickson, N. Smith, and W. T. Waller. 1969. The relationship of fresh-water protozoan communities to the MacArthur-Wilson equilibrium model. Am. Nat. 103(933):439-454.
68. Cairns, J., Jr., W. T. Waller, and J. Smrcek. 1969. Fish bioassays contrasting constant and fluctuating inputs of toxicants. Revista de Biologia 7(1-2):75-91.
69. Foster, N. R., J. Cairns, Jr., and R. L. Kaesler. 1969. The flagfish Jordanella floridae as a laboratory animal for behavioral bioassay studies. Proc. Acad. Nat. Sci. Phila. 121(5):129-152.
70. Roback, S. S., J. Cairns, Jr., and R. L. Kaesler. 1969. Cluster analysis of occurrence and distribution of insect species in a portion of the Potomac River. Hydrobiologia 34(3-4):484-502.
71. Sparks, R. E., J. Cairns, Jr., and F. B. Cross. 1969. Some effects of a neutral mixture of calcium oxide and sulfuric acid on channel catfish Ictalurus punctatus (Rafinesque). Trans. Kans. Acad. Sci. 72(1):1-15.
72. Cairns, J., Jr. 1970. The application of aquatic ecological information for water pollution control in the chemical industry. Am. Institute Chemical Engineers, Special Publication Ind., Process Design for Water Pollution Control. 2nd paper, 6 pp.
73. Cairns, J., Jr. 1970. Ecological management problems caused by heated waste water discharge into the aquatic environment. Water Resour. Bull. 6(6):868-878.
74. Cairns, J., Jr. 1970. Preserving the life support system of spaceship earth. Context 4(3):4-10.
75. Cairns, J., Jr. 1970. The role of the aquatic ecologists in establishing industrial pollution abatement programs. University of Massachusetts Technical Guidance Center Bull. 2(3):1-2.
76. Cairns, J., Jr. and K. L. Dickson. 1970. Reduction and restoration of the number of fresh-water protozoan species following acute exposure to copper and zinc. Trans. Kans. Acad. Sci. 73(1):1-10.
77. Cairns, J., Jr. and R. A. Paterson. 1970. The effects of heated waste waters on microbial communities. Water Resour. Res. Center Bull., Virginia Polytechnic Institute and State University, Blacksburg. 40:131-142.
78. Cairns, J., Jr. and J. A. Ruthven. 1970. Artificial microhabitat size and the number of colonization protozoan species. Trans. Am. Microsc. Soc. 89(1):100-109.
79. Cairns, J., Jr. and W. H. Yongue, Jr. 1970. An observation on the protozoan communities in the bottom sediments of Lake Huron. Revista de Biologia 71(1-2):151-153.
80. Cairns, J., Jr., K. L. Dickson, R. E. Sparks, and W. T. Waller. 1970. A preliminary report on rapid biological information systems for water pollution control. J. Water Pollut. Control Fed. 42(5):685-703.

81. Cairns, J., Jr., K. L. Dickson, R. E. Sparks, and W. T. Waller. 1970. Reducing the time lag in biological information systems. 159th Annual Meeting, American Chemical Society, Division of Water, Air and Waste Chemistry, 10(1):84-98.
82. Cairns, J., Jr., R. L. Kaesler, and R. Patrick. 1970. Occurrence and distribution of diatoms and other algae in the upper Potomac River. Not. Nat. Acad. Nat. Sci. Phila. 436:1-12.
83. Cairns, J., Jr., R. E. Sparks, and W. T. Waller. 1970. Biological systems as pollution monitors. Res. Develop. 21(9):22-24.
84. Sparks, R. E. and J. Cairns, Jr. 1970. A shocking experience. Frontiers 34(6):7-11.
85. Cairns, J., Jr. 1971. Foiling the prophets of doom. Context 64(6):7-11.
86. Cairns, J., Jr. 1971. Preserving the life support system of spaceship earth. Global Village 1:51-58.
87. Cairns, J., Jr. 1971. Recovery of streams affected by acid mine drainage. Water Resour. Res. VA. 46:145-155.
88. Cairns, J., Jr. 1971. The role of education in maintaining the life support system of spaceship earth. Proc. of an Environmental Education Conference.
89. Cairns, J., Jr. 1971. A simple method for determining the effect of pollution upon aquatic communities. Am. Chem. Soc., Div. Water, Air and Waste Chem., Gen. Pop. Vol. II, No. 2, 39-46(C.A.), Vol. 78, 156246 (1873).
90. Cairns, J., Jr. 1971. Thermal pollution--a cause for concern. J. Water Pollut. Control Fed. 43(1):55-66.
91. Cairns, J., Jr and K. L. Dickson. 1971. River basin survey planning. Environmental Protection Agency Training Manual - Bioassay in Pollution Analysis and Control.
92. Cairns, J., Jr. and K. L. Dickson. 1971. A simple method for determining the effects of pollution upon aquatic communities. Extended Abstracts of 162nd National Meeting WATR12: Extended Abstract, Div. Water, Air, Waste Chem., Am. Chem. Soc. 11(2):39-46.
93. Cairns, J., Jr. and K. L. Dickson. 1971. A simple method for the biological assessment of the effects of waste discharges on aquatic bottom-dwelling organisms. J. Water Pollut. Control Fed. 43(4):755-772.
94. Cairns, J., Jr. and R. L. Kaesler. 1971. Cluster analysis of fish in a portion of the upper Potomac River. Trans. Am. Fish. Soc. 100(4):750-756.
95. Cairns, J., Jr. and R. A. Paterson. 1971. The effects of heated waste waters upon microbial communities. Water Resour. Res. VA. 46:121-126.
96. Cairns, J., Jr. and R. E. Sparks. 1971. Special applications and procedures for bioassay. Pages B3-1 to B3-10 in Bioassays in Pollution Analysis and Control. Environmental Protection Agency, Training Manual. Cincinnati, OH.
97. Cairns, J., Jr. and W. T. Waller. 1971. The use of fish movement patterns to monitor zinc. Water Pollution Control Research Series, U. S. Government Printing Office, 18050 EDQ, 56 pp.
98. Cairns, J., Jr., T. Beamer, S. Churchill, and J. A. Ruthven. 1971. Response of protozoans to detergent-enzymes. Hydrobiologia 39(2):193-205.
99. Cairns, J., Jr., N. H. Cromer, T. K. Bahns, and W. T. Waller. 1971. A confirmation of Mount's autopsy technique for zinc-caused fish mortality. Water Resour. Bull. 7(5):956-968.
100. Cairns, J., Jr., J. S. Crossman, K. L. Dickson, and E. E. Herricks. 1971. The recovery of damaged streams. Assoc. Southeast. Biol. Bull. 18(3):79-106.
101. Cairns, J., Jr., K. L. Dickson, and W. H. Yongue, Jr. 1971. The consequences of nonselective periodic removal of portions of fresh-water protozoan communities. Trans. Am. Micro. Soc. 90(1):71-80.

102. Cairns, J., Jr., R. E. Sparks, and W. T. Waller. 1971. The relationship between continuous biological monitoring and water quality standards for chronic exposure. Extended Abstracts of 162nd National Meeting WATR12: Extended Abstract, Div. Water, Air, Waste Chem., Am. Chem. Soc. 11(2):55-62.
103. Dickson, K. L., J. Cairns, Jr., and J. C. Arnold. 1971. An evaluation of the use of basket-type artificial substrates for sampling macroinvertebrate organisms. Trans. Am. Fish. Soc. 100(3):553-559.
104. Kaesler, R. L., J. Cairns, Jr., and J. M. Bates. 1971. Cluster analysis of non-insect macroinvertebrates of the upper Potomac River. Hydrobiologia 37(2):173-181.
105. Lorton, E. D. and J. Cairns, Jr. 1971. A preliminary report on the effect of simulated passage of potential colonizing protozoans through the condenser of a stream electric power generating plant upon downstream protozoan community development. Revista de Biologia 6(3-4):215-227.
106. Lorton, E. D. and J. Cairns, Jr. 1971. A simple apparatus for delivering a heat shock to microscopic aquatic organisms. Revista de Biologia 7(3-4):229-237.
107. Waller, W. T., M. L. Dahlberg, R. E. Sparks, and J. Cairns, Jr. 1971. A computer simulation of the effects of superimposed mortality due to pollutants on populations of fathead minnows (Pimephales promelas). J. Fish. Res. Board Can. 28(8):1107-1112.
108. Yongue, W. H., Jr. and J. Cairns, Jr. 1971. Colonization of polyurethane substrates by freshwater protozoans. J. Elisha Mitchell Sci. Soc. 87(4):71-72.
109. Yongue, W. H., Jr. and J. Cairns, Jr. 1971. Colonization and succession of fresh-water protozoans in polyurethane foam suspended in a small pond in North Carolina. Not. Nat. Acad. Nat. Sci. Phila. 443:1-13.
110. Yongue, W. H., Jr. and J. Cairns, Jr. 1971. Micro-habitat pH differences from those of the surrounding water. Hydrobiologia 38(3-4):453-461.
111. Almedia, S. P., D. Del Balzo, J. Cairns, Jr., K. L. Dickson, and G.R. Lanza. 1972. Holographic microscopy of diatoms. Trans. Kans. Acad. Sci. 74(3-4):257-260.
112. Burton, D. T., A. H. Jones, and J. Cairns, Jr. 1972. Acute zinc toxicity to rainbow trout (Salmo gairdneri): Confirmation of the hypothesis that death is related to tissue hypoxia. J. Fish. Res. Board Can. 29(1):1463-1466.
113. Burton, D. T., E. L. Morgan, and J. Cairns, Jr. 1972. Mortality curves of bluegills (Lepomis macrochirus Rafinesque) simultaneously exposed to temperature and zinc stress. Trans. Am. Fish. Soc. 101(3):435-441.
114. Cairns, J., Jr. 1972. Coping with heated waste water discharges from steam-electric power plants. BioScience 22(7):411-419.
115. Cairns, J., Jr. 1972. The impact of pollution on our total environment. Pages 2-11 in Management and Pollution Control, Virginia Cooperative Extension MFST-1900, Food Industry Week Conference, Feb. 8-10.
116. Cairns, J., Jr. 1972. The role of education in protecting the life support system of spaceship earth. Pages 1-16 in Proceedings of the Environmental Ecology Education Conference, U. S. Office of Education Region III.
117. Cairns, J., Jr. and G. R. Lanza. 1972. Pollution controlled changes in algal and protozoan communities. Bull. Environ. Contamin. Toxicol. 7(5):245-272.
118. Cairns, J., Jr. and R. M. Robertson. 1972. Environmental research. Proceedings of the Southern Regional Technical Work-Planning Conference of the Cooperative Soil Survey. U. S. Department of Agriculture, Virginia Polytechnic Institute and State University, Blacksburg.
119. Cairns, J., Jr. and J. A. Ruthven. 1972. A test of the cosmopolitan distribution of fresh-water protozoans. Hydrobiologia 39(3):405-427.

120. Cairns, J., Jr., T. K. Bahns, D. T. Burton, K. L. Dickson, R. E. Sparks, and W. T. Waller. 1972. The effects of pH, solubility and temperature upon the acute toxicity of zinc to the bluegill sunfish (*Lepomis macrochirus* Raf.). Trans. Kans. Acad. Sci. 74(1):81-92.
121. Cairns, J., Jr., J. S. Crossman, and K. L. Dickson. 1972. The biological recovery of the Clinch River following a fly-ash-pond spill. Proc. 25th Ind. Waste Conf., Purdue Univ. Eng. Bull. 137(1):182-192.
122. Cairns, J., Jr., K. L. Dickson, and A. C. Hendricks. 1972. Pre- and post-construction surveys. Ind. Water Eng. 9(2):33-35.
123. Cairns, J., Jr., K. L. Dickson, G. R. Lanza, S. P. Almedia, and D. Del Balzo. 1972. Coherent optical spatial filtering of diatoms in water pollution monitoring. Archiv. Mikrobiol. 83:141-146.
124. Cairns, J., Jr., G. R. Lanza, and B. C. Parker. 1972. Pollution related structural and functional changes in aquatic communities with emphasis on freshwater algae and Protozoa. Proc. Acad. Nat. Sci. Phila. 124(5):79-127.
125. Dickson, K. L. and J. Cairns, Jr. 1972. The relationship of freshwater macroinvertebrate communities collected by floating artificial substrates to the MacArthur-Wilson equilibrium model. Am. Midl. Nat. 88(1):68-75.
126. Herricks, E. E. and J. Cairns, Jr. 1972. The recovery of stream macrobenthic communities from the effects of acid mine drainage. Pages 370-398 in Fourth Symposium on Coal Mine Drainage Research. Ohio River Valley Water Sanitation Commission, Bituminous Coal Research, Inc.
127. Kaesler, R. L. and J. Cairns, Jr. 1972. Cluster analysis of data from limnological surveys of the upper Potomac River. Am. Midl. Nat. 88(1):56-67.
128. Lanza, G. R. and J. Cairns, Jr. 1972. Physio-morphological effects of abrupt thermal stress on diatoms. Trans. Am. Microsc. Soc. 91(3):276-298.
129. Sparks, R. E. and J. Cairns, Jr. 1972. The response of bluegill sunfish (*Lepomis macrochirus* Rafinesque) to seismic shock. Hydrobiologia 39(2):273-276.
130. Sparks, R. E., J. Cairns, Jr., and A. G. Heath. 1972. The use of bluegill breathing rates to detect zinc. Water Res. 6:895-911.
131. Sparks, R. E., J. Cairns, Jr., R. A. McNabb, and G. Suter, II. 1972. Monitoring zinc concentrations in water using the respiratory response of bluegills (*Lepomis macrochirus* Rafinesque). Hydrobiologia 40(3):361-369.
132. Sparks, R. E., W. T. Waller, and J. Cairns, Jr. 1972. Effects of shelters on the resistance of dominant and submissive bluegills (*Lepomis macrochirus*) to a lethal concentration of zinc. J. Fish. Res. Board Can. 29(9):1356-1358.
133. Waller, W. T. and J. Cairns, Jr. 1972. The use of fish movement patterns to monitor zinc in water. Water Res. 6:257-269.
134. Cairns, J., Jr. 1973. Le maintien de l'equilibre dans les communatis protozoaires d'eau doce. Fifth International Congress of Protozoology, Progress in Protozoology, Universite de Clermont, VER - Sciences Exactes et Naturelles. 74 pp.
135. Cairns, J., Jr. 1973. Putting Humpty Dumpty back together again. Physics and Biology 1(1):1-4.
136. Cairns, J., Jr. and W. H. Yongue, Jr. 1973. A comparison of the protozoan communities in a coastal plain river through space and time. Revista de Biologia 9(1-4):15-34.
137. Cairns, J., Jr. and W. H. Yongue, Jr. 1973. The effect of an influx of new species on the diversity of protozoan communities. Revista de Biologia 9(1-4):187-206.
138. Cairns, J., Jr., J. S. Crossman, K. L. Dickson, and E. E. Herricks. 1973. The effect of major industrial spills upon stream organisms. Proc. 26th Annual Purdue Ind. Waste Conf., Purdue Univ. Eng. Bull. 140(1):156-170.

139. Cairns, J., Jr., G. R. Lanza, R. E. Sparks, and W. T. Waller. 1973. Developing biological information systems for water quality management. Water Resour. Bull. 9(1):81-99.
140. Cairns, J., Jr., R. E. Sparks, and W. T. Waller. 1973. The use of fish as sensors in industrial waste lines to prevent fish kills. Hydrobiologia 41(2):151-167.
141. Cairns, J., Jr., W. H. Yongue, Jr., and H. Boatman, Jr. 1973. The protozoan colonization of polyurethane foam units anchored in the benthic area of Douglas Lake, Michigan. Trans. Am. Microsc. Soc. 92(4):648-656.
142. Cairns, Jr., Jr., W. H. Yongue, Jr., and H. Boatman, Jr. 1973. The relationship between number of protozoan species and duration of habitat immersion. Revista de Biologia 9(1-4):35-42.
143. Ruthven, J. A. and J. Cairns, Jr. 1973. The response of fresh-water protozoan artificial communities to metals. J. Protozool. 20(1):127-135.
144. Yongue, W. H., Jr. and J. Cairns, Jr. 1973. Long-term exposure of artificial substrates to colonization by protozoans. J. Elisha Mitchell Sci. Soc. 89(1-2):115-119.
145. Yongue, W. H., Jr., J. Cairns, Jr., and H. C. Boatman, Jr. 1973. A comparison of fresh-water protozoan communities in geographically proximate but chemically dissimilar bodies of water. Arch. Protistenkd. 115:154-161.
146. Beeton, A. M., J. Cairns, Jr., C. C. Coutant, R. Hartung, H. E. Johnson, R. Patrick, L. L. Smith, Jr., and J. B. Sprague. 1974. Research Needs in Water Quality Criteria 1972. Environmental Studies Board, National Academy of Sciences, 64 pp., Section III, Freshwater Aquatic Life and Wildlife.
147. Benfield, E. F., A. C. Hendricks, and J. Cairns, Jr. 1974. Proficiencies of two artificial substrates in collecting stream macroinvertebrates. Hydrobiologia 45(4):431-440.
148. Buikema, A. L., Jr. and J. Cairns, Jr. 1974. Development of planarian bioassay techniques. Pages 229-230 in Am. Phil. Soc. Yearbook.
149. Buikema, A. L., Jr., J. Cairns, Jr., and G. W. Sullivan. 1974. Evaluation of Philodina acuticornis (Rotifera) as a bioassay organism for heavy metals. Water Resour. Bull. 19(4):648-661.
150. Cairns, J., Jr. 1974. Environmental quality control recommendations for heated waste water discharges. Aware 41:10-13.
151. Cairns, J., Jr. 1974. Indicator species vs. the concept of community structure as an index of pollution. Water Resour. Bull. 10(2):338-347.
152. Cairns, J., Jr. 1974. Matching heated waste water discharges to environmental assimilative capacity. Symposium on Energy Production and Thermal Effects. 42 pp.
153. Cairns, J., Jr. and K. L. Dickson. 1974. Guidelines for developing studies to determine the biological effects of thermal discharges. Aware 43:9-12.
154. Cairns, J., Jr. and D. Messenger. 1974. An interim report on the effects of prior exposure to sublethal concentrations of toxicants upon the tolerance of snails to thermal shock. Arch. Hydrobiol. 74(4):441-447.
155. Cairns, J., Jr. and W. H. Yongue, Jr. 1974. Protozoan colonization rates on artificial substrates suspended at different depths. Trans. Am. Microsc. Soc. 93(2):206-210.
156. Cairns, J., Jr., E. L. Morgan, and R. E. Sparks. 1974. The response of bluegills (Lepomis macrochirus Rafinesque) in a pollution monitoring system to a diurnal temperature change. Trans. Am. Fish. Soc. 103(1):138-140.
157. Cairns, J., Jr., J. A. Ruthven, and R. L. Kaesler. 1974. Distribution of Protozoa in a small stream. Am. Midl. Nat. 92(2):406-414.

158. Cairns, J., Jr., R. E. Sparks, and W. T. Waller. 1974. The design of a continuous flow biological early warning system for industrial use. *Proc. 27th Annual Purdue Ind. Waste Conf., Purdue Univ. Eng. Bull.* 141(1):242-255.
159. Cherry, D. S., K. L. Dickson, and J. Cairns, Jr. 1974. The responses of fish to heated water discharges. *Aware* 54:13-15.
160. Crossman, J. S. and J. Cairns, Jr. 1974. A comparative study between two different artificial substrate samplers and regular sampling techniques. *Hydrobiologia* 44(4):517-522.
161. Crossman, J. S., R. L. Kaesler, and J. Cairns, Jr. 1974. The use of cluster analysis in the assessment of spills of hazardous materials. *Am. Midl. Nat.* 92(1):94-114.
162. Dickson, K. L., A. C. Hendricks, J. S. Crossman, and J. Cairns, Jr. 1974. Effects of intermittently chlorinated cooling tower blowdown on fish and invertebrates. *Environ. Sci. Technol.* 8(9):845-849.
163. Dolan, J. M., III, B. C. Gregg, J. Cairns, Jr., K. L. Dickson, and A. C. Hendricks. 1974. The acute toxicity of three new surfactant mixtures to a mayfly larvae. *Arch. Hydrobiol.* 74(1):123-132.
164. Herricks, E. E. and J. Cairns, Jr. 1974. The recovery of streams stressed by acid coal mine drainage. Pages 11-24 in *Coal and the Environment*. Fifth Symposium on Coal Mine Drainage Research, National Coal Association, Kentucky.
165. Hocutt, C. H., R. L. Kaesler, M. T. Masnik, and J. Cairns, Jr. 1974. Biological assessment of water quality in a large river system: An evaluation of a method for fishes. *Arch. Hydrobiol.* 74(4):448-462.
166. Kaesler, R. L., J. Cairns, Jr., and J. S. Crossman. 1974. Redundancy in data from stream surveys. *Water Res.* 8(9):637-642.
167. Smith, L. L., Jr., S. I. Auerbach, J. Cairns, Jr., D. I. Mount, G. A. Rohlich, J. B. Sprague, and W. L. Klein. 1974. ORSANCO 24-hour bioassay. Ohio River Valley Water Sanitation Commission, Cincinnati. 21 pp.
168. Stauffer, J. R., Jr., K. L. Dickson, and J. Cairns, Jr. 1974. A field evaluation of the effects of heated discharges on fish distribution. *Water Resour. Bull.* 10(5):860-876.
169. Bryson, W. T., R. T. Lackey, J. Cairns, Jr., and K. L. Dickson. 1975. Restocking after fishkills as a fisheries management strategy. *Trans. Am. Fish. Soc.* 104(2):256-263.
170. Cairns, J., Jr. 1975. Contributor to 14th Edition of *Standard Methods for the Examination of Water and Wastewater*. American Public Health Association, Washington, DC. 1193 pp.
171. Cairns, J., Jr. 1975. Critical species, including man, within the biosphere. *Naturwissenschaften.* 62(5):193-199.
172. Cairns, J., Jr. and J. L. Plafkin. 1975. Response of protozoan communities exposed to chlorine stress. *Arch. Protistenkd.* 117:47-53.
173. Cairns, J., Jr., K. L. Dickson, and G. F. Westlake. 1975. Continuous biological monitoring to establish parameters for water pollution control. *Prog. Water Technol.* 7(2-6):829-841.
174. Cairns, J., Jr., A. G. Heath, and B. C. Parker. 1975. The effects of temperature upon the toxicity of chemicals to aquatic organisms. *Hydrobiologia* 47(1):135-171.
175. Cairns, J., Jr., A. G. Heath, and B. C. Parker. 1975. Temperature influence on chemical toxicity to aquatic organisms. *J. Water Pollut. Control Fed.* 47(2):267-280.
176. Cairns, J., Jr., W. H. van der Schalie, and G. F. Westlake. 1975. The effects of lapsed time since feeding upon the toxicity of zinc to fish. *Bull. Environ. Contam. Toxicol.* 13(3):269-274.
177. Cherry, D. S., K. L. Dickson, and J. Cairns, Jr. 1975. Temperatures selected and avoided by fish at various acclimation temperatures. *J. Fish. Res. Board Can.* 32(4):485-491.

178. Cherry, D. S., K. L. Dickson, and J. Cairns, Jr. Dated 1974, publ. 1975. The use of a mobile laboratory to study temperature response of fish. *Proc. 29th Purdue Ind. Waste Conf., Purdue Univ. Eng Bull. Ext. Ser.* 145(1):129-140.
179. Crossman, J. S. and J. Cairns, Jr. Dated 1973, publ. 1975. The effect of a power plant effluent on the Clinch River. *Proc. 28th Annual Purdue Ind. Waste Conf., Purdue Univ. Eng. Bull.* 142(1):425-437.
180. Dickson, K. L., D. W. Kern, W. F. Ruska, Jr., and J. Cairns, Jr. 1975. Problems in performing environmental assessments. *J. Hydraulics Div. ASCE*, 101(HY7):965-976.
181. Hall, J. W., J. C. Arnold, W. T. Waller, and J. Cairns, Jr. 1975. A procedure for the detection of pollution by fish movements. *Biometrics* 31(1):11-18.
182. Hocutt, C. H., R. L. Kaesler, M. T. Masnik, and J. Cairns, Jr. 1975. Evaluation biologique de la qualite de l'eau l'eau l'un systeme de grands cours 'eau: evaluation l'une methode pour poissons. *Symposium on Methodology for the Survey, Monitoring and Appraisal of Fishery Resources in Lakes and Large Rivers.* European Inland Fisheries Advisory Commission.
183. Stauffer, J. R., K. L. Dickson, A. G. Heath, G. W. Lane, and J. Cairns, Jr. 1975. Body temperature change of bluegill sunfish subjected to thermal shock. *Prog. Fish-Cult.* 37(2):90-92.
184. Stauffer, J. R., Jr., K. L. Dickson, J. Cairns, Jr., W. F. Calhoun, M. T. Masnik, and R. H. Myers. 1975. Summer distribution of fish species in the vicinity of a thermal discharge, New River, Virginia. *Arch. Hydrobiol.* 76(3):287-301.
185. Buikema, A. L., Jr., D. R. Lee, and J. Cairns, Jr. 1976. A screening bioassay using *Daphnia pulex* for refinery wastes discharged into freshwater. *J. Test. Eval.* 4(2):119-125.
186. Cairns, J., Jr. and K. L. Dickson. 1976. Effects of pollution on "water quality." *Standardization News* 4(1):16-18.
187. Cairns, J., Jr., W. F. Calhoun, M. J. McGinniss, and W. Straka. 1976. Aquatic organisms response to severe stress following acutely sublethal toxicant exposure. *Water Resour. Bull.* 12(6):1233-1243.
188. Cairns, J., Jr., K. L. Dickson, J. P. Slocumb, S. P. Almeida, and J. K. T. Eu. 1976. Automated pollution monitoring with microcosms. *Int. J. Environ. Stud.* 10:43-49.
189. Cairns, J., Jr., R. L. Kaesler, D. L. Kuhn, J. L. Plafkin, and W. H. Yongue, Jr. 1976. The influence of natural perturbation on protozoan communities inhabiting artificial substrates. *Trans. Am. Microsc. Soc.* 95(4):646-653.
190. Cairns, J., Jr., D. I. Messenger, and W. F. Calhoun. 1976. Invertebrate response to thermal shock following exposure to acutely sub-lethal concentrations of chemicals. *Arch. Hydrobiol.* 77(2):164-175.
191. Cairns, J., Jr., J. L. Plafkin, W. H. Yongue, Jr., and R. L. Kaesler. 1976. Colonization of artificial substrates by protozoa: replicated samples. *Arch. Protistenkd.* 118(4):259-267.
192. Cairns, J., Jr., W. H. Yongue, Jr., and R. L. Kaesler. 1976. Qualitative differences in protozoan colonization of artificial substrates. *Hydrobiologia* 51:233-237.
193. Cairns, J., Jr., W. H. Yongue, Jr., and N. Smith. 1974-1976. The effects of substrate quality upon colonization by fresh-water protozoans. *Revista de Biologia* 10(1-4):13-20.
194. Cherry, D. S., R. K. Guthrie, J. H. Rodgers, Jr., J. Cairns, Jr., and K. L. Dickson. 1976. Responses of mosquitofish (*Gambusia affinis*) to ash effluent and thermal stress. *Trans. Am. Fish Soc.* 105(6):686-694.
195. Herricks, E. E. and J. Cairns, Jr. 1976. The recovery of stream macrobenthos from low pH stress. *Revista de Biologia* 10(1-4):1-11.
196. Jones, R. C., J. Cairns, Jr., and W. H. Yongue, Jr. 1976. Vertical gradients in artificial substrate-associated protozoan community structure in a stratified freshwater lake. *J. Elisha Mitchell Sci. Soc.* 92(1):1-8.

197. Stauffer, J. R., J. Cairns, Jr., D. S. Cherry, R. F. Denoncourt, and K. L. Dickson. 1976. The influence of temperature on the fish community structure of New River, Glen Lyn, Virginia. Revista de Biologia 10(1-4):21-48.
198. Yongue, W. H., Jr. and J. Cairns, Jr. 1976. Comparison between numbers and kinds of freshwater protozoans colonizing autoclaved and unautoclaved polyurethane foam substrates. Appl. Environ. Microbiol. 31(5):750-753.
199. Batac-Catalan, Z. and J. Cairns, Jr. 1977. Survival of Daphnia pulex under thermal stress and sublethal concentration of chromate. Phil. J. Biol. 6(1):47-54.
200. Cairns, J., Jr. 1977. Aquatic ecosystem assimilative capacity. Fisheries 2(2):5-7, 24.
201. Cairns, J., Jr. 1977. Biology and developing standard methods. BioScience 27(7):444.
202. Cairns, J., Jr. 1977. Dynamics of biological nitrification. Pages 45-46 in Developments at Eighth International Conference on Water Pollution Research, published by Office of Research and Development, USEPA, Washington, DC.
203. Cairns, J., Jr. 1977. Invited formal discussion of "Biomonitoring with Fish: An Aid to Industrial Effluent and Surface Water Quality Control" by W. S. G. Morgan. Prog. Water Tech. 9:C53.
204. Cairns, J., Jr. 1977. Invited formal discussion of "Dynamic Nature of Nitrifying Biological Suspended Growth Systems" by K. L. Murphy, P. M. Sutton, and B. E. Jank; and "Design of Nitrifying Activated Sludge Process with the Aid of Dynamic Simulation" by W. Gujer in Developments at Eighth International Conference on Water Pollution Research, Sydney, Australia, published by Office of Research and Development, USEPA, Washington, DC.
205. Cairns, J., Jr. 1977. Invited formal discussion of "Uptake of Americium-241 by Algae and Bacteria" by J. P. Giesey, Jr. and D. Paine; and "Nutrient Exchange Kinetics in Water Sediment Interface" by C. P. C. Poon; and "Mercury and Transport Interacting with Bed Sediment Movements" by A. Kudo, D. R. Townsend, and D. R. Miller in Developments at Eighth International Conference on Water Pollution Research, Sydney, Australia, published by Office of Research and Development, USEPA, Washington, DC.
206. Cairns, J., Jr. 1977. Rationale for developing standard biological methods. Aquat. Ecol. Newsl. 10(2):2-4.
207. Cairns, J., Jr. 1977. A survival program for taxonomists and their institutions. Assoc. Syst. Coll. 5(3):32-36.
208. Cairns, J., Jr. 1977. Uptake, exchange kinetics, transport. Pages 184-186 in Developments at Eighth International Conference on Water Pollution Research, Office of Research and Development, published by USEPA, Washington, DC.
209. Cairns, J., Jr., K. L. Dickson, and J. Slocumb. 1977. The ABC's of diatom identification using laser holography. Hydrobiologia 54(1):7-16.
210. Cairns, J., Jr., A. L. Buikema, Jr., and A. C. Hendricks. 1977. Invited formal discussion of "Development of Rapid Fish Toxicity Test Utilizing a Freeze Concentration Technique for Routine Petroleum Refinery Wastewater Monitoring" by E. C. Birchard. Prog. Water Tech. 9:D5-6.
211. Cherry, D. S., K. L. Dickson, J. Cairns, Jr., and J. R. Stauffer. 1977. Preferred, avoided, and lethal temperatures of fish during rising temperature conditions. J. Fish. Res. Board Can. 34(2):239-246.
212. Cherry, D. S., R. C. Hoehn, S. S. Waldo, D. H. Willis, J. Cairns, Jr., and K. L. Dickson. 1977. Field-laboratory determined avoidances of the spotfin shiner and the bluntnose minnow to chlorinated discharges. Water Resour. Bull. 13(5):1047-1055.
213. Cherry, D. S., S. R. Larrick, K. L. Dickson, R. C. Hoehn, and J. Cairns, Jr. 1977. Significance of hypochlorous acid in free residual chlorine to the avoidance response of spotted bass (Micropterus punctulatus) and rosyface shiner (Notropis rubellus). J. Fish. Res. Board Can. 34(9):1365-1372.

214. Dickson, K. L., J. Cairns, Jr., B. C. Gregg, D. I. Messenger, J. L. Plafkin, and W. H. van der Schalie. 1977. Effects of intermittent chlorination on aquatic organisms and communities. J. Water Pollut. Control Fed. 49(1):35-44.
215. Gruber, D., J. Cairns, Jr., K. L. Dickson, R. Hummel, III, A. F. Maciorowski, and W. H. van der Schalie. 1977. An inexpensive, noise-immune amplifier designed for computer monitoring of ventilatory movements of fish and other biological events. Trans. Am. Fish. Soc. 106(5):497-499.
216. Guth, D. J., H. D. Blankenspoor, and J. Cairns, Jr. 1977. Potentiation of zinc stress caused by parasitic infection of snails. Hydrobiologia 55(3):225-229.
217. Lee, D. R., A. L. Buikema, Jr., and J. Cairns, Jr. 1977. Development of a field bioassay using Daphnia pulex. Pages 250-265 in G. R. Craig, ed. Proc. Second Annual Aquatic Toxicity Workshop, Ontario Ministry of the Environment, Rexdale, Ontario, Canada.
218. Lubinski, K. S., K. L. Dickson, and J. Cairns, Jr. 1977. Microprocessor-based interface converts video signals for object tracking. Computer Design Dec:81-87.
219. Paul, R. W., Jr., D. L. Kuhn, J. L. Plafkin, J. Cairns, Jr., and J. G. Croxdale. 1977. Evaluation of natural and artificial substrate colonization by scanning electron microscopy. Trans. Am. Microsc. Soc. 96(4):506-519.
220. Rodgers, J. H., Jr., D. S. Cherry, J. R. Clark, K. L. Dickson, and J. Cairns, Jr. 1977. The invasion of Asiatic clam Corbicula manilensis in the New River, Virginia. The Nautilus 91(2):43-46.
221. Sherberger, F. F., E. F. Benfield, K. L. Dickson, and J. Cairns, Jr. 1977. Effects of thermal shocks on drifting aquatic insects: A laboratory simulation. J. Fish. Res. Board Can. 34(4):529-536.
222. Almeida, S. P., S. K. Case, W. J. Dallas, P. F. Lai, J. M. Fournier, J. Cairns, Jr., K. L. Dickson, and P. Pryfogle. 1978. Pattern recognition of biological specimens via matched spatial filtering. J. Appl. Photogr. Eng. 4(1):28-30.
223. Cairns, J., Jr. 1978. Hazard evaluation. Fisheries 3(2):2-4.
224. Cairns, J., Jr. 1978. Is there a conflict between teaching and research? The Biologist 60(4):123-130.
225. Cairns, J., Jr. 1978. Problems associated with establishing legal standards for pollution control. Paper 1 in Water Quality, Summer School, Hobart, Tasmania, Australian Water and Wastewater Association.
226. Cairns, J., Jr. 1978. Reductionism versus holism: The ASTM dilemma. Standardization News 6(6):13-14, 42.
227. Cairns, J., Jr. 1978. Water ecosystem risk analysis. Paper 9 in Water Quality, Summer School, Hobart Tasmania, Australian Water and Wastewater Association.
228. Cairns, J., Jr. 1978. Waterway recovery. Water Spectrum 10(4):26-32.
229. Cairns, J., Jr. 1978. Zooperiphyton (especially Protozoa) as indicators of water quality. Trans. Am. Microsc. Soc. 97(1):44-49.
230. Cairns, J., Jr. and K. L. Dickson. 1978. Field and laboratory protocols for evaluating the effects of chemical substances on aquatic life. J. Test. Eval. 6(2):81-90.
231. Cairns, J., Jr. and K. L. Dickson. 1978. Field and laboratory protocols for evaluating the effects of potentially toxic wastes on aquatic life. Paper 24 in Water Quality, Summer School, Hobart, Tasmania, Australian Water and Wastewater Association.
232. Case, S. K., S. P. Almeida, W. J. Dallas, J. M. Fournier, K. Pritz, J. Cairns, Jr., K. L. Dickson, and P. A. Pryfogle. 1978. Coherent microscopy and matched spatial filtering for real-time recognition of diatom species. Environ. Sci. Technol. 12:940-946.
233. Clark, J. R., D. I. Messenger, K. L. Dickson, and J. Cairns, Jr. 1978. Extraction of ATP from Aufwuchs communities. Limnol. Oceanogr. 23(5):1055-1059.

234. Hall, L. W., Jr., A. L. Buikema, Jr., and J. Cairns, Jr. 1978. The effects of a simulated refinery effluent on the grass shrimp, Palaemonetes pugio. Arch. Environ. Contam. Toxicol. 7:23-35.
235. Kuhn, D. L., J. L. Plafkin, and J. Cairns, Jr. 1978. Consolidating taxonomic information into a working library. Trans. Am. Microsc. Soc. 97(3):417-418.
236. Kuhn, D. L., J. L. Plafkin, and J. Cairns, Jr. 1978. A system for recording and processing taxonomic data. Water Resour. Bull. 14(6):1507-1509.
237. Larrick, S. R., K. L. Dickson, D. S. Cherry, and J. Cairns, Jr. 1978. Determining fish avoidance of polluted water. Hydrobiologia 61:257-265.
238. Paul, R. W., Jr., E. F. Benfield, and J. Cairns, Jr. 1978. Effects of thermal discharge on leaf decomposition in a river ecosystem. Verh. Int. Verein. Limnol. 20:1759-1766.
239. Rodgers, J. H., Jr., K. L. Dickson, and J. Cairns, Jr. 1978. A chamber for in situ evaluations of periphyton productivity in lotic systems. Arch. Hydrobiol. 84(3):389-398.
240. Trotter, D., A. C. Hendricks, and J. Cairns, Jr. 1978. The use of Stigeoclonium subsecundum (Chlorophyceae) as a bioassay organism. III: response to intermittent chlorination. Water Res. 12(3):185-191.
241. Yongue, W. H., Jr. and J. Cairns, Jr. 1978. The role of flagellates in pioneer protozoan colonization of artificial substrates. Pol. Arch. Hydrobiol. 25(4):787-801.
242. Cairns, J., Jr. 1979. Ecological considerations in reclaiming surface mined lands. Min. Environ. 1(3):83-89.
243. Cairns, J., Jr. 1979. Hazard evaluation with microcosms. Int. J. Environ. Stud. 13:95-99.
244. Cairns, J., Jr. 1979. Summary. Fisheries 4(4):42-44.
245. Cairns, J., Jr. and D. Gruber. 1979. Coupling of mini- and microcomputers to biological early warning systems. BioScience 29(11):665-669.
246. Cairns, J., Jr. and A. Maki. 1979. Hazard analysis in toxic materials evaluation. J. Water Pollut. Control Fed. 51(4):666-671.
247. Cairns, J., Jr., D. S. Cherry, and S. R. Larrick. 1979. Thermal discharge research. Water Spectrum 11(4):1-8.
248. Cairns, J., Jr., K. L. Dickson, and G. Lanza. 1977-1979. Studies evaluating the biological effects of thermal additions to aquatic ecosystems. Revista de Biologia 11(1-4):1-53.
249. Cairns, J., Jr., K. L. Dickson, and A. W. Maki. 1979. Estimating the hazard of chemical substances to aquatic life. Hydrobiologia 64(2):157-166.
250. Cairns, J., Jr., K. L. Dickson, P. Pryfogle, S. P. Almeida, S. Case, J. M. Fournier, and H. Fujii. 1979. Determining the accuracy of coherent optical identification of diatoms. Water Resour. Bull. 15(6):1770-1775.
251. Cherry, D. S., S. R. Larrick, J. D. Giattina, K. L. Dickson, and J. Cairns, Jr. 1979. Avoidance and toxicity responses of fish to intermittent chlorination. Environ. Int. 2(2):85-90.
252. Cherry, D. S., R. K. Guthrie, and J. Cairns, Jr. 1977-1979. Influence of detritus and diversity of invertebrates upon production and growth of omnivorous fish species in a new impoundment. Revista de Biologia 11(4):55-64.
253. Gruber, D., J. Cairns, Jr., K. L. Dickson, A. C. Hendricks, and W. R. Miller, III. 1979. Initial testing of a recent biological monitoring concept. J. Water Pollut. Control Fed. 51(11):2744-2751.
254. Gruber, D., K. L. Dickson, A. C. Hendricks, and J. Cairns, Jr. 1979. A cinematographic investigation into fish's bioelectric breathing signal. J. Fish. Biol. 14(5):429-436.

255. Rutherford, C. L., A. L. Buikema, Jr., D. R. Armant, and J. Cairns, Jr. 1979. A simple method for screening petroleum effluents by in vitro enzyme inhibition. Bull. Environ. Contam. Toxicol. 21:79-84.
256. van der Schalie, W. H., K. L. Dickson, G. F. Westlake, and J. Cairns, Jr. 1979. Fish bioassay monitoring of waste effluents. Environ. Manage. 3(3):217-235.
257. Yongue, W. H., Jr. and J. Cairns, Jr. 1977-1979. Effect of Radford Army Ammunition Plant wastes on protozoan communities in the New River, Virginia. Revista de Biologia 11(1-4):65-78.
258. Yongue, W. H., Jr., B. Berrent, and J. Cairns, Jr. 1979. Survival of Euglena gracilis exposed to sublethal temperature and hexavalent chromium. J. Protozool. 26(1):122-125.
259. Armant, D. R., A. L. Buikema, Jr., C. L. Rutherford, and J. Cairns, Jr. 1980. Evaluations of in vitro enzyme inhibition for screening petroleum effluents. Bull. Environ. Contam. Toxicol. 24:244-250.
260. Buikema, A. L., Jr., B. R. Niederlehner, and J. Cairns, Jr. 1980. Toxicant effects on reproduction and disruption of egg-length relationship in grass shrimp. Bull. Environ. Contam. Toxicol. 24:31-36.
261. Cairns, J., Jr. 1980. Beyond reductionism. VA. Tech. Mag. 3(1):30-32.
262. Cairns, J., Jr. 1980. Certification, standard methods, and criteria. Fisheries 5(4):10-11.
263. Cairns, J., Jr. 1980. Coping with point source discharges. Point Source Policy for Environmental Concerns Committee of the American Fisheries Society. Fisheries 5(6):5-8.
264. Cairns, J., Jr. 1980. Developing a toxicity testing capability for Australia. Water 7(1):14-15.
265. Cairns, J., Jr. 1980. Effect-related effluent criteria for pollutants. Keynote address at the Third International Congress on Industrial Waste Water and Wastes, Stockholm, Sweden. Published in Journal Pure and Applied Chemistry 52(8):1961-1972.
266. Cairns, J., Jr. 1980. Estimating hazard. BioScience 39(2):101-107.
267. Cairns, J., Jr. and D. Gruber. 1980. A comparison of methods and instrumentation of biological early warning systems. Water Resour. Bull. 16(2):261-266.
268. Cairns, J., Jr. and W. H. van der Schalie. 1980. Biological monitoring. Part I: Early warning systems. Water Res. 14:1179-1196.
269. Cairns, J., Jr., K. M. Hart, and M. S. Henebry. 1980. The effects of a sublethal dose of copper sulfate on the colonization rate of freshwater protozoan communities. Am. Midl. Nat. 104:93-101.
270. Cairns, J., Jr., K. W. Thompson, D. Landers, M. McKee, and A. C. Hendricks. 1980. Suitability of some freshwater and marine fishes for use with a mini-computer interfaced biological monitoring system. Water Resour. Bull. 16(3):421-427.
271. Cherry, D. S., J. Cairns, Jr., and R. Graney. 1980. Asiatic clam invasion -- causes and effects. Water Spectrum Fall:19-24.
272. Clark, J. R., J. H. Rodgers, Jr., K. L. Dickson, and J. Cairns, Jr. 1980. Using artificial streams to evaluate perturbation effects on Aufwuchs structure and function. Water Resour. Bull. 16(1):100-104.
273. Graney, R., D. S. Cherry, J. Rodgers, Jr., and J. Cairns, Jr. 1980. The influence of thermal discharges and substrate composition on the population structure and distribution of the Asiatic clam, Corbicula fluminea, in the New River, Virginia. The Nautilus 94(4):130-135.
274. Gruber, D., J. Cairns, Jr., K. L. Dickson, A. C. Hendricks, and W. R. Miller, III. 1980. Recent concepts and development of an automated biological monitoring system. J. Water Pollut. Control Fed. 51(3):465-471.

275. Henebry, M. S. and J. Cairns, Jr. 1980. The effect of island size, distance, and epicenter maturity on the colonization process in freshwater protozoan communities. Am. Midl. Nat. 104:80-92.
276. Henebry, M. S. and J. Cairns, Jr. 1980. The effect of source pool maturity on the process of island colonization: An experimental approach with protozoan communities. Oikos 35:107-114.
277. Henebry, M. S. and J. Cairns, Jr. 1980. Monitoring of stream pollution using protozoan communities on artificial substrates. Trans. Am. Microsc. Soc. 99(2):151-160.
278. Honig, R. A., M. J. McGinniss, A. L. Buikema, Jr., and J. Cairns, Jr. 1980. Toxicity tests of aquatic pollutants using Chilomas paramecium Ehrenberg (Flagellata) populations. Bull. Environ. Contam. Toxicol. 25(4):169-175.
279. Maciorowski, A. F., E. F. Benfield, and J. Cairns, Jr. 1980. Preference-avoidance reactions of crayfish to sublethal concentrations of cadmium. Hydrobiologia 74:105-112.
280. Plafkin, J. L., J. Cairns, Jr., D. L. Kuhn, and W. H. Yongue, Jr. 1980. Protozoan species accrual on artificial islands in differing lentic and wetland systems. Hydrobiologia 75:161-178.
281. Seagle, H. H., A. C. Hendricks, and J. Cairns, Jr. 1980. Does improved waste treatment have demonstrable biological benefits? Environ. Manage. 4(1):49-56.
282. Stauffer, J. R., R. L. Kaesler, J. Cairns, Jr., and K. L. Dickson. 1980. Selecting groups of fish to optimize acquisition of information on thermal discharge. Water Resour. Bull. 16(6):1097-1101.
283. Thompson, K. W., A. C. Hendricks, and J. Cairns, Jr. 1980. Acute toxicity of zinc and copper singly and in combination to the bluegill (Lepomis macrochirus). Bull. Environ. Contam. Toxicol. 25:122-129.
284. Buikema, A. L., Jr., B. R. Niederlehner, and J. Cairns, Jr. 1981. The effects of a simulated refinery effluent and its components on the estuarine crustacean, Mysidopsis bahia. Arch. Environ. Contam. Toxicol. 10(2):231-240.
285. Cairns, J., Jr. 1981. Biological monitoring. Part VI: Future needs. Water Res. 15:941-952.
286. Cairns, J., Jr. 1981. Discussion of: A critique of assimilative capacity. J. Water Pollut. Control Fed. 53(11):1653-1655.
287. Cairns, J., Jr. 1981. Recovery and restoration of damaged ecosystems. Acta Scientia Circumstantiae 1(2):1-15.
288. Cairns, J., Jr. 1981. Restoration and management: an ecologist's perspective. Restoration and Management Notes 1(1):6-8.
289. Cairns, J., Jr. 1981. The use of minicomputers in biology. The Biologist 63(2):33-47.
290. Cairns, J., Jr., K. W. Thompson, and A. C. Hendricks. 1981. Effects of fluctuating, sublethal applications of heavy metals upon the gill ventilatory response of bluegills (Lepomis macrochirus). Research and Development, Environmental Research Laboratory, U.S. Environmental Protection Agency, Duluth, MN. EPA-600/S3-81-003, pp. 1-4.
291. Clark, J. R., J. H. Van Hassell, R. B. Nicholson, D. S. Cherry, and J. Cairns, Jr. 1981. Accumulation and depuration of metals by Duckweed (Lemna perpusilla). Ecotoxicol. Environ. Saf. 5:87-96.
292. Giattina, J. D., D. S. Cherry, J. Cairns, Jr., and S. R. Larrick. 1981. Comparison of laboratory to field avoidance behavior of fish in heated, chlorinated water. Trans. Am. Fish. Soc. 110:526-535.
293. Gruber, D. and J. Cairns, Jr. 1981. Data acquisition and evaluation in biological monitoring systems. Hydrobiologia 83(3):387-393.
294. Gruber, D. and J. Cairns, Jr. 1981. Industrial effluent monitoring incorporating a recent automated fish biomonitoring system. J. Water Air Soil Pollut. 15(4):471-481.

295. Gruber, D., J. Cairns, Jr., and A. C. Hendricks. 1981. Computerized biological monitoring for demonstrating wastewater discharge. J. Water Pollut. Control Fed. 53(4):505-511.
296. Henebry, M. S., J. Cairns, Jr., C. Schwintzer, and W. H. Yongue, Jr. 1981. A comparison of vascular vegetation and protozoan communities in some freshwater wetlands of northern lower Michigan. Hydrobiologia 83(3):353-375.
297. Kuhn, D. L., J. L. Plafkin, R. Lowe, and J. Cairns, Jr. 1981. Qualitative characterization of aquatic environments using diatom life-form strategies. Trans. Am. Microsc. Soc. 100(2):165-182.
298. Larrick, S., J. R. Clark, D. S. Cherry, and J. Cairns, Jr. 1981. Structural and functional changes of aquatic heterotrophic bacteria to thermal, heavy, and fly ash effluents. Water Res. 15:875-880.
299. Buikema, A. L., Jr., B. R. Niederlehner, and J. Cairns, Jr. 1982. Biological monitoring. Part IV: Toxicity testing. Water Res. 16:239-262.
300. Cairns, J., Jr. 1982. A reply "Letter to the Editor: Biological Monitoring, Part VI - Future Need." Water Res. 16:1371-1372.
301. Cairns, J., Jr., S. P. Almeida, and H. Fujii. 1982. Automated identification of diatoms. BioScience 32(2):98-102.
302. Cherry, D. S. and J. Cairns, Jr. 1982. Biological monitoring. Part V: Preference and avoidance studies. Water Res. 16:263-301.
303. Cherry, D. S., S. R. Larrick, J. D. Giattina, J. Cairns, Jr., and J. H. Van Hassel. 1982. Influence of temperature selection upon the chlorine avoidance of cold-water fishes. Can. J. Fish Aquat. Sci. 39(1):162-173.
304. Clark, J. R., D. S. Cherry, and J. Cairns, Jr. 1982. Food quality of Aufwuchs from artificial stream receiving low levels of perturbations. Water Resour. Bull. 18(5):761-767.
305. Herricks, E. E. and J. Cairns, Jr. 1982. Biological monitoring. Part III: Receiving systems methodology based on community structure. Water Res. 16:141-153.
306. Matthews, R., A. L. Buikema, Jr., J. Cairns, Jr., and J. H. Rodgers, Jr. 1982. Biological monitoring. Part II: Receiving system functional methods, relationships and indices. Water Res. 16:129-139.
307. Nunn, G., J. Cairns, Jr., and D. Gruber. 1982. The distribution of ventilatory frequencies over time of the bluegill, Lepomis macrochirus. J. Interdiscipl. Cycle Res. 13(1):37-48.
308. Sydor, W. J., W. R. Miller, III, J. Cairns, Jr., and D. Gruber. 1982. Use of box and line plots to assess fish ventilatory behavior in biological monitoring systems. Can. J. Fish. Aquat. Sci. 39(12):1719-1722.
309. Thompson, K. W., M. L. Deaton, R. V. Foutz, J. Cairns, Jr., and A. C. Hendricks. 1982. Application of time-series intervention analysis to fish ventilatory response data. Can. J. Fish. Aquat. Sci. 39:518-521.
310. Almeida, S. P., L. M. Bernardo, and J. Cairns, Jr. 1983. Color coded biological image processing. Soc. Photo-Optical Instrum. Eng. 371.
311. Cairns, J., Jr. 1983. Are single species toxicity tests alone adequate for estimating environmental hazard? Hydrobiologia 100:47-57.
312. Cairns, J., Jr. 1983. Management options for the rehabilitation and enhancement of surface mined ecosystems. Min. Environ. 5:32-38.
313. Cairns, J., Jr. 1983. Regulating hazardous chemicals in aquatic environments. Boston College Environmental Affairs Law Review 2(1):1-10.
314. Cairns, J., Jr. and D. S. Cherry. 1983. A site-specific field and laboratory evaluation of fish and Asiatic clam population responses to coal fired power plant discharges. Water Sci. Tech. 15:31-58.

315. Cairns, J., Jr., J. L. Plafkin, R. L. Kaesler, and R. L. Lowe. 1983. Early colonization patterns of diatoms and protozoa in fourteen fresh-water lakes. J. Protozool. 30(1):47-51.
316. Graney, R. L., D. S. Cherry, and J. Cairns, Jr. 1983. Heavy metal indicator potential of the Asiatic clam (Corbicula fluminea) in artificial stream systems. Hydrobiologia 102(2):81-88.
317. Miller, W. R., III, A. C. Hendricks, and J. Cairns, Jr. 1983. Normal ranges for diagnostically important hematological and blood chemistry characteristics of rainbow trout (Salmo gairdneri). Can. J. Fish. Aquat. Sci. 40(4):420-425.
318. Thompson, K. W., A. C. Hendricks, G. Nunn, and J. Cairns, Jr. 1983. Ventilatory responses of bluegill sunfish to sublethal fluctuating exposures to heavy metals (Z⁺⁺ and C⁺⁺). Water Res. Bull. 19(5):719-727.
319. Cairns, J., Jr. 1984. Are single species toxicity tests alone adequate for estimating environmental hazard? Environ. Monit. Assess. 4(3):259-273.
320. Cairns, J., Jr. 1984. Multispecies toxicity testing. Bull. Ecol. Soc. Am. 65(3):301-304.
321. Graney, R. L., D. S. Cherry, and J. Cairns, Jr. 1984. The influence of substrate, pH, diet, and temperature upon cadmium accumulation in the Asiatic clam (Corbicula fluminea) in laboratory artificial streams. Water Res. 18:833-842.
322. Hart, K. M. and J. Cairns, Jr. 1984. The maintenance of structural integrity in freshwater protozoan communities under stress. Hydrobiologia 108:171-180.
323. Henebry, M. S. and J. Cairns, Jr. 1984. Protozoan colonization rates and trophic status of some freshwater wetland lakes. J. Protozool. 31(3):456-467.
324. Niederlehner, B. R., A. L. Buikema, Jr., C. A. Pittinger, and J. Cairns, Jr. 1984. Effects of cadmium on the population growth of a benthic invertebrate Aeolosoma headleyi (Oligochaeta). Environ. Toxicol Chem. 3:255-262.
325. Paulson, P. C., J. R. Pratt, and J. Cairns, Jr. 1984. Relationship of alkaline stress and acute copper toxicity in the snail Goniobasis livescens (Menke). Bull. Environ. Contam. Toxicol. 31:719-726.
326. Pratt, J. R., J. Cairns, Jr., and K. Meier. 1984. Migration of species during early colonization. Am. Midl. Nat. 113(1):92-101.
327. Specht, W. L., D. S. Cherry, R. A. Lechleitner, and J. Cairns, Jr. 1984. Structural, functional, and recovery responses of stream invertebrates to fly ash effluent. Can. J. Fish. Aquat. Sci. 41(6):884-896.
328. Belanger, S. E., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1985. Sediment preference of the freshwater Asiatic clam, Corbicula fluminea. The Nautilus 99(2-3):66-73.
329. Blankespoor, H. D., S. C. Cameron, and J. Cairns, Jr. 1985. Resistance of pulmonate snail populations to repeated treatments of copper sulfate. Environ. Manage. 9(5):455-458.
330. Cairns, J., Jr. 1985. Are single species toxicity tests alone adequate for estimating environmental hazard? Proceedings, National Academy of Sciences, Peoples Republic of China. 9:44-48.
331. Cairns, J., Jr. 1985. Bioassays as they relate to water quality. Water Qual. Bull. 19(1):17-20, 58-59.
332. Cairns, J., Jr. 1985. Evaluating the options for water quality management. Water Resour. Bull. 21(1):1-6.
333. Cairns, J., Jr., J. R. Pratt, and B. R. Niederlehner. 1985. A provisional multispecies toxicity test using indigenous organisms. J. Test Eval. 13(4):316-319.
334. Larrick, S. R., D. S. Cherry, and J. Cairns, Jr. 1985. Homeostatic regulation of acetazolamide-sensitive esterase activity in the bluegill sunfish (Lepomis macrochirus) following acute cold shock. J. Fish. Biol. 27:793-804.

335. Lechleitner, R. A., D. S. Cherry, J. Cairns, Jr., and D. A. Stetler. 1985. Ionoregulatory and toxicological responses of stonefly nymphs (Plecoptera) to acidic and alkaline pH. Arch. Environ. Contam. Toxicol. 14:179-185.
336. Niederlehner, B. R., J. R. Pratt, A. L. Buikema, Jr., and J. Cairns, Jr. 1985. Laboratory tests evaluating effects of cadmium on freshwater protozoan communities. Environ. Toxicol. Chem. 4:155-165.
337. Peters, G. T., D. S. Cherry, and J. Cairns, Jr. 1985. Response of Isonychia bicolor to alkaline pH: An evaluation of survival, oxygen consumption and chloride cell ultrastructure. Can. J. Fish. Aquat. Sci. 42:1088-1095.
338. Pratt, J. R. and J. Cairns, Jr. 1985. Export of species to islands from sources of differing maturity. Hydrobiologia 121:103-109.
339. Pratt, J. R. and J. Cairns, Jr. 1985. Functional groups in the Protozoa: Roles in differing ecosystems. J. Protozool. 32(3):409-417.
340. Pratt, J. R. and J. Cairns, Jr. 1985. Long-term patterns of protozoan colonization in Douglas Lake, Michigan. J. Protozool. 32(1):95-99.
341. Smith, E. P., P. M. Stewart, and J. Cairns, Jr. 1985. Similarities between rarefaction methods. Hydrobiologia 120(2):167-170.
342. Stewart, P. M., J. R. Pratt, J. Cairns, Jr., and R. L. Lowe. 1985. Diatom and protozoan species accrual on artificial substrates in lentic habitats. Trans. Am. Microsc. Soc. 104(4):369-377.
343. Belanger, S. E., D. S. Cherry, and J. Cairns, Jr. 1986. Seasonal, behavioral and growth changes of juvenile Corbicula fluminea to chrysotile asbestos exposure. Water Res. 20(10):1243-1250.
344. Belanger, S. E., D. S. Cherry, and J. Cairns, Jr. 1986. Uptake of chrysotile asbestos fibers alters growth and reproduction of Asiatic clams. Can. J. Fish. Aquat. Sci. 43(1):43-52.
345. Belanger, S. E., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1986. Growth of Asiatic clams (Corbicula sp.) during and after zinc exposure in field-located and laboratory artificial streams. Arch. Environ. Contam. Toxicol. 15:427-434.
346. Cairns, J., Jr. 1986. The case for direct measurement of environmental response to hazardous materials. Water Resour. Bull. 22(5):841-842.
347. Cairns, J., Jr. 1986. Multispecies toxicity testing: A new information base for hazard evaluation. Curr. Prac. Environ. Sci. Eng. 2:37-49.
348. Cairns, J., Jr. 1986. The myth of the most sensitive species. BioScience 36(10):670-672.
349. Cairns, J., Jr. 1986. Research needed to develop toxicity testing procedures for making water quality permitting decision. Curr. Prac. Environ. Sci. Eng. 2:185-195.
350. Cairns, J., Jr. 1986. What is meant by validation of predictions based on laboratory toxicity tests? Hydrobiologia 137:271-278.
351. Cairns, J., Jr. and R. L. Kaesler. 1986. The effect of a heated wastewater discharge upon river protozoan species pool variability through time and space. Revista de Biologia 13:3-12.
352. Cairns, J., Jr. and J. R. Pratt. 1986. Ecological consequence assessment: Effects of bioengineered organisms. Water Resour. Bull. 22(2):171-182.
353. Cairns, J., Jr., J. R. Pratt, B. R. Niederlehner, and P. V. McCormick. 1986. A simple, cost-effective multispecies toxicity test using organisms with a cosmopolitan distribution. Environ. Monit. Assess. 6:207-220.
354. Cherry, D. S., R. L. Roy, R. A. Lechleitner, P. A. Dunhart, G. T. Peters, and J. Cairns, Jr. 1986. Corbicula fouling and control measures at the Celco Plant, Virginia. Second International Corbicula Symposium, 1983, Little Rock, AR, Am. Malacol. Bull., Sp. Ed. 2:69-81.

355. Doherty, F. G., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1986. Control of freshwater fouling bivalve Corbicula fluminea by halogenation. Arch. Environ. Contam. Toxicol. 15:535-542.
356. Hartwell, S. I., H. J. Jin, D. S. Cherry, and J. Cairns, Jr. 1986. Evaluation of statistical methods for avoidance data of schooling fish. Hydrobiologia 131:63-76.
357. Pratt, J. R., B. Z. Lang, R. L. Kaesler, and J. Cairns, Jr. 1986. Effect of seasonal changes on protozoans inhabiting artificial substances in a small pond. Arch. Protistenkd. 131:45-57.
358. Shen, Y-F, A. L. Buikema, Jr., W. H. Yongue, Jr., J. R. Pratt, and J. Cairns, Jr. 1986. Use of protozoan communities to predict environmental effects of pollutants. J. Protozool. 33(2):146-151.
359. Smith, E. P., R. B. Genter, and J. Cairns, Jr. 1986. Confidence intervals for the similarity between algal communities. Hydrobiologia 139(3):237-245.
360. Stewart, P. M., K. G. Sappington, and J. Cairns, Jr. 1986. Community and population response of natural diatom communities to zinc stress in laboratory mesocosms. Curr. Prac. Environ. Sci. Eng. 2:177-184.
361. Stewart, P. M., E. P. Smith, J. R. Pratt, P. V. McCormick, and J. Cairns, Jr. 1986. Multivariate analysis of protist communities in lentic systems. J. Protozool. 33(2):152-156.
362. Belanger, S. E., D. S. Cherry, J. Cairns, Jr., and M. J. McGuire. 1987. Laboratory-field validation of Asiatic clams as a biomonitor for chrysotile contamination of public water supplies. J. Am. Water Works Assoc. 79(3):69-75.
363. Cairns, J., Jr. 1987. Developing a symbiotic relationship between industry and academe. Curr. Pract. Environ. Sci. Eng. 3:27-42.
364. Cairns, J., Jr. and B. R. Niederlehner. 1987. Problems associated with selecting the most sensitive species for toxicity testing. Hydrobiologia 153:87-94.
365. Cairns, J., Jr. and J. R. Pratt. 1987. Ecotoxicological effect indices: A rapidly evolving system. Water Sci. Technol. 19(11):1-12.
366. Cherry, D. S., J. H. Van Hassel, P. H. Ribbe, and J. Cairns, Jr. 1987. Factors influencing acute toxicity of coal ash to rainbow trout (Salmo gairdneri) and bluegill sunfish (Lepomis macrochirus). Water Resour. Bull. 23(2):293-306.
367. Doherty, F. G., D. S. Cherry, and J. Cairns, Jr. 1987. Spawning periodicity of the Asiatic clam Corbicula fluminea in the New River, Virginia. Am. Midl. Nat. 117(1):71-82.
368. Doherty, F. G., D. S. Cherry, and J. Cairns, Jr. 1987. Valve closure responses of the Asiatic clam Corbicula fluminea exposed to cadmium and zinc. Hydrobiologia 153:159-167.
369. Genter, R. B., D. S. Cherry, E. P. Smith, and J. Cairns, Jr. 1987. Algal-periphyton population and community changes from zinc stress in stream mesocosms. Hydrobiologia 153:261-275.
370. Hartwell, I. S., D. S. Cherry, and J. Cairns, Jr. 1987. Avoidance responses of schooling fathead minnows (Pimephales promelas) to a blend of metals and during a 9-month exposure. Environ. Toxicol. Chem. 6(3):177-187.
371. Hartwell, I. S., D. S. Cherry, and J. Cairns, Jr. 1987. Field validation of avoidance of elevated metals by fathead minnows (Pimephales promelas) following in situ acclimation. Environ. Toxicol. Chem. 6(3):189-200.
372. McCormick, P. V., P. M. Stewart, and J. Cairns, Jr. 1987. Effect of distance from a source pool on protozoan colonization of isolated aquatic systems. J. Freshw. Ecol. 4(1):1-15.
373. Orvos, D. and J. Cairns, Jr. 1987. Environmental aspects of hazardous materials incidents. Fire Eng. 140:24-85.

374. Pratt, J. R., R. Horwitz, and J. Cairns, Jr. 1987. Protozoan communities of the Flint River-Lake Blackshear ecosystem (Georgia, USA). Hydrobiologia 148:159-174.
375. Pratt, J. R., M. Ladzick, and J. Cairns, Jr. 1987. Colonization of artificial substrates by micrometazoa. Arch. Hydrobiol. 110:519-531.
376. Pratt, J. R., B. R. Niederlehner, N. B. Pratt, and J. Cairns, Jr. 1987. Prediction of permissible concentrations of copper from microcosm toxicity tests. Tox. Assess. 2:417-436.
377. Stewart, P. M., E. P. Smith, and J. Cairns, Jr. 1987. Relationship of the physico-chemical environment to diatom and protozoan communities: A multivariate approach. Arch. Protistenkd. 134:331-341.
378. Cairns, Jr., Jr. 1988. Can the global loss of species be stopped? Spec. Sci. Technol. 11(3).
379. Cairns, J., Jr. 1988. Putting the eco in ecotoxicology. Regul. Toxicol. Pharm. 8:226-238.
380. Cairns, J., Jr. 1988. Restoration and the alternatives: A research strategy. Restoration Management Notes 6(2):65-67.
381. Cairns, J., Jr. 1988. Should regulatory criteria and standards be based on multispecies evidence? Invited paper for The Environmental Professional 10:157-165.
382. Cairns, J., Jr. and J. R. Pratt. 1988. Gathering time-dependent information: An optimization problem. Trans. Am. Microsc. Soc. 107:1-11.
383. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1988. Structural alterations in aquatic insect communities exposed to copper in laboratory streams. Environ. Toxicol. Chem. 7:715-722.
384. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1988. The impact of heavy metals on insect communities in streams: A comparison of observational and experimental results. Can. J. Fish. Aquat. Sci. 45(11):2017-2025.
385. Farris, J. L., J. H. Van Hassel, S. E. Belanger, D. S. Cherry, and J. Cairns, Jr. 1988. Validation of cellulolytic activity versus macroinvertebrate colonization as biomonitoring tools for power plant effluents. Environ. Toxicol. Chem. 7:701-713.
386. Genter, R. B., D. S. Cherry, E. P. Smith, and J. Cairns, Jr. 1988. Attached-algal abundance altered by individual and combined treatments of zinc and pH. Environ. Toxicol. Chem. 7(9):723-733.
387. Genter, R. B., F. S. Colwell, J. R. Pratt, D. S. Cherry, and J. Cairns, Jr. 1988. Changes in epilithic communities due to individual and combined treatments of zinc and snail grazing in stream mesocosms. Toxicol. Ind. Health 4(2):185-201.
388. McCormick, P. V., J. R. Pratt, D. J. Jenkins, and J. Cairns, Jr. 1988. A comparison of protozoan, algal and metazoan colonization of artificial substrates of differing size. Trans. Am. Microsc. Soc. 107(3):259-268.
389. Pratt, J. R., N. Bowers, B. R. Niederlehner, and J. Cairns, Jr. 1988. Effects of atrazine on freshwater microbial communities. Arch. Environ. Contam. Toxicol. 17:449-457.
390. Pratt, J. R., N. J. Bowers, B. R. Niederlehner, and J. Cairns, Jr. 1988. Effects of chlorine on microbial communities in naturally derived microcosms. Environ. Toxicol. Chem. 7(9):679-687.
391. Pratt, J. R., P. V. McCormick, K. Pontasch, and J. Cairns, Jr. 1988. Evaluating soluble toxicants in contaminated soils. Water Air Soil Pollut. 37:293-307.
392. Cairns, J., Jr. 1989. Ecological consequence assessment: Predicting the effects of hazardous substances. Curr. Prac. Environ. Sci. Eng. 4:97-110.
393. Cairns, J., Jr. 1989. Forward. In M. Munawar, G. Dixon, C. I. Mayfield, T. Reynoldson, and M. H. Sadar, ed. Environmental Bioassay Techniques and Their Application. Hydrobiologia 188/189:xii-xiv.

394. Cairns, J., Jr. 1989. Restoring damaged ecosystems: Is predisturbance condition a viable option? Environ. Prof. 11:152-159.
395. Cairns, J., Jr. 1989. Where is the ecology in toxicology? Curr. Pract. Environ. Sci. Eng. 4:21-40.
396. Cairns, J., Jr. and B. R. Niederlehner. 1989. Adaptation and resistance of ecosystems to stress: A major knowledge gap in understanding anthropogenic perturbations. Spec. Sci. Tech. 12(1):23-30.
397. Cairns, J., Jr. and J. R. Pratt. 1989. Advantages and disadvantages of employing microorganisms as indicators of pollution. Curr. Prac. Environ. Sci. Eng. 4:111-123.
398. Cairns, J., Jr. and J. R. Pratt. 1989. The scientific basis of bioassays. In M. Munawar, G. Dixon, C. I. Mayfield, T. Reynoldson, and M. H. Sadar, ed. Environmental Bioassay Techniques and Their Application. Hydrobiologia 188/189:5-20.
399. Cairns, J., Jr. and E. P. Smith. 1989. Developing a statistical support system for environmental hazard evaluation. Hydrobiologia 184:143-151.
400. Cairns, J., Jr. and E. P. Smith. 1989. Randomizing data and the sequential comparison index. J. Water Pollut. Control Fed. 61(11/12):1733-1738.
401. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1989. The influence of copper exposure on predator-prey interactions in aquatic insect communities. Freshw. Biol. 21:483-488.
402. Clements, W. H., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1989. The influence of water quality on macroinvertebrate community responses to copper in outdoor experimental streams. Aquat. Toxicol. 14:249-262.
403. Clements, W. H., J. H. Van Hassel, D. S. Cherry, and J. Cairns, Jr. 1989. Colonization, variability, and the use of substratum-filled trays for biomonitoring benthic communities. Hydrobiologia 173:45-53.
404. Farris, J. L., S. E. Belanger, D. S. Cherry, and J. Cairns, Jr. 1989. Cellulolytic activity as a novel approach to assess long-term zinc toxicity to Corbicula. Water Res. 23(10):1275-1283.
405. Genter, R. B., J. R. Pratt, N. B. Bowers, and J. Cairns, Jr. 1989. Algal and protozoan community response to individual and combined treatments of zinc and phosphate. Curr. Prac. Environ. Sci. Eng. 4:133-149.
406. Hartwell, S. I., J. H. Jin, D. S. Cherry, and J. Cairns, Jr. 1989. Toxicity versus avoidance response of golden shiner, Notemigonus crysoleucas, to five metals. J. Fish. Biol. 35:447-456.
407. Pontasch, K. W. and J. Cairns, Jr. 1989. Establishing and maintaining laboratory-based microcosms of riffle insect communities: Their potential for multispecies toxicity tests. Hydrobiologia 175:49-60.
408. Pontasch, K. W., B. R. Niederlehner, and J. Cairns, Jr. 1989. Comparisons of single-species, microcosm and field responses to a complex effluent. Environ. Toxicol. Chem. 8(6):521-532.
409. Pontasch, K. W., E. P. Smith, and J. Cairns, Jr. 1989. Diversity indices, community comparison indices and canonical discriminant analysis: Interpreting the results of multispecies toxicity tests. Water Res. 23(10):1229-1238.
410. Pratt, J. R., N. J. Bowers, B. R. Niederlehner, and J. Cairns, Jr. 1989. Response of laboratory ecosystems to environmental stress: Effect of phenol. Tox. Assess. 4:161-174.
411. Scanferlato, V. S., D. R. Orvos, J. Cairns, Jr., and G. H. Lacy. 1989. Genetically engineered Erwinia carotovora in aquatic microcosms: Survival and effects on functional groups of indigenous bacteria. Appl. Environ. Microbiol. 55(6):1477-1482.
412. Belanger, S. E., D. S. Cherry, and J. Cairns, Jr. 1990. Functional and pathological impairment of Japanese medaka (Oryzias latipes) from long-term asbestos exposure. Aquat. Toxicol. 17:133-154.

413. Belanger, S. E., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1990. Validation of Corbicula fluminea growth as a stress response to copper in artificial streams and natural streams. Can. J. Fish. Aquat. Sci. 47(5):904-914.
414. Cairns, J., Jr. 1990. The emergence of global environmental awareness. J. Environ. Sci. (China). 2(2):1-17.
415. Cairns, J., Jr. 1990. The genesis of biomonitoring in aquatic ecosystems. Environ. Prof. 12:169-176.
416. Cairns, J., Jr. 1990. Global climate/ecosystem monitoring: Inland aquatics. Spec. Sci. Tech. 13(1):71-80.
417. Cairns, J., Jr. 1990. Lack of theoretical basis for predicting rate and pathways of recovery. Environ. Manage. 14(5):517-526.
418. Cairns, J., Jr. 1990. Prediction, validation, monitoring, and mitigation of anthropogenic effects upon natural systems. Environ. Auditor 2(1):19-25.
419. Cairns, J., Jr. and D. S. Cherry. 1990. The significance of water formulation in toxicity testing. Environ. Auditor 1(4):183-185.
420. Cairns, J., Jr., C. G. Curtin, and P. Buck. 1990. Developing a management policy for abandoned disturbed ecosystems. Prog. Environ. Sci. Technol. 5:1-13.
421. Cairns, J., Jr. and D. I. Mount. 1990. Aquatic toxicology. Environ. Sci. Technol. 23(2):154-160.
422. Cairns, J., Jr. and B. R. Niederlehner. 1990. Biological monitoring of hazardous waste sites. Comments Toxicol. 3(6):493-508.
423. Cairns, J., Jr., B. R. Niederlehner, and J. R. Pratt. 1990. Evaluation of joint toxicity of chlorine and ammonia to aquatic communities. Aquatic. Toxicol. 16:87-100.
424. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1990. Macroinvertebrate community responses to copper in laboratory and field experimental streams. Arch. Environ. Contam. Toxicol. 19:361-365.
425. Doherty, F. G., D. S. Cherry, and J. Cairns, Jr. 1990. Multiseasonal tissue growth trends in Corbicula fluminea (Bivalvia:Corbiculidae) from the New River, Virginia. The Nautilus 104(1):10-15.
426. Lauth, J. R., D. S. Cherry, and J. Cairns, Jr. 1990. A single reconstituted water formulation for the culture and toxicity testing of algae, invertebrates, and fish. Environ. Auditor 1(4):209-219.
427. McCormick, P. V. and J. Cairns, Jr. 1990. Microbial colonization dynamics in temporary aquatic systems. Hydrobiologia 196(3):229-253.
428. Niederlehner, B. R. and J. Cairns, Jr. 1990. Effects of ammonia on periphytic communities. Environ. Pollut. 66:207-221.
429. Niederlehner, B. R. and J. Cairns, Jr. 1990. Effects of increasing acidity on aquatic protozoan communities. Water Air Soil Pollut. 52:183-196.
430. Niederlehner, B. R., K. W. Pontasch, J. R. Pratt, and J. Cairns, Jr. 1990. Field evaluation of predictions of environmental effects from a multispecies-microcosm toxicity test. Arch. Environ. Contam. Toxicol. 19(1):62-71.
431. Orvos, D. R., G. H. Lacy, and J. Cairns, Jr. 1990. Genetically-engineered Erwinia carotovora: Survival, intraspecific competition, and effects upon selected bacterial genera. Appl. Environ. Microbiol.
432. Pratt, J. R., N. J. Bowers, and J. Cairns, Jr. 1990. Effect of sediment on estimates of diquat toxicity in laboratory microcosms. Water Res. 24(1):51-57.
433. Scanferlato, V. S. and J. Cairns, Jr. 1990. Effect of sediment-associated copper on structure and function of aquatic microcosms. Aquat. Toxicol. 18:23-34.

434. Scanferlato, V. S., G. H. Lacy, and J. Cairns, Jr. 1990. Persistence of genetically-engineered *Erwinia carotovora* in perturbed and unperturbed aquatic microcosms and effect on recovery of indigenous bacteria. Microbiol. Ecol. 20(1):11-20.
435. Scanferlato, V. S., D. R. Orvos, G. H. Lacy, and J. Cairns, Jr. 1990. Enumerating low densities of genetically engineered *Erwinia carotovora* in soil. Lett. Appl. Microbiol. 10(2):55-59.
436. Smith, E. P., K. W. Pontasch, and J. Cairns, Jr. 1990. Community similarity and the analysis of multispecies environmental data: A unified statistical approach. Water Res. 24(4):507-514.
437. Stewart, P. M., P. V. McCormick, J. R. Pratt, and J. Cairns, Jr. 1990. Structural and functional comparisons of protozoan assemblages at three types of sewage treatment plants. Prog. Environ. Sci. Tech. 5:129-144.
438. Belanger, S. E., D. S. Cherry, J. L. Farris, K. G. Sappington, and J. Cairns, Jr. 1991. Sensitivity of the Asiatic clam to various biocidal control agents. J. Am. Water Works Assoc. 83(10):79-87.
439. Cairns, J., Jr. 1991. Developing a strategy for protecting and repairing self-maintaining ecosystems. J. Clean Tech. Environ. Sci. 1(1):1-11.
440. Cairns, J., Jr. 1991. Environmental auditing for global effects. Environ. Auditor 2(4):187-195.
441. Cairns, J., Jr. 1991. Probable consequences of a cosmopolitan distribution. Spec. Sci. Tech. 14(1):41-50.
442. Cairns, J., Jr. 1991. The status of the theoretical and applied science of restoration ecology. Environ. Prof. 13(3):186-194.
443. Cairns, J., Jr. and P. V. McCormick. 1991. The use of community-and ecosystem-level end points in environmental hazard assessment: A scientific and regulatory evaluation. Environ. Auditor 2(4):239-248.
444. McCormick, P. V. and J. Cairns, Jr. 1991. Effects of micrometazoa on the protistan assemblage of a littoral food web. Freshw. Biol. 26:111-119.
445. McCormick, P. V. and J. Cairns, Jr. 1991. Limited versus unlimited membership in microbial communities: Evaluation and experimental tests of some paradigms. Hydrobiologia 218:77-91.
446. McCormick, P. V. and J. Cairns, Jr. 1991. The relative importance of population versus community processes in microbial primary succession. Hydrobiologia 213:83-98.
447. McCormick, P. V., J. Cairns, Jr., S. E. Belanger, and E. P. Smith. 1991. Response of protistan assemblages to a model toxicant, the surfactant C12-TMAC (dodecyl trimethyl ammonium chloride), in laboratory streams. Aquat. Toxicol. 20:41-70. Erratum published 1992, Vol. 22.
448. Orvos, D. R. and J. Cairns, Jr. 1991. Developing a risk assessment strategy for the Chesapeake Bay. Hydrobiologia 215:189-203.
449. Pontasch, K. W. and J. Cairns, Jr. 1991. Multispecies toxicity tests using indigenous organisms: Predicting the effects of complex effluents in streams. Arch. Environ. Contam. Toxicol. 20:103-112.
450. Cairns, J., Jr. 1992. Ecosystem peril vs. perceived, personal risk. CHEMTECH 22:24-27.
451. Cairns, J., Jr. 1992. The threshold problem in ecotoxicology. Ecotoxicology 1:3-16.
452. Cairns, J., Jr. 1992. Will integrative science develop with sufficient rapidity to mitigate global environmental degradation? Spec. Sci. Tech. 15(1):54-59.
453. Cairns, J., Jr. and P. V. McCormick. 1992. Developing an ecosystem-based capability for ecological risk assessments. Environ. Prof. 14:186-196.
454. Cairns, J., Jr., P. V. McCormick, and S. E. Belanger. 1992. Ecotoxicological testing: Small is reliable. J. Environ. Path. Toxicol. Oncology 11(5,6):247-263.

455. Cairns, J., Jr., P. V. McCormick, and B. R. Niederlehner. 1992. Estimating ecotoxicological risk and impact using indigenous aquatic microbial communities. Hydrobiologia 237:131-145.
456. Cairns, J., Jr. and B. R. Niederlehner. 1992. Coping with the environmental effects of point source discharges. J. Environ. Sci. (China) 4(1):1-9.
457. Cairns, J., Jr. and D. R. Orvos. 1992. Establishing environmental hazards of genetically engineered microorganisms. Rev. Environ. Contam. Toxicol. 124:19-39.
458. Cairns, J., Jr. and J. R. Pratt. 1992. Restoring ecosystem health and integrity during a human population increase to 10 billion. In M. Munawar, ed. Assessing Aquatic Ecosystem Health: Rationale, Challenges, and Strategies. Special issue of J. Aquat. Ecosyst. Health 1:59-68.
459. McCormick, P. V. and J. Cairns, Jr. 1992. Limitations to long-term species accrual and development of microbial community structure in aquatic "islands." J. Freshw. Ecol. 7(4):381-397.
460. Niederlehner, B. R. and J. Cairns, Jr. 1992. Community response to cumulative toxic impact: Effects of acclimation on zinc tolerance of Aufwuchs. Can. J. Fish. Aquat. Sci. 49:2155-2163.
461. Atkinson, R. B. and J. Cairns, Jr. 1993. Constructed wetlands and reclamation. Va. Mining J. 6(4):4-6.
462. Atkinson, R. B., J. E. Perry, E. P. Smith, and J. Cairns, Jr. 1993. Use of created wetland delineation and weighted averages as a component of assessment. Wetlands 13(3):185-193.
463. Cairns, J., Jr. 1993. Can microbial species with a cosmopolitan distribution become extinct? Spec. Sci. Tech. 16(1):69-73.
464. Cairns, J., Jr. 1993. Communication and status: The dilemma of an environment scientist. Spec. Sci. Tech. 16(3):163-170.
465. Cairns, J., Jr. 1993. Determining desirable ecosystem services per capita. J. Aquat. Ecosystem Health 2:237-242.
466. Cairns, J., Jr. 1993. Ecological destruction and repair: Will the balance shift in time? Spec. Sci. Tech. 16(4):262-269.
467. Cairns, J., Jr. 1993. The economic basis for a partnership between human society and natural ecosystems. Water Resour. Update 93:18-22.
468. Cairns, J., Jr. 1993. The intellectual electric fence. Annals of Earth XI(3):17-18.
469. Cairns, J., Jr. 1993. Invited keynote address: Environmental science and resource management in the 21st century: Scientific perspective. Environ. Toxicol. Chem. 12(8):1321-1329.
470. Cairns, J., Jr. 1993. Is restoration ecology practical? Restor. Ecol. 1(1):3-7.
471. Cairns, J., Jr. 1993. Maintaining per capita ecosystem services while the human population grows to ten billion: A major global challenge for biologists. Assoc. Southeast. Biol. Bull. 40(3):159-163.
472. Cairns, J., Jr. 1993. The zen of ecological restoration: Eight steps on the path toward enlightenment. Annals of Earth XI(2):13-15.
473. Cairns, J., Jr. and P. V. McCormick. 1993. Determinants of structure in aquatic non-pelagic protozoan communities. Chin. J. Oceanol. Limnol. 11(3):215-228.
474. Cairns, J., Jr. and B. R. Niederlehner. 1993. Ecological function and resiliency: Neglected criteria for environmental impact assessment and ecological risk analysis. Environ. Prof. 15:116-124.
475. Cairns, J., Jr. and S. E. Palmer. 1993. Senescent reservoirs and ecological restoration: An overdue reality check. Restor. Ecol. 1(4):212-219.

476. Cairns, J., Jr. and J. R. Pratt. 1993. Trends in ecotoxicology. Sci. Total Environ. Suppl:7-22.
477. Cairns, J., Jr., P. V. McCormick, and S. E. Belanger. 1993. Prospects for the continued development of environmentally-realistic toxicity tests using microorganisms. J. Environ. Sci. (China) 5(3):253-268.
478. Cairns, J., Jr., P. V. McCormick, and B. R. Niederlehner. 1993. A proposed framework for developing indicators of ecosystem health. Hydrobiologia 263(1):1-44.
479. Niederlehner, B. R. and J. Cairns, Jr. 1993. Effects of previous zinc exposure on pH tolerance of periphyton communities. Environ. Toxicol. Chem. 12:743-753.
480. Smith, E. P. and J. Cairns, Jr. 1993. Extrapolation methods for setting ecological standards for water quality: Statistical and ecological concerns. Ecotoxicology 2:203-219.
481. Smith, E. P., D. R. Orvos, and J. Cairns, Jr. 1993. Impact assessment using the before-after-control-impact (BACI) model: Concerns and comments. Can. J. Fish. Aquat. Sci. 50:627-637.
482. Atkinson, R. B. and J. Cairns, Jr. 1994. Possible use of wetlands in ecological restoration of surface mined lands. In M. Munawar, ed., Aquatic Ecosystem Health and the Ecological Significance of Environmental Bioassays. J. Aquat. Ecosystem Health 3:139-144.
483. Cairns, J., Jr. 1994. Communication and status: The dilemma of an environmental scientist. Annals of Earth XII:12-13 (reprinted from Spec. Sci. Tech. 16(3):163-170, 1993).
484. Cairns, Jr., Jr. 1994. Communication and status: The dilemma of an environmental scientist. Am. Women in Sci. Mag. 23(3):14-15 (reprinted from Spec. Sci. Tech. 16(3):163-170, 1993).
485. Cairns, J., Jr. 1994. Concluding remarks. In M. Munawar, ed., Aquatic Ecosystem Health and the Ecological Significance of Bioassay Techniques. J. Aquat. Ecosystem Health 3:311-312.
486. Cairns, J., Jr. 1994. Ecological restoration: Re-examining human society's relationship with natural systems. The Abel Wolman Distinguished Lecture. National Academy of Sciences Press, Washington, D. C. 20 pp.
487. Cairns, J., Jr. 1994. Ecosystem health through ecological restoration: barriers and opportunities. In M. Munawar, ed., Aquatic Ecosystem Health and the Ecological Significance of Environmental Bioassays. J. Aquat. Ecosystem Health 3(1):5-14.
488. Cairns, J., Jr. 1994. The study of ecology and environmental management: Reflections on the implications of ecological history. Environ. Manage. Health 5(4):7-15.
489. Cairns, J., Jr. and B. R. Niederlehner. 1994. Estimating the effects of toxicants on ecosystem services. Environ. Health Persp. 102(11):936-939.
490. Dobbs, M. G., J. L. Farris, R. J. Reash, D. S. Cherry, and J. Cairns, Jr. 1994. Evaluation of the resident-species procedure for developing site-specific water quality criteria for copper in Blaine Creek, Kentucky. Environ. Tox. Chem. 13(6):963-971.
491. Farris, J. L., J. L. Grudzien, S. E. Belanger, D. S. Cherry, and J. Cairns, Jr. 1994. Molluscan cellulolytic activity responses to zinc exposure in laboratory and field stream comparisons. Hydrobiologia 287:161-178.
492. Holl, K. D. and J. Cairns, Jr. 1994. Vegetational community development on reclaimed coal surface mines in Virginia. Bull. Torrey Bot. Club 121(4):327-337.
493. Holl, K., J. Cairns, Jr., and T. T. Rattray. 1994. Recycling by design. Spec. Sci. Tech. 17(2):129-134.
494. McCormick, P. V. and J. Cairns, Jr. 1994. Algae as indicators of environmental change. J. Appl. Phycol. 6:509-526.
495. McCormick, P. V., D. Louie, and J. Cairns, Jr. 1994. Longitudinal effects of herbivory on lotic periphyton assemblages. Freshw. Biol. 31:201-212.

496. Niederlehner, B. R. and J. Cairns, Jr. 1994. Consistency and sensitivity of community level endpoints in microcosm tests. In M. Munawar, ed., *Aquatic Ecosystem Health and the Ecological Significance of Environmental Bioassays*. J. Aquat. Ecosystem Health 3:93-99.
497. Palmer, S. E., B. R. Niederlehner, and J. Cairns, Jr. 1994. Assessment of pollution impact on aquatic microbial communities based on DNA hybridization and protozoan identification: Preliminary method development and comparison. In M. Munawar, ed., *Aquatic Ecosystem Health and the Ecological Significance of Bioassay Techniques*. J. Aquat. Ecosystem Health 3(1):35-44.
498. Cairns, J., Jr. 1995. Achieving sustainable use of the planet in the next century: what should Virginians do? Va. Issues Answers 2(2):2-8.
499. Cairns, J., Jr. 1995. The case for ecosystem services as toxicological end points. Human Ecol. Risk Assess. 1(3):171-174.
500. Cairns, J., Jr. 1995. Ecological integrity of aquatic systems. Regulated Rivers: Research and Management 11:313-323.
501. Cairns, J., Jr. 1995. Ecosocietal restoration: Reestablishing humanity's relationship with natural systems. Environment 37(5):4-7,30-33.
502. Cairns, J., Jr. 1995. Eco-societal restoration: Re-examining human society's relationship with natural systems. Annals Earth 13(1):18-21.
503. Cairns, J., Jr. 1995. The influence of the information age, world globalization, and ecosystem health upon ecological risk assessment. Ecosystem Health 1(2):81-87.
504. Cairns, J., Jr. 1995. Re-examining human society's relationship with natural systems: Maintaining ecosystem services and sustainable use. Corp. Environ. Strat. 3(1):69-74.
505. Cairns, J., Jr. 1995. Respect for the inherent worth of each individual versus the web of life: An unresolved conflict. Spec. Sci. Tech. 18:294-301.
506. Cairns, J., Jr. and K. L. Dickson. 1995. Ecological hazard/risk assessment: Lessons learned and new directions. Hydrobiologia 312:87-92.
507. Cairns, J., Jr. and B. R. Niederlehner. 1995. Ecosystem health concepts as a management tool. J. Aquat. Ecosystem Health 4(2):91-95.
508. Cairns, J., Jr. and S. E. Palmer. 1995. Restoration of urban waterways and vacant areas: The first steps toward sustainability. Environ. Health Persp. 103(5):452-453.
509. Cairns, J., Jr. and J. R. Pratt. 1995. Ecological restoration through behavioral change. Restor. Ecol. 3(1):51-53.
510. Cairns, J., Jr. 1996. Environmental monitoring for sustainable use of the planet. Annals of Earth XIV(2):16-18.
511. Cairns, J., Jr. 1996. Facilitating paradigm shifts. Annals of Earth XIV(1):19-20.
512. Cairns, J., Jr. and J. R. Bidwell. 1996. Discontinuities in technological and natural systems caused by exotic species. Biodiversity Conserv. 5:1085-1094.
513. Cairns, J., Jr. and J. R. Bidwell. 1996. The modification of human society by natural systems: Discontinuities caused by the exploitation of endemic species and the introduction of exotics. Environ. Health Perspect. 104(11):1142-1145.
514. Cairns, J., Jr. and B. R. Niederlehner. 1996. Developing a field of landscape ecotoxicology. Ecol. Appl. 6(3):790-796.
515. Cairns, J., Jr., J. R. Bidwell, and M. E. Arnegard. 1996. Toxicity testing with communities: Microcosms, mesocosms, and whole-system manipulations. Rev. Environ. Contam. Toxicol. 147:45-69.

516. Dobbs, M. G., D. S. Cherry, and J. Cairns, Jr. 1996. Toxicity and bioaccumulation of selenium to a three-trophic level food chain. Environ. Toxicol. Chem. 15(3):340-347.
517. Jones, D. H., R. B. Atkinson, and J. Cairns, Jr. 1996. Macroinvertebrate assemblages of surface mine wetlands of Southwest Virginia, USA. J. Environ. Sci. (China) 8(1):1-14.
518. Ricifi, L. M., D. S. Cherry, J. L. Farris, and J. Cairns, Jr. 1996. Acute and subchronic toxicity of methylene blue to larval fathead minnows (Pimephales promelas): Implications to aquatic toxicity testing. Environ. Toxicol. Chem. 15(8):1304-1308.
519. Sabre, M., K. D. Holl, and J. Cairns, Jr. 1996. Wildflowers as an alternative for landfill revegetation in Spotsylvania County, VA. VA. J. Sci. 47(40):281-291.
520. Atkinson, R. B., C. E. Zipper, W. L. Daniels, and J. Cairns, Jr. 1997. Constructing wetlands during reclamation to improve wildlife habitat. Virginia Cooperative Extension Publ. 460-129. Virginia Tech, Blacksburg, VA. 12 pp.
521. Cairns, J., Jr. 1997. Commentary: Defining goals and conditions for a sustainable world. Environ. Health Persp. 105(11):1164-1170.
522. Cairns, J., Jr. 1997. Ensuring a habitable planet for future generations. Sustainable Comm. Rev. 1(1):1-3.
523. Cairns, J., Jr. 1997. Environmental monitoring for sustainable use of the planet. Popul. Environ. 18(5):463-471.
524. Cairns, J., Jr. 1997. Global coevolution of natural systems and human society. Rev. Soc. Mex. Hist. Nat. 47:217-228.
525. Cairns, J., Jr. 1997. Protecting the delivery of ecosystem services. Ecosystem Health 3(3):185-194.
526. Cairns, J., Jr. 1997. Sustainability, ecosystem services, and health. Int. J. Sustain. Develop. World Ecol. 4:153-165.
527. McCormick, P. V., S. E. Belanger, and J. Cairns, Jr. 1997. Evaluating the hazard of dodecyl alkyl sulphate to natural ecosystems using indigenous protistan communities. Ecotoxicology 6:67-85.
528. Palmer, S. E., V. S. Scanferlato, D. R. Orvos, G. H. Lacy, and J. Cairns, Jr. 1997. Survival and ecological effects of genetically engineered Erwinia carotovora in soil and aquatic microcosms. Environ. Toxicol. Chem. 16(4):650-657.
529. Reed, D. K., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1997. Acute toxicity and functional impairment of the snail Leptoxis praerosa from copper-dominated effluent exposures. Environ. Pollut. 16(8):
530. Reed-Judkins, D. K., J. L. Farris, D. S. Cherry, A. G. Heath, and J. Cairns, Jr. 1997. Functional responses in Leptoxis praerosa to increasing metal concentration and exposure duration. Environ. Toxicol. Chem. 16(8):1666-1676.
531. Sabre, M., K. D. Holl, R. E. Lyons, and J. Cairns, Jr. 1997. Potential use of wildflower species for landfill restoration in southwestern Virginia. HortTechnology 7(4):383-387.
532. Arnegard, M. E., P. V. McCormick, and John Cairns, Jr. 1998. Effects of copper on periphyton communities assessed in situ using chemical-diffusing substrates. Hydrobiologia 385:163-170.
543. Cairns, J., Jr. 1998. Can human society exist without ecological restoration? Annals of Earth XVI(3):21-24.
534. Cairns, J., Jr. 1998. Commentary: What sustainability is not! Int. J. Sustain. Develop. World Ecol. 5:77-81.
535. Cairns, J., Jr. 1998. Consilience or consequences: Alternative scenarios for societal acceptance of sustainability initiatives. Renew. Resour. J. 16(2):6-12.

536. Cairns, J., Jr. 1998. Excessive individualism today threatens liberty tomorrow: sustainable use of the planet. Popul. Environ. 19(5):397-409.
537. Cairns, J., Jr. 1998. Hydrobiologia, Malthus, exemptionalism, and the risk/uncertainty paradox. Hydrobiologia 384:1-5.
538. Cairns, J., Jr. 1998. Malthus revisited: Sustainability and the denial of limits. The Social Contract VIII(3):157-167. <http://www.thesocialcontract.com/pdf/eight-three/cairns.pdf>.
539. Cairns, J., Jr. 1998. Monitoring for global change. J. Clean Tech. Environ. Toxicol. Occup. Med. 11(2):11-23.
540. Cairns, J., Jr. 1998. Replacing targeted compassion with multidimensional compassion: An essential paradigm shift to achieve sustainability. Spec. Sci. Tech. 21:45-51.
541. Cairns, J., Jr. 1998. The zen of sustainable use of the planet: Steps on the path to enlightenment. Popul. Environ. 20(2):119-133.
542. Heckman, J., A. C. P. Heaton, and J. Cairns, Jr. 1998. The value of concurrent restoration explored at Virginia Tech landfill. Restor. Manage. Notes 16(1).
543. Niederlehner, B. R., J. Cairns, Jr., and E. P. Smith. 1998. Modelling acute and chronic toxicity of nonpolar narcotic chemicals and mixtures to Ceriodphnia pulex. Ecotoxicol. Environ. Safety 39:136-146.
544. Orvos, D. R. and J. Cairns, Jr. 1998. Estimating the risks associated with implementing goals and conditions for global sustainability. Int. J. Sustain. Develop. World Ecol. 5:153-163.
545. Reed-Judkins, D. K., J. L. Farris, D. S. Cherry and J. Cairns, Jr. 1998. Foodborne uptake and sublethal effects of copper and zinc to freshwater snails. Hydrobiologia 364:105-118.
546. Cairns, J., Jr. 1999. Absence of certainty is not synonymous with absence of risk. Environ. Health Persp. 107(2):A56-A57.
547. Cairns, J., Jr. 1999. Balancing ecological destruction and restoration: The only hope for sustainable use of the planet. In M. Munawar, ed. Linking Science, Education, Politics and Society. AEHMS Conference, Guadalajara, Mexico. Aquat. Ecosy. Health Manage. 2:91-95.
548. Cairns, J., Jr. 1999. Balancing ecological impairment and repair for sustainability. Hydrobiologia 416:77-83.
549. Cairns, J., Jr. 1998/9. Commentary: Assimilative capacity -- The key to sustainable use of the planet. J. Aquat. Ecosy. Stress Recov. 6(4):259-263.
550. Cairns, J., Jr. 1999. Commentary on the developing field of ecotoxicology. Popul. Environ. 20(4):381-386.
551. Cairns, J., Jr. 1999. The diminished charge on the intellectual electric fence. The Social Contract IX(3):145-151. <http://www.thesocialcontract.com/pdf/nine-three/ix-30145.pdf>.
552. Cairns, J., Jr. 1999. Ecological ethics: The basis for leaving a habitable planet for our descendants. Convergence 1(1):1-17.
553. Cairns, J., Jr. 1999. Ecological restoration: A major component of sustainable use of the planet. Renew. Resour. J. 17(1):6-11.
554. Cairns, J., Jr. 1999. Exemptionalism vs environmentalism: The crucial debate on the value of ecosystem health. Aquat. Ecosystem Health Manage. 2:331-338.
555. Cairns, J., Jr. 1999. Is the quest for sustainable use of the planet unworldly? Int. J. Sustain. Develop. World Ecol. 6:167-171.
556. Cairns, J., Jr. 1999. Maintaining the habitable condition of the planet: Balancing technological and ecosystem services. Qual. Assurance 6:13-22.

557. Cairns, J., Jr. 1999. Speculations about future trends in the field of ecotoxicology. Spec. Sci. Tech. 21:205-211.
558. Cairns, J., Jr. 1999. An epic struggle: Sustainability and the emergence of a new social contract. The Social Contract IX(4):211-218. <http://www.thesocialcontract.com/pdf/nine-four/ix-4-211.pdf>.
559. Cairns, J., Jr. 1999. Viewpoint: The quest for increased longevity on an unsustainable planet. Ecosystem Health 5(2):67-69.
560. Rapport, D. J., G. Böhm, D. Bunkingham, J. Cairns, Jr., R. Costanza, J. R. Karr, H. A. M. de Kruijf, R. Levins, A. J. McMichael, N. O. Nielsen, and W. G. Whitford. 1999. Ecosystem health: The concept, the ISEH, and the important tasks ahead. Ecosystem Health 5(2):82-90.
561. Cairns, J., Jr. 2000. The developing role of ecotoxicology in industrial ecology and natural capitalism. Environ. Health Persp. 108(8):A346-A348.
562. Cairns, J., Jr. 2000. Increased longevity, quality of life, and carrying capacity on a finite planet. J. Anti-aging Med. 3(4):431-436.
563. Cairns, J., Jr. 2000. Preface to the special issue on Lake Baikal. Aquat. Ecosystem Health Manage. 3:197-198.
564. Cairns, J., Jr. 2000. The role of ecotoxicology in the protection and accumulation of natural capital. Ecotoxicology 9:151-155.
565. Cairns, J., Jr. 2000. Setting ecological restoration goals for technical feasibility and scientific validity. In G. Thayer, G. Mayer, P. Wilbur, M. Kentula, B. Mitsch, R. DeVoe, and M. Croom, ed., Goal Setting and Success Criteria, Charleston, S.C. Ecol. Eng. 171-180.
566. Cairns, J., Jr. 2000. The sine qua non of sustainable use of the planet. Sust. Comm. Rev. 39(2):6-10,56.
567. Cairns, J., Jr. 2000. Sustainability and the future of mankind: Two competing theories of infinite substitutability. Pol. Life Sci. 19(1):27-32.
568. Cairns, J., Jr. 2000. A synopsis of the book *Striking a Balance: Improving Stewardship of Marine Areas*. Journal of Environmental Sciences - China. 12(4):506-509.
569. Cairns, J., Jr. 2000. World peace and global sustainability. Int. J. Sustain. Develop. World Ecol. 7:1-11.
570. Rapport, D. J., G. Böhm, D. Buckingham, J. Cairns, Jr. R. Costanza, J. R. Carr, H. A. M. deKruiff, R. Levins, A. J. McMichael, N. O. Nielson and W. G. Whitford. 2000. Reply to Calow: Critics of environmental health misrepresented. Ecosystem Health 6(1):5-6.
571. Atkinson, R. B. and J. Cairns, Jr. 2001. Plant decomposition and litter accumulation in small depressions: Functional performance of two wetland age classes that were created via excavation. Wetlands 21(3):354-362.
572. Cairns, J., Jr. 2001. The developing role of ecotoxicology in industrial ecology and natural capitalism. SETAC Globe 2(1):2,25-27.
573. Cairns, J., Jr. 2001. Healing the world's ecological wounds. Int. J. Sustain. Develop. World Ecol. 8:185-189.
574. Cairns, J., Jr. 2001. Immigration, sustainability, and the precautionary principle. The Social Contract XI(4):239-248. <http://www.thesocialcontract.com/pdf/eleven-four/xi-4-239.pdf>.
575. Cairns, J., Jr. 2001. Life support. Forum 16(1):40-44.
576. Cairns, J., Jr. 2001. The re-emergence of multidimensional people: A consilience of the disciplines. Renew. Resour. J. 19(3):13-14.
577. Cairns, J., Jr. 2001. The role of reservoirs in sustainable use of the planet. Hydrobiologia 457:61-67.

578. Cairns, J., Jr. 2001. Speculative scenarios: Is there a way to use and sustain our planet? The Social Contract XL(2):146-152. <http://www.thesocialcontract.com/pdf/eleven-two/xi-2-146.pdf>.
579. Cairns, J., Jr. 2001. Sustainability, exceptionalism, and exemptionalism. Ecosystem Health 7(3):47-154.
580. Cairns, J., Jr. 2001. A synopsis of the book Ecological Indicators for the Nation. J. Environ. Sci. - China 13(4):520-523.
581. Cairns, J., Jr. and S. E. Palmer. 2001. Restoration of urban waterways and vacant areas: The first steps toward sustainability. Sustain 4:30-32.
582. Cairns, J., Jr. 2002. Do unto the biosphere what you expect others to do: A universal ethos and the carrying capacity of a finite planet. Environ. Health Persp. 110(2):A66-A69.
583. Cairns, J., Jr. 2002. Ecotoxicology and sustainable use of the planet. Tox. Ind. Health 18:161-170.
584. Cairns, J., Jr. 2002. Environmental monitoring for the preservation of global biodiversity: The role in sustainable use of the planet. Int. J. Sustain. Dev. World Ecol. 9:135-150.
585. Cairns, J., Jr. 2002. Environmental refugees. The Social Contract XIII(1):34-44. <http://www.thesocialcontract.com/pdf/thirteen-one/xiii-1-34.pdf>.
586. Cairns, J., Jr. 2002. Espousing sustainable use of the planet in an age of instant gratification. Sust. Comm. Rev. 5(1):1-5.
587. Cairns, J., Jr. 2003. Carrying capacity, exponential growth, and resource wars: Ethical dilemmas of human society. The Social Contract XIV(1):56-63. <http://www.thesocialcontract.com/pdf/fourteen-one/xiv-1-56.pdf>.
588. Cairns, J., Jr. 2003. Interrelationships between the precautionary principle, prediction strategies, and sustainable use of the planet. Environ. Health Persp. 111(7):877-880.
589. Cairns, J., Jr. 2003. Materialophilia, biophilia, and sustainable use of the planet. Int. J. Sust. Devel. World Ecol. 10:43-48.
590. Cairns, J., Jr. 2003. The unmanaged commons: A major challenge for sustainability ethics. The Social Contract XIV(2):136-145. <http://www.thesocialcontract.com/pdf/fourteen-two/xiv-2-136.pdf>.
591. Cairns, J., Jr. 2003. War and sustainability. Int. J. Sustain. Develop. World Ecol. 10(3):185-193.
592. Cairns, J., Jr. 2004. Eco-ethical issues: Self-regulating versus subsidized ecosystems. Int. J. Sustain. Develop. World Ecol. 11:36-47.
593. Cairns, J., Jr. 2004. Ecological tipping points: A major challenge for experimental sciences. Asian J. Exper. Sci. 18(1,2):1-16.
594. Cairns, J., Jr. 2004. Immigration/emigration and carrying capacity. Sustain. Comm. Rev. 7(1,2):30-39.
595. Cairns, J., Jr. 2004. Sustainability ethics: World population growth and mitigation. Mankind Quarterly XLV:169-194.
596. Cairns, J., Jr. 2004. Sustainability ethics: Zero net immigration. The Social Contract XV(1):58-71. <http://www.thesocialcontract.com/pdf/fifteen-one/xv-1-58.pdf>.
597. Cairns, J., Jr. 2004. Taboos and denials: Major obstacles to sustainable use of the planet. Sci. Soc. 2(1):15-24.
598. Atkinson, R. B., J. E. Perry, and J. Cairns, Jr. 2005. Vegetation communities of 20-year old created depressional wetlands. Wetlands Ecology and Management 13(4):469-478.

599. Cairns, J., Jr. 2005 (dated 2001). The age of transition to sustainability: The end of the exponential growth period. Politics and the Life Sciences 20(2):131-138.
600. Cairns, J., Jr. 2005. Avoiding a posthuman world. Sci Soc. 3(1):17-28.
601. Cairns, J., Jr. 2005. Biographical memoirs: Garrett Hardin. Proc. Am. Phil. Soc. 149(3):414-419.
602. Cairns, J., Jr. 2005. Biomonitoring: The crucial link between natural systems and society. The Mankind Quarterly XLV(3):289-308. http://mankindquarterly.org/spring2005_cairns.html.
603. Cairns, J., Jr. 2005. Ecological overshoot and ecological restoration. Asian J. Exper. Sci. 19(2):1-12.
604. Cairns, J., Jr. 2005. Ecotoxicology: An opportunity for the experimental sciences. Asian J. Exper. Sci. 19(1):1-17.
605. Cairns, J., Jr. 2005. Sustained emergencies. Int. J. Sustain. Develop. World Ecol. 12:221-226.
606. Cairns, J., Jr. 2005. Transitions: Speculative futures for *Homo sapiens*. Science and Society 3(2):5-10.
607. Cairns, J., Jr. 2006. Consumerism and the 21st century lifestyle. Sci. Soc. 4(1):25-32.
608. Cairns, J., Jr. 2006. Designing for nature and sustainability. Int. J. Sustain. Develop. World Ecol. 13:77-81.
609. Cairns, J., Jr. 2006. The diseconomies of environmental catastrophes. Asian J. Exper. Sci. 20(2):225-232.
610. Cairns, J., Jr. 2006. Ecological restoration in an era of ecological disequilibrium. Asian J. Exper. Sci. 20(1):1-6.
611. Cairns, J., Jr. 2006. Humankind's ultimate security. Asian J. Exper. Sci. 20(1):7-16.
612. Cairns, J., Jr. 2006. Restoring damaged aquatic ecosystems. J. Soc. Pol. Econ. Stud. 31(1):53-74.
613. Cairns, J., Jr. 2006. Scientists, time management, and the global environmental crisis. Sci. Soc. 4(2):121-128.
614. Cairns, J., Jr. 2006. Sustainability and the global commons. Asian J. Exper. Sci. 20(2):217-224.
615. Cairns, J., Jr. 2007. Corn for the starving or ethanol fuel: an ethical dilemma for members of the automobile culture. Sci. Soc. 5 (2):117-126.
616. Cairns, J., Jr. 2007. Integrating information from different levels of biological organization – what then? Asian J. Exper. Sci. 21(2):205-214.
617. Cairns, J., Jr. 2007. Is *Homo sapiens* just another transient species? Asian J. Exper. Sci. 21(1):13-32.
618. Cairns, J., Jr. 2007. Phantom land and ghost slaves: humankind's addiction to fossil energy. Asian J. Exper. Sci. 21(2):191-204.
619. Cairns, J., Jr. 2007. Preparing to monitor for sustainable use of the planet. Asian J. Exper. Sci. 21(2):179-190.
620. Cairns, J., Jr. 2007. The role of constructed ecosystems in an era of rapid climate change. Asian J. Exper. Sci. 21(1):1-10.
621. Cairns, J., Jr. 2007. Sustainable coevolution. Int. J. Sustain. Develop. World Ecol. 14(1):103-108.
622. Cairns, J., Jr. 2008. Assimilative capacity revisited. Asian J. Exper. Sci. 22(2)Supplement:177-182.
623. Cairns, J., Jr. 2008. Career transition at Rocky Mountain Biological Laboratory. Newsletter: Winter. Crested Butte, CO.
624. Cairns, J., Jr. 2008. Coping with environmental refugees. Sci. Soc. 6(1):19-25.
625. Cairns, J., Jr. 2008. Destroying paradise. Asian J. Exper. Sci. 22(3):177-181.

626. Cairns, J., Jr. 2008. Ecotoxicology risk assessment for a changing world. Sci. Soc. 6(2):113-122.
627. Cairns, J., Jr. 2008. Eliminating ecological overshoot. Asian J. Exper. Sci. 22(1):25-31.
628. Cairns, J., Jr. 2008. The globalization of *Homo sapiens*. Asian J. Exper. Sci. 22(1):1-12.
629. Cairns, J., Jr. 2008. Preparing for the post-industrial age. Asian J. Exper. Sci. 22(1):13-24.
630. Cairns, J., Jr. 2008. Preparing for the post-industrial age. Renew. Resourc. J. 25(2):6-12.
631. Cairns, J., Jr. 2008. Red alert – climate change: This is the last chance. VA Tech Research Magazine Summer: Inside front cover.
632. Cairns, J., Jr. 2008. Science and values for a finite planet. Asian J. Exper. Sci. 22(3):415-426.
633. Cairns, J., Jr. 2008. Terrorist attacks vs cultural suicide: which most threatens human survival? Asian J. Exper. Sci. 22(3):183-188.
634. Cairns, J., Jr. 2009. Biospheric health and integrity: the top priority for humankind. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec36401/index.htm>.
635. Cairns, J., Jr. 2009. The biospheric life support system: a unifying concept for ecotoxicologists and ecologists. Learned Discourses Section, Integrated Environ. Assess. Manage. 5(3):487-488.
636. Cairns, J., Jr. 2009. Blood, toil, tears, and sweat. Asian J. Exper. Sci. 23(1):7-17.
637. Cairns, J., Jr. 2009. The contextual components of ecotoxicology. Learned Discourses Section, Integrated Environ. Assess. Manage. 5(2):349-350. <http://www.setacjournals.org/perlserv/?request=get-document&doi=10.1897%2F1551-3793-5.3.349.b>.
638. Cairns, J., Jr. 2009. Contextual disparities in pro-life positions. Asian J. Exper. Sci. 23(3):575—580.
639. Cairns, J., Jr. 2009. Does intelligence provide survival value? The Social Contract 20(1):52-57.
640. Cairns, J., Jr. 2009. Eco-logy versus eco-nomics. Asian J. Exper. Sci. 23(3):377-384.
641. Cairns, J., Jr. 2009. The end of the car culture and the reemergence of public transportation. Asian J. Exper. Sci. 23(3):419-429.
642. Cairns, J., Jr. 2009. Global climate pacts: self destructive or successful? Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec36631/index.htm>.
643. Cairns, J., Jr. 2009. Is *Homo sapiens* just another stochastic event in the history of life on Earth? Asian J. Exper. Sci. 23(1):285-292.
644. Cairns, J., Jr. 2009. Klimakatastrophen (climate disasters). Asian J. Exper. Sci. 23(1):275-284.
645. Cairns, J., Jr. 2009. Some consequences of the inability to halt global climate change. Asian J. Exp. Sci. 23(1):581-588.
646. Cairns, J., Jr. 2009. Sovereignty in an era of klimakatastrophen. Asian J. Exper. Sci. 23(1):1-6.
647. Cairns, J., Jr. 2009. Tribal to global: can humankind make the transition in time? Asian J. Exper. Sci. 23(3):369-376.
648. Cairns, J., Jr. 2009. Two estranged cultures. Sci. Soc. 7(2):107-111.
649. Frase, B. A. and J. Cairns, Jr. 2009. Ecological restoration of Alder Creek, Colorado, USA. Sci. Soc. 7(1):5-8.

650. Atkinson, R. B., J. E. Perry, G. B. Noe, W. L. Daniels, and J. Cairns, Jr. 2010. Primary productivity in 20-year old created wetlands in Southwest Virginia. Wetlands 30(2):200-210.
651. Cairns, J., Jr. 2010. Biospheric changes are threat multipliers. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec37481/001.htm>
652. Cairns, J., Jr. 2010. Biospheric feedback loops and rapid global climate change. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec38611/001.htm>.
653. Cairns, J., Jr. 2010. Co-evolving with the present biosphere. Asian J. Exper. Sci. 24(2):185-188.
654. Cairns, J., Jr. 2010. Communicating the processes of science to the news media, politicians, and the public. Learned Discourses Section, Integrated Environ. Assess. Manage. 6:783-784.
655. Cairns, J., Jr. 2010. Eco-ethics and sustainability ethics to protect the biospheric life support system. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec37061/001.htm>
656. Cairns, J., Jr. 2010. The effect of environmental refugees upon biospheric health and integrity. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec37961/001.htm>.
657. Cairns, J., Jr. 2010. Environmental refugees: Ethical issues involving overpopulation. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec37171/001.htm>
658. Cairns, J., Jr. 2010. Expanding ecotoxicology to enhance the health of the biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec37301/001.htm>
659. Cairns, J., Jr. 2010. Garrett Hardin's lifeboat ethics applied to environmental migrants. The Social Contract Summer:275-280.
660. Cairns, Jr., Jr. 2010. Global crisis collaboration: the key to survival of civilization in the 21st century. Asian J. Exper. Sci. 24(1):33-38.
661. Cairns, J., Jr. 2010. Going beyond tipping points. Asian J. Exper. Sci. 8(2):107-110.
662. Cairns, J., Jr. 2010. Has human society passed a tipping point for effective reduction of greenhouse gas emissions? Asian J. Exper. Sci. 24(2):297-299.
663. Cairns, J., Jr. 2010. The human economy is a subset of the biosphere. Asian J. Exper. Sci. 24(2):269-270.
664. Cairns, J., Jr. 2010. Incorporating environmental variability from rapid climate change into ecotoxicology tests. Learned Discourses Section, Integrated Environ. Assess. Manage. 6(3):502-503.
665. Cairns, J., Jr. 2010. Irreversible climate change will also change environmental assessment and management. Learned Discourses Section, Integrated Environ. Assess. Manage. 6(1):190-191.
666. Cairns, J., Jr. 2010. Life boat ethics revisited: what should be the reaction to the Maldives crisis? Asian J. Exper. Sci. 24(1):17-20.
667. Cairns, J., Jr. 2010. Monitoring biospheric health and integrity. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec36771/index.htm>.
668. Cairns, J., Jr. 2010. Six interactive global crises. Asian J. Exper. Sci. 24(2):227-230.
669. Cairns, J., Jr. 2010. Slowing down biospheric change. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec40521/001.htm>. Also in Spanish.

670. Cairns, J., Jr. 2010. Societal adaptation to a badly damaged biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec40121/001.htm>.
671. Cairns, J., Jr. 2010. Sustainability and the biospheric life support system. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec37491/001.htm>.
672. Cairns, J., Jr. 2010. Threats to the biosphere: eight interactive global crises. J. Cosmology 8:1906-1915.
673. Cairns, J., Jr. 2010. Where do we come from? What are we? Where are we going?: Ethics in an era of human-influenced rapid climate change. Asian J. Exper. Sci. 24(1):1-10.
674. Cairns, J., Jr. 2011. Biospheric change and species selection. Asian J. Exper. Sci. 25(1):13-14.
675. Cairns, J., Jr. 2011. Carrying capacity for humans in a financially globalized world. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec45221/001.htm>.
676. Cairns, J., Jr. 2011. Changing behaviors to nurture the Biosphere is the right thing to do. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec41381/001.htm>.
677. Cairns, J., Jr. 2011. Chaos theory and biospheric "surprises." Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec42731/001.htm>.
678. Cairns, J., Jr. 2011. Dumb growth and the Biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec41681/001.htm>.
679. Cairns, J., Jr. 2011. Earth's Biosphere: the global commons. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec43351/001.htm>.
680. Cairns, J., Jr. 2011. Economic growth and the Biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec45041/001.htm>.
681. Cairns, J., Jr. 2011. Eliminating the biospheric refugee crisis. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec44231/001.htm>.
682. Cairns, J., Jr. 2011. Human effects upon evolutionary processes in the Biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec41961/001.htm>.
683. Cairns, J., Jr. 2011. Is it safe to use the word "safe"? Learned Discourses Section, Integrated Environ. Assess. Manage. 7:506.
684. Cairns, J., Jr. 2011. Letter to the Editor: A call for humility and an end to humankind's disruption of evolutionary processes. Integrated Environ. Assess. Manage. 8(1):2-3.
685. Cairns, J., Jr. 2011. Negotiating without goals or science: have the risks of climate change diminished? Asian J. Exper. Sci. 25(1):1-3.
686. Cairns, J., Jr. 2011. Primary sources of human wealth: the biosphere and knowledge. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec45201/001.htm>.
687. Cairns, J., Jr. 2011. The sword of Damocles and the Biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec41211/001.htm>.
688. Cairns, J., Jr. 2012. Assisted biotic colonization to preserve the present biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48391/index.htm>.
689. Cairns, J., Jr. 2012. Catastrophic climate change and the biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48731/index.htm>.

690. Cairns, J., Jr. 2012. The catastrophic risks of ignoring the “new normal” climate. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48161/index.htm>.
691. Cairns, J., Jr. 2012. Climate wars, scientific evidence, and the future of *Homo sapiens*. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec46651/001.htm>.
692. Cairns, J., Jr. 2012. Critical thinking, the common good, and the new normal global climate. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47991/index.htm>.
693. Cairns, J., Jr. 2012. Defining goals and conditions for the present biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47771/001.htm>.
694. Cairns, J., Jr. 2012. Deliberately choosing uncertainty by rejecting science. The Social Contract 22(4):30-32.
695. Cairns, J., Jr. 2012. Deliberately creating an alien planet. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48751/index.htm>.
696. Cairns, J., Jr. 2012. Denial of scientific evidence: a major threat to the biosphere (and you). Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec46251/index.htm>.
697. Cairns, J., Jr. 2012. Eco-ethics and the biosphere. Sci. Soc.10(1):5-10.
698. Cairns, J., Jr. 2012. Ethics in science and environmental politics: issues for interdisciplinary teams. The Pantaneto Forum 45.
699. Cairns, J., Jr. 2012. Evolving toward an evidence-based /ethical value-based society to nurture Earth's biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47851/index.htm>.
700. Cairns, J., Jr. 2012. Facing reality on sustainability. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec45491/001.htm>
701. Cairns, J., Jr. 2012. Facing reality to preserve the present biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48611/index.htm>.
702. Cairns, J., Jr. 2012. In Spanish: Frenar el cambio en la biósfera. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec46711/001.htm>.
703. Cairns, J., Jr. 2012. Future availability of biospheric resources: how will humans frame their world views? Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48701/index.htm>.
704. Cairns, J., Jr. 2012. Getting to know humanity's life support system: Earth's biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47131/index.htm>.
705. Cairns, J., Jr. 2012. Living within biospheric limits. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec46401/index.htm>.
706. Cairns, J., Jr. 2012. Mutually assured destruction (MAD): the biosphere, *Homo sapiens*, and the human economy. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47801/index.htm>.
707. Cairns, J., Jr. 2012. The ninth threat to the biosphere: human thought processes. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec46811/index.htm>.

708. Cairns, J., Jr. 2012. Reason awake: catastrophes may fail to change public indifference to biospheric damage. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47561/index.htm>.
709. Cairns, J., Jr. 2012. To survive, humanity must learn about the larger system of which it is a part: the present biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec48421/index.htm>.
710. Cairns, J., Jr. 2012. Teoría del caos y “sorpresas” biosféricas. Translated into Spanish by Nicolás Padilla Raygoza and Ana María Padilla Aguirre. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super7/48011-49001/48501.ppt>.
711. Cairns, J., Jr. 2012. Transition from a human centered to a biosphere centered world view. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47311/index.htm>.
712. Cairns, J., Jr. 2012. The ultimate tipping point: destruction of the present Biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec45641/001.htm>.
713. Cairns, J., Jr. 2012. Using assisted biotic colonization to cope with habitat loss due to sea level rise. *Learned Discourses Section, Integr. Environ. Assess. Manage.*, online December 27. 9(1):166-167.
714. Cairns, J., Jr. 2012. Using without abusing the biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47441/index.htm>.
715. Cairns, J., Jr. 2012. Warnings from the biosphere. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec47001/index.htm>.
716. Cairns, J., Jr. Submitted. A laudatum – Professor Arvind L. Bhatia.
717. Cairns, J., Jr. In prep. The effects of the biotic crisis on evolution and Earth's carrying capacity.
718. Cairns, J., Jr. In prep. Global discourse on interactive global crises. *Asian J. Exper. Sci.*
719. Cairns, J., Jr. Invited paper – In prep. Reflections on the extinction of *Homo sapiens*. *Asian J. Exper. Sci.*

ABSTRACTS ONLY
(not associated with papers)

1. Foster, N. R. and J. Cairns, Jr. 1966. Effects of alkyl benzene sulfonate on breeding behavior of flagfishes, Jordanella floridae. Assoc. Southeast. Biol. Bull. 13(2):34.
2. Cairns, J., Jr. 1969. New concepts for monitoring aquatic life systems. Industrial Waste Forum, Proc. 42nd Annual Conf., Water Pollution Control Federation, Session 16, Abstract No. 4.
3. Dickson, K. L. and J. Cairns, Jr. 1969. The use of the sequential comparison index as a biological evaluation of stream pollution. Assoc. Southeast. Biol. Bull. 16(2):49.
4. Sparks, R. E., A. G. Heath, and J. Cairns, Jr. 1969. Some effects of zinc on the EKG and breathing signal of bluegills (Lepomis macrochirus Rafinesque). Assoc. Southeast. Biol. Bull. 16(2):69.
5. Waller, W. T. and J. Cairns, Jr. 1969. Changes in movement patterns of fish exposed to sublethal concentrations of zinc. Assoc. Southeast. Biol. Bull. 16(2):70.
6. Cairns, J., Jr., M. L. Dahlberg, K. L. Dickson, N. Smith, and W. T. Waller. 1970. The relationship of fresh-water protozoan communities to the MacArthur-Wilson equilibrium model. VA. J. Sci. 21(3):112.
7. Cairns, J., Jr., K. L. Dickson, R. E. Sparks, and W. T. Waller. 1970. Rapid biological information systems for the assessment of pollution. VA. J. Sci. 21(3):112.
8. Cairns, J., Jr., K. L. Dickson, R. E. Sparks, and W. T. Waller. 1970. Reducing the time lag in biological information systems. Am. Chemical Society Abstracts of Papers, 159th Annual Meeting, WATR 43.
9. Crossman, J. S., J. Cairns, Jr., and K. L. Dickson. 1970. The biological recovery of the Clinch River following a fly-ash spill. Assoc. Southeast. Biol. Bull. 17(2):39.
10. Dickson, K. L., J. C. Arnold, and J. Cairns, Jr. 1970. The use of basket-type artificial substrate samplers for stream pollution monitoring. Assoc. Southeast. Biol. Bull. 17(2):40.
11. Lanza, G. R., J. Cairns, Jr., and K. L. Dickson. 1970. The use of a simple staining technique on diatom populations as a possible indicator of thermal pollution. Assoc. Southeast. Biol. Bull. 17(2):52.
12. Ruthven, J. and J. Cairns, Jr. 1970. The relation between artificial substrate size and the number of fresh-water protozoan species. Assoc. Southeast. Biol. Bull. 17(2):1.
13. Sparks, R. E., W. T. Waller, J. Cairns, Jr., and A. G. Heath. 1970. Diurnal variation in the behavior and physiology of bluegills (Lepomis macrochirus Raf.). Assoc. Southeast. Biol. Bull. 17(3):90.
14. Almeida, S. P., D. Del Balzo, J. Cairns, Jr., and K. L. Dickson. 1971. Holographic microscopy – with applications to water pollution. VA. J. Sci. 22(3):88.
15. Benfield, E. F., K. L. Dickson, D. P. Klarberg, and J. Cairns, Jr. 1971. Pre-impoundment water quality survey on the New River: A preliminary report. Assoc. Southeast. Biol. Bull. 18(2):27.
16. Burton, D. T., A. H. Jones, and J. Cairns, Jr. 1971. Further studies which support the mucous coagulation-suffocation hypothesis in fish exposed to acutely toxic concentrations of zinc. Assoc. Southeast. Biol. Bull. 18(2):29.
17. Burton, D. T., A. H. Jones, and J. Cairns, Jr. 1971. A preliminary study which supports the mucous coagulation-suffocation hypothesis in fish exposed to acutely toxic concentrations of zinc. Assoc. Southeast. Biol. Bull. 18(2):28.
18. Cairns, J., Jr. 1971. Effects of heated waste water discharge into aquatic ecosystems. 161st American Chemical Soc. National Meeting, Div. of Ind. and Eng. Chem., Abstract 78.
19. Cairns, J., Jr. 1971. The relationship between national, state, and regional water quality criteria. Proc. Volt Ecology Seminar, pp. 13-14.

20. Cairns, J., Jr., K. L. Dickson, G. R. Lanza, S. P. Almeida, and D. Del Balzo. 1971. Pattern recognition of diatoms by laser holography in biological monitoring of pollution. VA. J. Sci. 22(3):85.
21. Lanza, G. R. and J. Cairns, Jr. 1971. Certain effects of sudden temperature increases upon diatom populations. Assoc. Southeast. Biol. Bull. 18(2):42.
22. Morgan, E. L., D. T. Burton, and J. Cairns, Jr. 1971. A time until death study of bluegill sunfish (Lepomis macrochirus Raf.) exposed to simultaneous thermal and zinc stress. Assoc. Southeast. Biol. Bull. 18(2):47.
23. Ruthven, J. A. and J. Cairns, Jr. 1971. The distribution of fresh-water protozoans on Abaco Island. Assoc. Southeast. Biol. Bull. 18(2):53.
24. Sparks, R. E., G. Suter, II, R. A. McNabb, and J. Cairns, Jr. 1971. Coughing and other respiratory symptoms in bluegills (Lepomis macrochirus Rafinesque) exposed to lethal and sublethal concentrations of zinc. Assoc. Southeast. Biol. Bull. 18(2):56.
25. Yongue, W. H., Jr. and J. Cairns, Jr. 1971. Colonization and persistence of fresh-water protozoans in artificial substrates suspended in a small pond in North Carolina. Assoc. Southeast. Biol. Bull. 18(2):63.
26. Yongue, W. H., Jr. and J. Cairns, Jr. 1971. Colonization of polyurethane substrates by fresh-water protozoans. J. Elisha Mitchell Sci. Soc. 87(4).
27. Yongue, W. H., Jr. and J. Cairns, Jr. 1971. Freshwater protozoan species overlap in natural and artificial substrates. VA. J. Sci. 22(3):103.
28. Benfield, E. F., A. C. Hendricks, and J. Cairns, Jr. 1972. The suitability of two types of artificial substrates in assessing the impact of an industry's effluent on stream macrobenthic community structure. Assoc. Southeast. Biol. Bull. 19(2):53.
29. Burton, D. T., E. L. Morgan, and J. Cairns, Jr. 1972. The effect of increasing temperatures on mortality rates of bluegills (Lepomis macrochirus Raf.) exposed to a toxic concentration of zinc. Assoc. Southeast. Biol. Bull. 19(2):58.
30. Crossman, J. S. and J. Cairns, Jr. 1972. A comparison of two macroinvertebrate samplers and regular stream sampling techniques. Assoc. Southeast. Biol. Bull. 19(2):62.
31. Crossman, J. S., J. C. Smrchek, and J. Cairns, Jr. 1972. A preliminary study of the Pelecypoda in the upper Clinch River. Assoc. Southeast. Biol. Bull. 19(2):62.
32. Dickson, K. L. and J. Cairns, Jr. 1972. The sequential comparison index--a community structure analysis. Limnol. Oceanogr. Abstracts of 1972 Annual Meeting.
33. Herricks, E. E. and J. Cairns, Jr. 1972. The recovery of stream macrobenthic communities from the effects of acid mine drainage. Assoc. Southeast. Biol. Bull. 19(2):74.
34. Klarberg, D. P., J. Cairns, Jr., K. L. Dickson, A. C. Hendricks, and E. F. Benfield. 1972. A pre-impoundment survey of the New River in Southeast Virginia. Assoc. Southeast. Biol. Bull. 19(2):110.
35. Morgan, E. L., J. Cairns, Jr., and R. E. Sparks. 1972. Response of fish in a pollution monitoring system to a diurnal temperature cycle. Assoc. Southeast. Biol. Bull. 19(2):86.
36. Morgan, E. L., R. E. Sparks, J. A. Garvin, and J. Cairns, Jr. 1972. 24, 48, and 96 hour LC-50 for bluegills (Lepomis macrochirus Raf.) exposed to hexachlorophene. VA. J. Sci. 23(3):114.
37. Wilson, J. H., A. C. Hendricks, K. L. Dickson, and J. Cairns, Jr. 1972. An example of the use of preconstruction ecological surveys in regional planning. Assoc. Southeast. Biol. Bull. 19(2):110.
38. Yongue, W. H., Jr. and J. Cairns, Jr. 1972. A survey of the protozoan species in the Radford Army Arsenal length of the New River, Virginia. J. North Carolina Acad. Sci.

39. Buikema, A. L., Jr. and J. Cairns, Jr. 1973. Development of planarian bioassay techniques. Am. Phil. Soc. Yearbook, pp. 299-300.
40. Cairns, J., Jr. 1973. Effects and methods of control of thermal discharges. Sec. 104(t) Federal Water Pollution Control Act Amendments 1972, Part 3:1433-1502.
41. Cairns, J., Jr. 1973. The maintenance of equilibrium in freshwater protozoan communities. 5th International Congress of Protozoology. Progress in Protozoology, Univ. de Clermont - Sciences Exactes et Naturelles, 74 pp.
42. Herricks, E. E. and J. Cairns, Jr. 1973. The effect of high stream flow on aquatic macrobenthic communities. Assoc. Southeast. Biol. Bull. 20(2):59.
43. Klarberg, D. P., E. F. Benfield, J. Cairns, Jr., K. L. Dickson, and A. C. Hendricks. 1973. Macrobenthos of the upper New River and major tributaries. Assoc. Southeast. Biol. Bull. 29(2):64.
44. Morgan, E. L. and J. Cairns, Jr. 1973. An early warning system for detecting industrial pollution. Am. Fish. Soc., 103rd Annual Meeting.
45. Morgan, E. L., J. Cairns, Jr., and R. E. Sparks. 1973. Biological monitoring a diurnal temperature change using bluegills (Lepomis macrochirus Raf.) as sensors. Trans. Tenn. Acad. Sci. 48(2):56.
46. Morgan, E. L., J. Cairns, Jr., and R. E. Sparks. 1973. Biological monitoring the combined effects of a copper and zinc mixture on bluegills (Lepomis macrochirus Raf.) swimming activity. Assoc. Southeast. Biol. Bull. 20(2):71.
47. Smrcek, J. C., J. Cairns, Jr., and K. L. Dickson. 1973. Preliminary eutrophication studies in model laboratory streams. Assoc. Southeast. Biol. Bull. 20(2):83.
48. Sullivan, G. W., A. L. Buikema, Jr., and J. Cairns, Jr. 1973. Acute bioassays for the assessment of heavy metal pollution using the freshwater littoral rotifer, Philodina sp. VA. J. Sci. 24(3):120.
49. Yongue, W. H., Jr. and J. Cairns, Jr. 1973. The influence of impoundments and waste discharges upon protozoan communities. J. North Carolina Acad. Sci.
50. Buikema, A. L., Jr., J. Cairns, Jr., and T. H. Krakuer. 1974. Preliminary studies on the culture methods for Polyarthra vulgaris (Rotifera). Assoc. Southeast. Biol. Bull. 21(2):43.
51. Buikema, A. L., Jr., G. W. Sullivan, and J. Cairns, Jr. 1974. Factors affecting the toxicity of zinc to Philodina acuticornis (Rotifera). Assoc. Southeast. Biol. Bull. 21(2):44.
52. Cairns, J., Jr. 1974. Biological monitoring. Symposium on Chemical Oceanography, Southeastern Regional Meeting, American Chemical Society.
53. Cairns, J., Jr., K. L. Dickson, and G. F. Westlake. 1974. Instrumentation for biological monitoring of industrial wastes. International Seminar and Exposition on Water Resources Instrumentation. Abstracts of Papers, pp. 85-86.
54. Camp, F. A., A. C. Hendricks, and J. Cairns, Jr. 1974. Zinc toxicity studies with algal bioassays. VA. J. Sci. 25(2):61.
55. Cherry, D. S., K. L. Dickson, and J. Cairns, Jr. 1974. Temperature response of fish at different levels of acclimation. Assoc. Southeast. Biol. Bull. 21(2):46.
56. Dickson, K. L., A. C. Hendricks, J. S. Crossman, and J. Cairns, Jr. 1974. The effects of intermittently chlorinated cooling tower blowdown on fish and invertebrates. Assoc. Southeast. Biol. Bull. 21(2):51.
57. Edmunds, P., A. L. Buikema, Jr., and J. Cairns, Jr. 1974. Preliminary limnological investigations on a spring-fed impoundment, Pandapas Pond, Jefferson National Forest. Assoc. Southeast. Biol. Bull. 21(2):52.

58. Gregg, B. C., J. M. Dolan, III, J. Cairns, Jr., K. L. Dickson, and A. C. Hendricks. 1974. Toxicity tests with surfactants and the mayfly *Isonychia* (Ephemeroptera:Isonchiidae). Assoc. Southeast. Biol. Bull. 21(2):58.
59. Herricks, E. E. and J. Cairns, Jr. 1974. The recovery of stream macrobenthos from low pH stress. 22nd Annual Meeting Midwest Benthological Society, 19 pp.
60. Hocutt, C. H., R. L. Kaesler, M. T. Masnik, and J. Cairns, Jr. 1974. Biological assessment of water quality in a large river system: An evaluation of a method for fishes. Assoc. Southeast. Biol. Bull. 21(2):62.
61. Klarberg, D. P., J. Cairns, Jr., K. L. Dickson, A. C. Hendricks, and E. F. Benfield. 1974. Chemical monitoring of the upper New River. Assoc. Southeast. Biol. Bull. 21(2):65.
62. Plafkin, J. L. and J. Cairns, Jr. 1974. Response of protozoan communities exposed to chlorine stress. Assoc. Southeast. Biol. Bull. 21(2):75.
63. See, C. L., A. L. Buikema, Jr., and J. Cairns, Jr. 1974. The effects of selected toxicants on survival of Dugesia tigrina (Turbellaria). Assoc. Southeast. Biol. Bull. 21(2):82.
64. See, C. L., A. L. Buikema, Jr., and J. Cairns, Jr. 1974. The effects of zinc on the photonegative response of Dugesia tigrina (Turbellaria). Assoc. Southeast. Biol. Bull. 21(2):82.
65. Smrcek, J. C., J. Cairns, Jr., and K. L. Dickson. 1974. Changes in the productivity of laboratory periphyton communities subjected to various nutrient (tertiary treatment) removal schemes. Assoc. Southeast. Biol. Bull. 21(2):85.
66. Stauffer, J. R., Jr., J. Cairns, Jr., and K. L. Dickson. 1974. Distribution of fish in relation to thermal discharges. Assoc. Southeast. Biol. Bull. 21(2):86.
67. van der Schalie, W. H., J. Cairns, Jr., W. F. Calhoun, and G. F. Westlake. 1974. The toxicity of zinc to Carrasium auratus L. (Cyprinidae) in relation to elapsed time from feeding. Assoc. Southeast. Biol. Bull. 21(2):80.
68. Wright, J., Jr., F. A. Camp, and J. Cairns, Jr. 1974. Preliminary algal bioassays to determine nutrient limiting algal productivity in Mountain Lake, Virginia. Assoc. Southeast. Biol. Bull. 21(2):92.
69. Yongue, W. H., Jr. and J. Cairns, Jr. 1974. A preliminary study: The effect of seasonal change on freshwater protozoan communities in the epilimnion of Douglas Lake, Michigan. Assoc. Southeast. Biol. Bull. 21(2):93.
70. Cairns, J., Jr. 1975. Natural adjustment factors. Proc. 48th Annual Meeting Water Pollution Control Federation.
71. Cairns, J., Jr. 1975. Zooperiphyton (protozoa) as indicators of water quality. J. Physiology 2(supplement):23-24.
72. Cairns, J., Jr., K. L. Dickson, B. C. Gregg, D. I. Messenger, J. L. Plafkin, and W. van der Schalie. 1975. Effects of intermittent chlorination on aquatic organisms and communities. Proc. 48th Annual Meeting Water Pollution Control Federation.
73. Gregg, B. C., E. F. Benfield, J. Cairns, Jr., and A. G. Heath. 1975. The effects of chlorine and temperature on stream invertebrates. VA. J. Sci.
74. Klarberg, D. P., E. F. Benfield, and J. Cairns, Jr. 1975. Yearly observations of the Trichoptera of the upper New River. VA. J. Sci.
75. Lee, D. R., A. L. Buikema, Jr., and J. Cairns, Jr. 1975. The toxicity of a simulated refinery effluent to some freshwater animals. Assoc. Southeast. Biol. Bull. 22(2):167.
76. Morgan, E. L., J. Cairns, Jr., and R. E. Sparks. 1975. Swimming response of bluegills (Lepomis macrochirus Raf.) to harmful zinc concentrations after long-term exposure to "safe" concentration. Assoc. Southeast. Biol. Bull. 22(2):69.
77. See, C., A. L. Buikema, Jr., and J. Cairns, Jr. 1975. The effect of sublethal concentrations of zinc and nickel on the photonegative response of Dugesia tigrina. J. VA. Acad. Sci.

78. Yongue, W. H., Jr. and J. Cairns, Jr. 1975. Protozoan colonization and community composition. J. North Carolina Acad. Sci.
79. Abbott, T. M., J. Cairns, Jr., and K. L. Dickson. 1976. Corbicula manilensis (Asiatic clam) population zonation within a stratified reservoir. Assoc. Southeast. Biol. Bull. 23(2):39.
80. Buikema, A. L., Jr., J. D. Miller, and J. Cairns, Jr. 1976. Usefulness of the grass shrimp, Palaemonetes (Decapoda) to screen refinery effluents. Assoc. Southeast. Biol. Bull. 23(2):47.
81. Cairns, J., Jr. 1976. Zooperiphyton (protozoa) as indicators of water quality. J. Phycol. 11:23.
82. Cairns, J., Jr. and K. L. Dickson. 1976. Elasticity, inertia, and resiliency of water ecosystems. Program and Abstracts 49th Annual Meeting of the Northwest Scientific Association, p. 42, abstract 170.
83. Cherry, D. S., K. L. Dickson, R. C. Hoehn, and J. Cairns, Jr. 1976. Site specific field laboratory avoidances of fish to chlorinated discharges. Assoc. Southeast. Biol. Bull. 23(2):50.
84. Clark, J. R., K. L. Dickson, and J. Cairns, Jr. 1976. An evaluation of methods used to estimate periphyton biomass. North American Benthological Society, La Cross, WI.
85. Dickson, K. L., J. Cairns, Jr., J. H. Rodgers, Jr., and J. R. Clark. 1976. Monitoring the effects of pollutants on aquatic ecosystem functions. Water Pollut. Control Fed. 49th Annual Conference, Minneapolis, MN.
86. Jones, R. C., W. H. Yongue, Jr., and J. Cairns, Jr. 1976. Vertical gradients in substrate-associated protozoan community structure in a stratified freshwater lake. Assoc. Southeast. Biol. Bull. 23(2):70.
87. Maciorowski, A. F., G. F. Westlake, E. F. Benfield, and J. Cairns, Jr. 1976. A technique utilizing crayfish locomotor activity as a sensor in an automated biological monitoring system. Assoc. Southeast. Biol. Bull. 23(2):78.
88. Miles, J., A. L. Buikema, Jr., and J. Cairns, Jr. 1976. Effects of temperature on the toxicity of selected compounds to freshwater invertebrates. VA. J. Sci. 27(2):47.
89. Rodgers, J. H., Jr., K. L. Dickson, and J. Cairns, Jr. 1976. Laboratory and field studies of sulfur-35 sulfate assimilation by periphytic organisms. Assoc. Southeast. Biol. Bull. 23(2):91.
90. Rodgers, J. H., Jr., K. L. Dickson, and J. Cairns, Jr. 1976. Primary production and degradation rates of submergent and emergent macrophytes of the New River, Glen Lyn, Virginia. Assoc. Southeast. Biol. Bull. 23(2):91.
91. Rutherford, C. L., A. L. Buikema, Jr., D. R. Armant, and J. Cairns, Jr. 1976. The usefulness of enzyme inhibition for screening petroleum effluents. Assoc. Southeast. Biol. Bull. 23(2):93.
92. See, C. L., A. L. Buikema, Jr., and J. Cairns, Jr. 1976. The toxicity of combinations of various metal waste products to rotifers. VA. J. Sci. 27(2):49.
93. Sherberger, S. R., A. L. Buikema, Jr., and J. Cairns, Jr. 1976. Effects of short term temperature shock on growth, molting, reproduction and survival of Daphnia pulex. Assoc. Southeast. Biol. Bull. 23(2):95.
94. Cairns, J., Jr. 1977. Determining ecological assimilative capacity for industrial wastes. Proc. 5th Annual Meeting Water Pollution Control Federation, Philadelphia, PA.
95. Cairns, J., Jr. 1977. Effects of industrial wastes on freshwater protozoans. 5th International Congress on Protozoology, 80.
96. Clark, J. R., J. H. Rodgers, Jr., K. L. Dickson, and J. Cairns, Jr. 1977. Indices for organic carbon partitioning in Aufwuchs communities. Assoc. Southeast. Biol. Bull. 24(2):43.
97. Clark, J. R., D. I. Messenger, K. L. Dickson, and J. Cairns, Jr. 1977. A method for simultaneous extraction of chlorophyll and ATP from Aufwuchs. Am. Soc. Limnol. Oceanogr., East Lansing, MI.

98. Gruber, D., J. Cairns, Jr., K. L. Dickson, and A. C. Hendricks. 1977. Progress on a second generation of an automated continuous biological monitoring system. Number 188 in M. P. Dunford, ed. Contributed Papers, 143rd National Meeting. American Association for the Advancement of Science, Washington, DC.
99. Gruber, D., J. Cairns, Jr., K. L. Dickson, and A. C. Hendricks. 1977. A cinematographic investigation into the fish's bioelectric breathing signal. No. 44, p. 11 in Energy and Environmental Stress in Aquatic Systems, Savannah River Ecology Laboratory.
100. Hendricks, A. C., D. Gruber, J. Cairns, Jr., and K. L. Dickson. 1977. Continuous biological monitoring of industrial wastes utilizing a minicomputer for data evaluation. Page 306 in DIS Congress Service, Copenhagen.
101. Honig, R. A., M. J. McGinniss, A. L. Buikema, Jr., and J. Cairns, Jr. 1977. Interaction of temperature and toxicants on the growth rates of Chilomonas paramecium (Flagellata) populations. Assoc. Southeast. Biol. Bull. 24(2):59.
102. Larrick, S. R., D. S. Cherry, K. L. Dickson, and J. Cairns, Jr. 1977. Effects of temperature on the chlorine avoidance behavior of the golden shiner. Assoc. Southeast. Biol. Bull. 24(2):64.
103. Lubinski, K., K. L. Dickson, and J. Cairns, Jr. 1977. Changes in locomotor behavior of bluegills, Lepomis macrochirus (Raf.), during acclimation in observation chamber. Trans. Ill. State Acad. Sci. 70(2):238.
104. Maciorowski, A. F., J. Cairns, Jr., and E. F. Benfield. 1977. Laboratory simulation of an in-plant biomonitoring system using crayfish activity rhythms to detect induced toxic stress. N. Am. Benthological Soc. Proc. 25th Annual Meeting, Roanoke, VA., p. 18.
105. McGinniss, M. J., A. L. Buikema, Jr., and J. Cairns, Jr. 1977. Temperature effects on the acute toxicity of two simulated effluents to Daphnia pulex (Cladocera). Assoc. Southeast. Biol. Bull. 24(2):68.
106. Potter, W. A., K. L. Dickson, J. Cairns, Jr., and J. R. Stauffer, Jr. 1977. Impingement studies at the Appalachian Power Company's generating station at Glen Lyn, Virginia. Assoc. Southeast. Biol. Bull. 24(2):78.
107. Potter, W. A., K. L. Dickson, J. R. Stauffer, Jr., and J. Cairns, Jr. 1977. Entrainment studies at the Appalachian Power Company's generating station at Glen Lyn, Virginia. Assoc. Southeast. Biol. Bull. 24(2):78.
108. Rodgers, J. H., Jr., J. R. Clark, K. L. Dickson, and J. Cairns, Jr. 1977. Analyses of Aufwuchs communities. Assoc. Southeast. Biol. Bull. 24(2):81.
109. Rodgers, J. H., Jr., J. R. Clark, K. L. Dickson, and J. Cairns, Jr. 1977. Functional responses of Aufwuchs communities to perturbation in artificial streams. Am. Soc. Limnol. Oceanogr., East Lansing, MI.
110. Rodgers, J. H., Jr., J. R. Clark, K. L. Dickson, and J. Cairns, Jr. 1977. Primary production and decomposition of submergent and emergent aquatic vascular plants of the New River, Glen Lyn, Virginia. N. Am. Benthological Soc., Proc. 25th Annual Meeting, Roanoke, VA., p. 26.
111. Abbott, T. M., K. L. Dickson, and J. Cairns, Jr. 1978. The importance of drift and benthic food sources to rainbow (Salmo gairdneri) and brown trout (Salmo trutta) diets in a stream. Assoc. Southeast. Biol. Bull. 25(2):28.
112. Clark, J. R., K. L. Dickson, and J. Cairns, Jr. 1978. Effects of copper sulfate and potassium dichromate on aufwuchs biomass. Assoc. Southeast. Biol. Bull. 25(2):22.
113. Clark, J. R., J. H. Rodgers, Jr., K. L. Dickson, and J. Cairns, Jr. 1978. A benthic diatometer for use in large rivers. N. Am. Benthological Soc., Proc. 26th Annual Meeting, Winnipeg, Manitoba, p. 9.
114. Dickson, K. L., J. Cairns, Jr., J. H. Rodgers, Jr., and J. R. Clark. 1978. Monitoring the effects of pollutants on aquatic ecosystem functions. J. Water Pollut. Control. Fed.
115. Giattina, J. D., D. S. Cherry, S. R. Larrick, J. Cairns, Jr., and K. L. Dickson. 1978. Avoidance behavior of fish to intermittent chlorination in thermally influenced waste water. Assoc. Southeast. Biol. Bull. 25(2):22.

116. Gruber, D., J. Cairns, Jr., K. L. Dickson, A. C. Hendricks, and W.R. Miller, III. 1978. An automated biological monitoring facility for rapidly and continuously assessing industrial effluents. 3rd Annual ASTM Symposium on Aquatic Toxicology.
117. Kaufman, L. H., K. L. Dickson, and J. Cairns, Jr. 1978. Nontaxonomic characteristics of the early colonization process of Aufwuchs in artificial streams. Assoc. Southeast. Biol. Bull. 25(2):19.
118. Larrick, S. R., D. S. Cherry, J. D. Giattina, K. L. Dickson, and J. Cairns, Jr. 1978. The impact of coal ash effluent on heterotrophic bacterial populations. Assoc. Southeast. Biol. Bull. 25(2):22.
119. Lubinski, K. S., K. L. Dickson, and J. Cairns, Jr. 1978. The development of a continuous monitoring system for tracking the swimming patterns of fish. Ethology and Behavioral Biology of Fishes, Illinois State University, p. 9.
120. Miller, J. D., A. L. Buikema, Jr., and J. Cairns, Jr. 1978. Suitability of grass shrimp for toxicity testing of petroleum refinery effluents. Limnol. Oceanogr.
121. Miller, W. R., III, J. Cairns, Jr., D. Gruber, and A. C. Hendricks. 1978. The use of a recent concept in biological monitoring to study the ventilatory rate changes in bluegill sunfish (Lepomis macrochirus) following exposure to chlorine. Am. Zool. 18(3):366.
122. Paul, R. W., Jr., E. F. Benfield, and J. Cairns, Jr. 1978. Effects of thermal discharge on leaf decomposition in a river ecosystem. Societe Internationale Limnologie.
123. Potter, W. A., K. L. Dickson, J. Cairns, Jr., and J. R. Stauffer, Jr. 1978. Temporal distribution of ichthyoplankton drift in the New River in the vicinity of Glen Lyn, Virginia. Assoc. Southeast. Biol. Bull. 25(2):28.
124. Rodgers, J. H., Jr., D. S. Cherry, and J. Cairns, Jr. 1978. Influence of thermal effluent on population dynamics of Asiatic Clam (Corbicula manilensis) in the New River, Virginia. Assoc. Southeast. Biol. Bull. 25(2):22.
125. Rodgers, J. H., Jr., J. R. Clark, J. Cairns, Jr., and K. L. Dickson. 1978. Structure and function of Aufwuchs communities. Microcosms in Ecological Research Symposium, Savannah River Ecology Laboratory, Augusta, GA.
126. Seagle, H. H., Jr., A. C. Hendricks, and J. Cairns, Jr. 1978. Temporal recovery of the lower South Fork of the Shenandoah River as a result of stress reduction. N. Am. Benthological Soc., Proc. 26th Annual Meeting, Winnipeg, Manitoba, p. 43.
127. Abbott, T. M. and J. Cairns, Jr. 1979. The occurrence and characteristics of cellulose and chitinase activity in brook (Salvelinus fontinalis), brown (Salmo trutta), and rainbow (S. gairdneri) trout gastrointestinal tracts. Page 8 in J. Wood, ed. Fifth Annual Scientific Research Meeting, National Park Service - Southeast Region, Gatlinburg, TN.
128. Blackburn, W. B., W. H. Yongue, Jr., and J. Cairns, Jr. 1979. Euglena gracilis, temperature, and LD. VA. J. Sci. 30(2):46.
129. Buikema, A. L., Jr. and J. Cairns, Jr. 1979. Toxicity tests and water quality criteria - a biologist's perspective. 2nd Annual Meeting of the International Society of Petroleum Industry Biologists.
130. Clark, J. R., J. Cairns, Jr., and K. L. Dickson. 1979. Methods for ATP extraction - a review. Assoc. Southeast. Biol. Bull. 26(2):185.
131. Clark, J. R., J. H. Rodgers, Jr., K. L. Dickson, and J. Cairns, Jr. 1979. An artificial stream design for microecosystem research. Microcosms in Ecological Research Symposium, Savannah River Ecology Laboratory, Augusta, GA.
132. Furner, L., D. Gruber, J. Cairns, Jr., and A. C. Hendricks. 1979. A continuous biological monitoring system to predict chronic effects of toxicants. Rapid Methods Research Highlights, EPA, Duluth, MA. 2:7.

133. Giattina, J. D., S. R. Larrick, D. S. Cherry, and J. Cairns, Jr. 1979. A comparison between field and laboratory determined chlorine avoidance thresholds for two cyprinids, *Notropis galacturus* and *N. spilopterus*. Assoc. Southeast. Biol. Bull. 26(2):185.
134. Graney, R. L., D. S. Cherry, J. H. Rodgers, Jr., and J. Cairns, Jr. 1979. Behavioral and lethal responses of the Asiatic clam (*Corbicula fluminea*) to Cu, Zn, Cu-Zn, and K exposures. Assoc. Southeast. Biol. Bull. 26(2):281.
135. Graney, R. L., J. H. Rodgers, Jr., D. S. Cherry, K. L. Dickson, and J. Cairns, Jr. 1979. Heavy metal accumulation by the Asiatic clam (*Corbicula manilensis*) from field conditions and laboratory bioassays. VA. J. Sci. 29(2):61.
136. Gruber, D., J. Cairns, Jr., and A. C. Hendricks. 1979. An automated biological monitoring facility for rapid assessment of industrial effluents. Rapid Methods Research Highlights, EPA, Duluth, MN. 2:3.
137. Gruber, D., J. Cairns, Jr., and A. C. Hendricks. 1979. Industrial effluent monitoring incorporating a recent automated fish biomonitoring system. Fourth Annual ASTM Symposium on Aquatic Toxicology, Chicago, IL.
138. Landers, J. D., Jr., D. Gruber, J. Cairns, Jr., and A. C. Hendricks. 1979. A computerized system for monitoring fish activity. Rapid Methods Research Highlights, EPA, Duluth, MN. 2:4-5.
139. Larrick, S. R., D. S. Cherry, and J. Cairns, Jr. 1979. Participation of central nervous system anesthetics in the cold shock syndrome of freshwater fish. Assoc. Southeast. Biol. Bull. 26(2):149.
140. Miller, W. R., III, J. Cairns, Jr., D. Gruber, and A. C. Hendricks. 1979. The use of a biological monitoring system to detect zinc. Rapid Methods Research Highlights, EPA, Duluth, MN. 2:6-7.
141. Potter, W. A., K. L. Dickson, J. Cairns, Jr., and J. R. Stauffer. 1979. Effects of entrainment on the fish community of the New River, Glen Lyn, Virginia. VA. J. Sci. 19(2):93.
142. Thompson, K. W., J. Cairns, Jr., and A. C. Hendricks. 1979. The effects of pulsed applications of toxicant (zinc and sulfate) on the respiratory behavior of *Lepomis macrochirus*. 109th Annual Meeting of the American Fisheries Society.
143. Webster, J. R., E. F. Benfield, and J. Cairns, Jr. 1979. Model predictions of the effects of stream regulation on particulate organic matter transport. First International Symposium on Regulated Streams, North American Benthological Society, Eric, PA.
144. Yongue, W. H., Jr., J. Cairns, Jr., and M. VanBrunt. 1979. Dynamics of protozoan assemblages in a new pond. VA. J. Sci. 30(20):53.
145. Cairns, J., Jr. 1980. The water management crunch: An ecological perspective. Page 1 in Summaries of invited papers, Soil Conservation Society of America, 35th Annual Meeting.
146. Clark, J. R. and J. Cairns, Jr. 1980. ATP analysis of periphyton communities. North American Benthological Society, Savannah, GA.
147. Hart, K. M., J. Cairns, Jr., and M. S. Henebry. 1980. The effects of a sublethal dose of copper sulfate on the colonization rate of freshwater protozoan communities. Assoc. Southeast. Biol. Bull. 27(2):38.
148. Larrick, S. R., J. R. Clark, D. S. Cherry, and J. Cairns, Jr. 1980. Structural and functional profiles of heterotrophic microbial populations inhabiting perturbed ecosystems. Ecological Society of America, Tucson, AZ.
149. Miller, W. R., III, D. Gruber, J. Cairns, Jr., and A. C. Hendricks. 1980. Biological monitoring of chlorine induced ventilatory changes in bluegill sunfish (*Lepomis macrochirus* Raf.). Oak Ridge Conference, TN.
150. Thompson, K. W., A. C. Hendricks, and J. Cairns, Jr. 1980. The effects of toxicity delivery pattern on the ventilatory responses of bluegill sunfish (*Lepomis macrochirus*) exposed to equivalent, sublethal amounts of heavy metals. WPCF meeting, Houston, TX, Oct. 12-15, 1979.

151. Buikema, A. L., Jr. and J. Cairns, Jr. 1981. Inter- and intralaboratory variation of static acute toxicity data using Daphnia magna exposed to effluents. 6th Symposium on Aquatic Toxicology, Abstract Booklet, American Society for Testing and Materials, Philadelphia, PA.
152. Buikema, A. L., Jr., E. F. Benfield, J. Cairns, Jr., A. C. Hendricks, and J. Kennedy. 1981. Prediction of ecosystem effects from single species toxicity data. Abstracts, Second Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
153. Buikema, A. L., Jr., J. Cairns, Jr., and W. H. Yongue, Jr. 1981. Correlation between the autotrophic index and protozoan invasion rates as indicators of pollution stress. 6th Symposium on Aquatic Toxicology, Abstract Booklet, American Society for Testing and Materials, Philadelphia, PA.
154. Cairns, J., Jr. 1981. The case for simultaneous testing at different levels of biological organization. 6th Symposium on Aquatic Toxicology, Abstract Booklet, American Society for Testing and Materials, Philadelphia, PA.
155. Cairns, J., Jr. 1981. Effects of chemicals on ecosystems. Bull. Ecol. Soc. Am. 62(2):124.
156. Cairns, J., Jr. 1981. Predicting toxicological response from one level of biological organization to another. Abstracts, Second Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
157. Lechleitner, R. A., D. S. Cherry, and J. Cairns, Jr. 1981. Toxicity and histological changes of gill tissue in the stonefly nymph Pteronarsys dorsata (Plecoptera:Pteronarcidae) exposed to fly ash effluent. Abstracts, Second Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
158. Lechleitner, R. A., D. S. Cherry, J. Cairns, Jr., and D. A. Stetler. 1981. The effects of fly ash on three species of stonefly nymphs (Plecoptera). Assoc. Southeast. Biol. Bull. 28(2):93.
159. Nicholson, R. B., D. S. Cherry, J. R. Clark, and J. Cairns, Jr. 1981. Comparisons of Aufwuchs community productivity in natural and artificial streams receiving fly ash effluent. Abstracts, Second Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
160. Nicholson, R. B., D. S. Cherry, J. R. Clark, and J. Cairns, Jr. 1981. Structural and functional measurements utilized to assess the impact of coal ash effluent upon Aufwuchs communities. Assoc. Southeast. Biol. Bull. 28(2):65.
161. Whitaker, J. B., D. S. Cherry, D. A. Stetler, and J. Cairns, Jr. 1981. Behavioral avoidance, toxicity and histological changes of rainbow trout (Salmo gairdneri) exposed to acidic and basic pH conditions. Assoc. Southeast. Biol. Bull. 28(2):90.
162. Buikema, A. L., Jr., J. Cairns, Jr., Y-F Shen, and W. H. Yongue, Jr. 1982. Comparison of protozoan invasion rates and autotrophic index as indicators of stress. 45th Annual Meeting of the American Society of Limnology and Oceanography, Inc.
163. Buikema, A. L., Jr., J. Cairns, Jr., Y-F Shen, and W. H. Yongue, Jr. 1982. Microbial community response to stress. North American Benthological Society, 30th Annual Meeting, Ann Arbor, MI.
164. Buikema, A. L., Jr., B. R. Niederlehner, C. A. Pittinger, and J. Cairns, Jr. 1982. The effect of cadmium on the population growth of an aquatic oligochaete. Society of Environmental Toxicology and Chemistry, Arlington, VA.
165. Lechleitner, R. A., D. S. Cherry, and J. Cairns, Jr. 1982. Heavy metal dynamics in the stonefly nymph Pteronarcys proteus. North American Benthological Society, 30th Annual Meeting, Ann Arbor, MI.
166. Pratt, J. R. and J. Cairns, Jr. 1982. The rate of species export from islands: An experimental approach with protozoan communities. Assoc. Southeast. Biol. Bull. 29(2):79.
167. Specht, W. L., D. S. Cherry, and J. Cairns, Jr. 1982. Alteration and recovery of a stream benthic macroinvertebrate community subjected to coal fly ash effluent. North American Benthological Society, 30th Annual Meeting, Ann Arbor, MI.

168. Thompson, K. W., M. Deaton, R. V. Foutz, J. Cairns, Jr., and A. C. Hendricks. 1982. Application of a time series intervention analysis to describe the effects of an intermittent application of toxicant on the respiratory behavior of the bluegill Lepomis macrochirus. Am. Soc. Ich. Herp.
169. Whitaker, J. B., D. S. Cherry, J. Cairns, Jr., and D. A. Stetler. 1982. Behavioral and histological changes of fish exposed to extreme pH conditions. 112th Annual Meeting of the American Fisheries Society.
170. Whitaker, J. B., D. S. Cherry, J. Cairns, Jr., and D. A. Stetler. 1982. Laboratory and field-determined avoidance responses of fish to acidic and alkaline pH levels. VA. J. Sci. 33(3):152.
171. Buikema, A. L., Jr., J. Cairns, Jr., B. R. Niederlehner, and J. R. Pratt. 1983. Prediction of ecosystem effects: Use of colonization theory. North American Benthological Society, 31st Annual Meeting, University of Wisconsin, LaCrosse.
172. Buikema, A. L., Jr., J. Cairns, Jr., Y-F Shen, and W. H. Yongue, Jr. 1983. Field validation of predictions using multispecies tests. Page 126 in B. T. Walton, chairman. Fourth Annual Meeting: Multidisciplinary Approaches to Environmental Problems. Society of Environmental Toxicology and Chemistry, Rockville, MD.
173. Doane, T. R., A. L. Buikema, Jr., and J. Cairns, Jr. 1983. Sublethal effects of the water soluble fraction of JP-4 fuel on the bluegill sunfish (Lepomis macrochirus). Page 181 in B. T. Walton, chairman. Fourth Annual Meeting: Multidisciplinary Approaches to Environmental Problems, Society of Environmental Toxicology and Chemistry, Rockville, MD.
174. Doane, T. R., A. L. Buikema, Jr., and J. Cairns, Jr. 1983. Sublethal effects of the water soluble fraction of JP-4 fuel on the bluegill (Lepomis macrochirus). VA. J. Sci. 34(3):120.
175. McCormick, P., J. R. Pratt, P. M. Stewart, and J. Cairns, Jr. 1983. Effect of leaf lechates on colonization of artificial substrates. VA. J. Sci. 34(3):127.
176. Pratt, J. R. and J. Cairns, Jr. 1983. Export of species from sources of differing maturities. Assoc. Southeast. Biol. Bull. 30(2):78.
177. Pratt, J. R. and J. Cairns, Jr. 1983. Investigating species transfer using laboratory mesocosms. Am. Zool. 23(4):703.
178. Pratt, J. R., B. R. Niederlehner, A. L. Buikema, Jr., and J. Cairns, Jr. 1983. A multispecies toxicity test using protozoan colonization. Pages 162 in B. T. Walton, chairman. Fourth Annual Meeting: Multidisciplinary Approaches to Environmental Problems. Society of Environmental Toxicology and Chemistry, Rockville, MD.
179. Stewart, P. M., J. R. Pratt, R. L. Lowe, and J. Cairns, Jr. 1983. Early colonization patterns of protozoans and diatoms. J. VA. Acad. Sci. 34:134.
180. Belanger, S. E., D. S. Cherry, and J. Cairns, Jr. 1984. Functional responses of Asiatic clams (Corbicula fluminea) exposed to chrysotile asbestos: Growth, behavior, and fiber uptake. In Interface of Laboratory and Field Data: Predicting and Understanding Environmental Effects. Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
181. Cairns, J., Jr. 1984. Future directions and refinements of bioassay techniques for industrial effluent monitoring. Page 6 in Environmental Symposium '84. The Fertilizer Institute, Bartow, FL.
182. Farris, J. L., F. G. Doherty, D. S. Cherry, and J. Cairns, Jr. 1984. Use of an improved artificial stream system for testing the control of Asiatic clams (Corbicula fluminea) with chlorine. In Interface of Laboratory and Field Data: Predicting and Understanding Environmental Effects. Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
183. McCormick, P. V., J. R. Pratt, and J. Cairns, Jr. 1984. Colonization of temporary bodies of water by Protozoa. VA. J. Sci. 35(2):85.
184. Sappington, K. G., P. M. Stewart, and J. Cairns, Jr. 1984. The effect of zinc on diatom communities in laboratory mesocosms. VA. J. Sci. 35(2):97.

185. Stewart, P. M., J. R. Pratt, J. Cairns, Jr., and R. L. Lowe. 1984. A comparison of diatom and protozoan species accrual on artificial substrates in lentic habitats. North American Benthological Society, 32nd Annual Meeting, Raleigh, NC., p. 39.
186. Stewart, P. M., J. R. Pratt, P. V. McCormick, E. P. Smith, and J. Cairns, Jr. 1984. Multivariate analysis of protozoan communities in lentic systems. 37th Annual Meeting of the Society of Protozoologists, University of Georgia, Athens.
187. Belanger, S. E., D. S. Cherry, and J. Cairns, Jr. 1985. Responses of aquatic organisms to chrysotile asbestos fibers. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 43.
188. Belanger, S. E., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1985. Response of Corbicula fluminea to low levels of zinc in artificial streams. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 33.
189. Cairns, J., Jr. 1985. Why isn't there more integrated resource management? Page 19 in W. J. Mitsch, organizer. Multimedia Interactions of Environmental Pollutants. Ohio River Basin Consortium for Research and Education, University of Louisville, KY.
190. Cherry, D. S., J. A. Van Hassel, J. Cairns, Jr., and D. A. Stetler. 1985. Determination of toxic constituents in coal ash effluent. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 29.
191. Doherty, F. G., D. S. Cherry, and J. Cairns, Jr. 1985. Minimization strategies in the use of halogen biocides for the control of the Asiatic clam, Corbicula fluminea. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 32.
192. Doherty, F. G., D. S. Cherry, and J. Cairns, Jr. 1985. Spawning activity of the Asiatic clam Corbicula fluminea in the New River, Virginia. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO.
193. Farris, J. L., S. E. Belanger, D. S. Cherry, A. E. Linkins, and J. Cairns, Jr. 1985. Cellulase activity associated with chronic zinc exposure in laboratory and field artificial streams. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 33.
194. Genter, R. B., D. S. Cherry, and J. Cairns, Jr. 1985. Periphyton population and community changes due to zinc stress in artificial substrates. Assoc. Southeast. Biol. Bull. 32(2):51.
195. Genter, R. B., D. S. Cherry, and J. Cairns, Jr. 1985. Seasonal response of periphyton to zinc stress in artificial streams. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 51.
196. Genter, R. B., D. S. Cherry, and J. Cairns, Jr. 1985. Diatom response to zinc stress in artificial streams. Eighth North American Diatom Symposium.
197. McCormick, P. V., J. R. Pratt, and J. Cairns, Jr. 1985. Effect of 3-trifluoromethyl-4-nitrophenol (TFM) on the structure and function of protozoan communities established on artificial substrates. VA. Acad. Sci.
198. Pratt, J. R., B. R. Niederlehner, A. L. Buikema, Jr., and J. Cairns, Jr. 1985. A community level toxicity testing using protozoan colonization in laboratory mesocosms. Virginia Water Pollution Control Association.
199. Pratt, J. R., B. R. Niederlehner, N. B. Pratt, and J. Cairns, Jr. 1985. Response of functional groups to stress in multispecies testing systems. Society of Environmental Toxicology and Chemistry, Annual Meeting, St. Louis, MO., p. 111.
200. Sappington, K. G., P. M. Stewart, and J. Cairns, Jr. 1985. Measurement of diatom community changes resulting from various zinc concentrations in laboratory mesocosms. Assoc. Southeast. Biol. Bull. 32(2):51.
201. Stewart, P. M., K. G. Sappington, and J. Cairns, Jr. 1985. The effect of zinc exposure on diatom diversity and proportional abundance in laboratory microcosms. In VIII North American Diatom Symposium. Hancock Biological Station, Murray, KY.

202. Stewart, P. M., E. P. Smith, and J. Cairns, Jr. 1985. Relative degree of relationship of diatom and protozoan communities to physical-chemical parameters. In VIII North American Diatom Symposium. Hancock Biological Station, Murray, KY.
203. Belanger, S. E., D. S. Cherry, and J. Cairns, Jr. 1986. An overview of the effects of asbestos to algae, macroinvertebrates, molluscs, and fish: What is the status of the present data base? Poster Session, Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA.
204. Belanger, S. E., D. S. Cherry, J. R. Lauth, J. Cairns, Jr., and K. Schurr. 1986. Responses of aquatic organisms to chrysotile asbestos: An overview. Society of Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 80.
205. Cairns, J., Jr. 1986. Predicting, validating, and monitoring effects of toxics on large lake ecosystems. Pages 54 in Catalogue of Abstracts and Posters. World Conference on Large Lakes, Mackinac Island, MI.
206. Cherry, D. S., J. H. Van Hassel, J. L. Farris, S. E. Belanger, W. L. Specht, and J. Cairns, Jr. 1986. Site specific evaluation of zinc and cadmium criteria using an integrated field/laboratory approach. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 74.
207. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1986. Community level responses of aquatic macroinvertebrates to copper in laboratory streams. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 150.
208. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1986. Field and laboratory experiments using artificial substrates to examine the response of benthic macroinvertebrates to fly ash effluents. North American Benthological Society, 34th Annual Meeting, Huntersville, NC. 3(2):94.
209. Farris, J. L., D. S. Cherry, J. H. Van Hassel, and J. Cairns, Jr. 1986. Application of cellulolytic activity of Corbicula fluminea to in-stream monitoring of power plant effluents. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 150.
210. Genter, R. B., D. S. Cherry, E. P. Smith, and J. Cairns, Jr. 1986. Attached-algal abundance altered by individual and combined treatments of zinc and pH in stream mesocosms. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 150.
211. Genter, R. B., J. Cairns, Jr., and D. S. Cherry. 1986. Periphyton response to zinc and snail grazing in stream mesocosms. Phycological Society of America.
212. Pratt, J. R., P. V. McCormick, K. W. Pontasch, and J. Cairns, Jr. 1986. Evaluation of residual toxicants in waste site soils. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 128.
213. Pratt, J. R., B. R. Niederlehner, N. B. Pratt, and J. Cairns, Jr. 1986. Effect of chlorine on microbial communities in naturally derived microcosms. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 150.
214. Sappington, K. G., S. E. Belanger, D. S. Cherry, and J. Cairns, Jr. 1986. Combination of heat shock with chlorination as a control method for Corbicula fluminea. Society for Environmental Toxicology and Chemistry, Seventh Annual Meeting, Alexandria, VA., p. 78.
215. Belanger, S. E., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1987. Validation of Corbicula growth during heavy metal exposure in natural and artificial streams. North American Benthological Society, 35th Annual Meeting, Orono, ME. 4(1):83.
216. Clements, W. H., J. H. Van Hassel, D. S. Cherry, and J. Cairns, Jr. 1987. Colonization, variability, and application of substratum-filled trays for biomonitoring benthic communities. North American Benthological Society, 35th Annual Meeting. 4(1):85.
217. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1987. The impact of copper on aquatic insect communities in laboratory and outdoor experimental streams. Society for Environmental Toxicology and Chemistry, Eighth Annual Meeting, Pensacola, FL., p. 185.

218. Clements, W. H., D. S. Cherry, and J. Cairns, Jr. 1987. Seasonal variations in responses of aquatic insect communities to copper in laboratory streams. Virginia Water Resources Research Forum, Water Resources Research Center, Virginia Tech, Blacksburg, VA.
219. Farris, J. L., S. E. Belanger, D. S. Cherry, and J. Cairns, Jr. 1987. Laboratory-field validation of growth and cellulase impairment to copper toxicity of Asiatic clams. Society for Environmental Toxicology and Chemistry, Eighth Annual Meeting, Pensacola, FL., p. 184.
220. Farris, J. L., D. S. Cherry, and J. Cairns, Jr. 1987. Molluscan cellulolytic activity associated with long-term metal exposure. North American Benthological Society, 35th Annual Meeting. 4(1):82.
221. Farris, J. L., R. B. Genter, F. S. Colwell, S. E. Belanger, D. S. Cherry, and J. Cairns, Jr. 1987. Structural-functional artificial stream responses of microbial-periphyton communities and clam-snail populations to zinc. Society for Environmental Toxicology and Chemistry, Eighth Annual Meeting, Pensacola, FL., p. 170.
222. Genter, R. B. and J. Cairns, Jr. 1987. Altered abundance of algal-periphyton taxa in response to individual and combined treatments of zinc and phosphate. North American Benthological Society Meeting.
223. Orvos, D. R., G. H. Lacy, and J. Cairns, Jr. 1987. Use of soil microcosms in evaluating survivability of a genetically engineered microorganism. Assoc. Southeast. Biol. Bull. 34(2):103.
224. Orvos, D. R., G. H. Lacy, and J. Cairns, Jr. 1987. Survival and microbial community effects of genetically engineered Erwinia carotovora released into soil microcosms. VA. J. Sci. 38(2):123.
225. Orvos, D. R., G. H. Lacy, and J. Cairns, Jr. 1987. Survival of genetically engineered Erwinia carotovora and effects upon microbial community structure. Society for Environmental Toxicology and Chemistry, Eighth Annual Meeting, Pensacola, FL., p. 212.
226. Sappington, K. G., D. S. Cherry, and J. Cairns, Jr. 1987. Glycogen, tissue water, and soluble protein content changes of the Asiatic clam to 30-day laboratory, site-specific, and in-situ copper exposures. Society for Environmental Toxicology and Chemistry, Eighth Annual Meeting, Pensacola, FL., p. 184.
227. Belanger, S. E., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1988. Effects of pH and pH acclimation in chronic toxicity testing using Ceriodaphnia. Society for Environmental Toxicology and Chemistry, Arlington, VA.
228. Arnegard, M., K. Smith, J. Treadwell, D. Orvos, and J. Cairns, Jr. 1988. Genetically engineered Erwinia carotovora: Fate and microbial community effects in terrestrial microcosms. Society for Environmental Toxicology and Chemistry, Ninth Annual Meeting, Arlington, VA., p. 152.
229. Cairns, J., Jr. 1988. Protecting quality ecosystems and rehabilitating damaged ecosystems. 50th Midwest Fish and Wildlife Conference, Columbus, OH., #1, p. 29.
230. Cairns, J., Jr. and D. S. Cherry. 1988. Field confirmation of laboratory predictions of fish behavior. 50th Midwest Fish and Wildlife Conference, Columbus, OH., #73, p. 79.
231. Cairns, J., Jr. and B. R. Niederlehner. 1988. The case for environmental realism in toxicity testing. Northeast Fish and Wildlife Conference, White Sulphur Springs, WVA.
232. Cairns, J., Jr. and J. R. Pratt. 1988. The scientific basis for the use of bioassays. First International Conference on Environmental Bioassay Techniques and Their Application. University of Lancaster, England, p. 9.
233. Lauth, J. R., D. S. Cherry, and J. Cairns, Jr. 1988. Use of a single reconstituted water formulation for the culture and toxicity testing of organisms at three trophic levels. Society for Environmental Toxicology and Chemistry, Ninth Annual Meeting, Arlington, VA.
234. Niederlehner, B. R., K. W. Pontasch, and J. Cairns, Jr. 1988. Preliminary predictive validation of a microcosm toxicity test. Society for Environmental Toxicology and Chemistry, Ninth Annual Meeting, Arlington, VA., p. 155.

235. Orvos, D. R., G. H. Lacy, and J. Cairns, Jr. 1988. Origin of antibiotic resistant strains isolated from microcosms contaminated with genetically-engineered microorganisms. First International Conference on the Release of Genetically Engineered Microorganisms, Cardiff, Wales. No. 56.
236. Sostarec, V., D. R. Orvos, J. Cairns, Jr., and G. H. Lacy. 1988. Persistence of genetically engineered Erwinia carotovora in aquatic microcosms. Society for Environmental Toxicology and Chemistry, Ninth Annual Meeting, Arlington, VA., p. 152.
237. Austin, H. K., G. H. Lacy, and J. Cairns, Jr. 1989. Effects of enrichment and plant interactions on survival and detection of genetically-altered Erwinia carotovora in soil. 89th Annual Meeting of the American Society for Microbiology, New Orleans, LA., p. 298.
238. Austin, H. K., G. H. Lacy, and J. Cairns, Jr. 1989. Survival of wildtype and genetically-altered Erwinia carotovora subsp. carotovora (ECC) strains in soil. American Phytopathological Society Abstracts, St. Paul, MN.
239. Cairns, J., Jr. 1989. Brunch address: Management decisions for water quality conflicts. 14th Annual Colorado Water Workshop, Gunnison, CO.
240. Cherry, D. S., S. E. Belanger, J. L. Farris, K. G. Sappington, and J. Cairns, Jr. 1989. Sensitivity of the Asiatic clam (Corbicula fluminea) to various biocidal control agents. Annual Meeting, Society for Environmental Toxicology and Chemistry, Toronto, Ontario.
241. Comeaux, J. L., G. H. Lacy, and J. Cairns, Jr. 1989. Plasmid and gene transfer by genetically-engineered Erwinia carotovora subsp. carotovora in vitro, in soil, and in planta. 89th Annual Meeting of the American Society for Microbiology, New Orleans, LA., p. 355.
242. Orvos, D. R., V. S. Scanferlato, G. H. Lacy, and J. Cairns, Jr. 1989. Fate and effects of genetically-engineered Erwinia carotovora in terrestrial and aquatic microcosms. 89th Annual Meeting of the American Society for Microbiology, New Orleans, LA., p. 353.
243. Reed, D. K., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1989. Acute toxicity, chronic impairment and recovery of the snail, Leptoxis praerosa from copper-dominated effluent exposures. Society for Environmental Toxicology and Chemistry, Tenth Annual Meeting, Toronto, Canada.
244. Rifci, L. M., D. S. Cherry, and J. Cairns, Jr. 1989. Methylene blue as a fitness indicator in larval fish testing. Society for Environmental Toxicology and Chemistry, Tenth Annual Meeting, Toronto, Canada.
245. Atkinson, R. B. and J. Cairns, Jr. 1990. Early vegetative colonization of manmade forested wetlands in Virginia. Assoc. Southeast. Biol. Bull. 37(2):101.
246. Bidwell, J. R., J. L. Farris, D. S. Cherry, J. Cairns, Jr., and L. A. Lyons. 1990. A 10-day growth test using artificial substrate with the midge, Chironomus riparus. North American Benthological Society Meeting, Virginia Polytechnic Institute and State University, Blacksburg, VA.
247. Cairns, J., Jr. 1990. Developing a strategy for protecting and repairing self-maintaining ecosystems. The Ohio River Basin Consortium for Research and Education, Sixth Annual Scientific Symposium, Morgantown, WVA. p. 9.
248. Cairns, J., Jr. 1990. Will integrative science develop with sufficient rapidity to mitigate global environmental degradation? Ohio J. Sci. 90(2):iv.
249. Cairns, J., Jr. and B. R. Niederlehner. 1990. Adaptation of microbial communities to toxic stress. North American Benthological Society Meeting, Virginia Polytechnic Institute and State University, Blacksburg, VA.
250. Cairns, J., Jr., D. R. Orvos, and G. Lacy. 1990. Risk assessment of the genetically-engineered microorganism Erwinia carotovora. Abstracts and Papers of the American Chemical Society 199th Annual Meeting, Agrochemical Section of the Symposium on Risk Assessment as Applied to Biotechnology, Boston, MA. 171:1-2.

251. Cherry, D. S., J. L. Farris, S. E. Belanger, J. H. Van Hassel, and J. Cairns, Jr. 1990. Ecotoxicological evaluations of macroinvertebrates subjected to metal influenced cooling tower effluent in the Clinch River, Virginia. International Conference on Metals in Soils, Water, Plants, and Animals, Orlando, FL.
252. Orvos, D. R. and J. Cairns, Jr. 1990. Important factors in assessing environmental risk from genetically-engineered microorganisms. Assoc. Southeast. Biol. Bull. 37(2):95.
253. Orvos, D. R., V. S. Scanferlato, G. H. Lacy, and J. Cairns, Jr. 1990. Useful parameters in assessing risk from release of genetically engineered microorganisms. Society for Environmental Toxicology and Chemistry, Eleventh Annual Meeting, Arlington, VA.
254. Reed, D. K., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1990. Functional responses in Leptoxis praerosa from long-term (114-d) exposures to ambient Cu and Zn water quality criteria concentrations. Society for Environmental Toxicology and Chemistry, Eleventh Annual Meeting, Arlington, VA. p. 176.
255. Smith, E. P., K. W. Pontasch, and J. Cairns, Jr. 1990. Community similarity and the analysis of multispecies environmental data: A unified statistical approach. North American Benthological Society Meeting, Virginia Polytechnic Institute and State University, Blacksburg, VA.
256. Atkinson, R. B. and J. Cairns, Jr. 1991. Nontidal wetland creation in Virginia. Virginia Water Research Conference.
257. Comeaux, J. L. and J. Cairns, Jr. 1991. Leaf processing in a stream impacted by heavy metal effluents. Society for Environmental Toxicology and Chemistry, Twelfth Annual Meeting, Washington, DC., p. 27.
258. McCormick, P. V., D. A. Louie, and J. Cairns, Jr. 1991. Testing for diffuse effects of herbivory on lotic algal assemblages. Bull. Ecol. Soc. Am. (Suppl.) 72(2):186.
259. McCormick, P. V., R. J. Stevenson, C. G. Peterson, and J. Cairns, Jr. 1991. Developing a general model of benthic algal succession. Bull. North Am. Benthol. Soc. 8(1):123.
260. Reed, D. K., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1991. Effects of adhered and waterborne metals on cellulolytic enzyme activity impairment in the snail Leptoxis praerosa. Society for Environmental Toxicology and Chemistry, Twelfth Annual Meeting, Washington, DC., p. 248.
261. Arnegard, M. and J. Cairns, Jr. 1992. A new method for assessing the effects of inorganic pollutants on algal communities in streams. Pages 42-46 in R. A. Erchul, coordinator, Environment Virginia III: Pollution Prevention and Its Economic Implications. Virginia Military Institute, Lexington, VA.
262. Atkinson, R. B. and J. Cairns, Jr. 1992. Indicators of water quality enhancement functions in a compensation wetland in Virginia. Assoc. Southeast. Biol. Bull. 39(2):96-97.
263. Atkinson, R. B. and J. Cairns, Jr. 1992. Quality enhancement considerations for compensation wetlands in Virginia. Page 80 in Collected Abstracts of the 1992 Virginia Water Resources Conference. Virginia Water Resources Research Center, Blacksburg, VA.
264. Atkinson, R. B., J. Cairns, Jr., D. H. Jones, and W. L. Daniels. 1992. Constructed wetlands as a component of post-mining land use: An overview. Symposium and Progress Reports, Powell River Project. Clinch Valley College, Wise, VA., pp. 37-38.
265. Comeaux, J. L. and J. Cairns, Jr. 1992. Response of periphyton to copper stress in artificial streams. Society of Environmental Toxicology and Chemistry, Thirteenth Annual Meeting, Cincinnati, OH. p. 272, HA6M3.
266. Comeaux, J. L., M. E. Arnegard, and J. Cairns, Jr. 1992. Design and function of an artificial stream system for the study of periphyton responses to stress. Society of Environmental Toxicology and Chemistry, Thirteenth Annual Meeting, Cincinnati, OH. p. 273, HA6M5.
267. Dobbs, M. G., D. S. Cherry, and J. Cairns, Jr. 1992. The development of a flow through algal toxicity test utilizing the green alga Chlorella vulgaris. VA. J. Sci. 43(2):258.

268. Dobbs, M. G., D. S. Cherry, and J. Cairns, Jr. 1992. A flow-through algal toxicity tests designed to form the base of a three-level trophic toxicity test. Society of Environmental Toxicology and Chemistry, Thirteenth Annual Meeting, Cincinnati, OH. p. 219, #TPS9.
269. Holl, K. D. and J. Cairns, Jr. 1992. The effect of coal surface mine restoration on diurnal lepidopteran conservation in southwestern Virginia. Sixth Annual Meeting, Society for Conservation Biology, Blacksburg, VA.
270. Arnegard, M. E., J. Cairns, Jr., E. E. Schiedt, and J. M. McMunigal. 1993. Comparison of the responses of periphyton communities to copper delivered either through the water column or via chemical-releasing substrates. VA. J. Sci. 44(2):145.
271. Atkinson, R. B. and J. Cairns, Jr. 1993. Use of wetlands in ecological restoration of surface mined lands. Third International Conference on Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, May 23-27. Virginia Polytechnic Institute and State University, Blacksburg, VA. p. 13.
272. Brent, R. N., R. B. Atkinson, and J. Cairns, Jr. 1993. Metal uptake by wetland macrophytes in surface mined areas of southwestern Virginia. VA. J. Sci. 44(2):146.
273. Cairns, J., Jr. 1993. Interfacing product life cycles and ecological assimilative capacity. Society of Environmental Toxicology and Chemistry, Fourteenth Annual Meeting, Houston, TX. p. 115, #400.
274. Cairns, J., Jr. 1993. Measuring ecosystem services: The key to enlightened management of earth's ecological and technological life support systems. Third International Conference on Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, May 23-27. Virginia Polytechnic Institute and State University, Blacksburg, VA. p. 15.
275. Cairns, J., Jr., S. E. Palmer, and B. R. Niederlehner. 1993. The application of DNA-DNA hybridization to aquatic community genomes to indicate species richness. American Society of Microbiology, Dallas, TX.
276. Comeaux, J. L. and J. Cairns, Jr. 1993. Effects of copper on lotic periphyton production and nutritional content. Third International Conference on Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, May 23-27. Blacksburg, VA. p. 33.
277. Comeaux, J. L. and J. Cairns, Jr. 1993. Influence of copper on community structure and nutritional content of periphyton in laboratory mesocosms. Society of Environmental Toxicology and Chemistry, Fourteenth Annual Meeting, Houston, TX. p. 137, #491.
278. Dobbs, M. G., D. S. Cherry, and J. Cairns, Jr. 1993. Development of a three-trophic level toxicity test. Society for Environmental Toxicology and Chemistry, Fourteenth Annual Meeting, Houston, Texas. p. 227, #P347.
279. Guckert, J. B., S. E. Belanger, R. M. Ventullo, P. V. McCormick, J. Cairns, Jr., and R. L. Lowe. 1993. Stream mesocosm response mechanisms differ for two anionic surfactants. Society of Environmental Toxicology and Chemistry, Fourteenth Annual Meeting, Houston, TX. p. 80, #263.
280. Hill, S. R. and J. Cairns, Jr. 1993. Evaluation of plant response to aid in revegetation of hazardous chemical waste sites. VA. J. Sci. 44(2):147.
281. Holl, K. D. and J. Cairns, Jr. 1993. The effect of coal surface mine reclamation on lepidopteran populations in Virginia. Bull. Ecol. Soc. Am. 74(2):279.
282. Jones, D. H., R. B. Atkinson, and J. Cairns, Jr. 1993. The distribution of wetland macrophytes in accidental wetlands on surface mined areas of southwest Virginia. VA. J. Sci. 44(2):148.
283. Lauth, J. R., S. D. Dyer, T. J. Beigger, D. S. Cherry, and J. Cairns, Jr. 1993. Determination of quantitative structure activity relationships for alkyl sulfates using Ceriodaphnia dubia in flow through tests. Society of Environmental Toxicology and Chemistry, Fourteenth Annual Meeting, Houston, TX. p. 80, #262.
284. McCormick, P. V., M. Arnegard, and J. Cairns, Jr. 1993. An in situ experimental method for assessing aquatic ecosystem response to chemical stressors. Third International Conference on Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, May 23-27. Blacksburg, VA. p. 38.

285. Noe, G. B., R. B. Atkinson, and J. Cairns, Jr. 1993. Primary productivity measured as peak aboveground biomass in accidental wetlands on surface mined areas of southwestern Virginia. VA. J. Sci. 44(2):149.
286. Palmer, S. E., G. H. Lacy, and J. Cairns, Jr. 1993. Survival of genetically engineered Erwinia carotovora in perturbed clay and loam soil microcosms. First Annual Carolinas SETAC Meeting, Chapel Hill, NC.
287. Palmer, S. E., B. R. Niederlehner, and J. Cairns, Jr. 1993. Aquatic microbial community health assessment by DNA hybridization and microbial identification and enumeration: A methodological comparison. 1992 General Meeting, American Society of Microbiology, New Orleans, LA.
288. Palmer, S. E., B. R. Niederlehner, and J. Cairns, Jr. 1993. Assessment of pollution impact on aquatic microbial community integrity by DNA hybridization vs microbial identification: A methodological comparison. Third International Conference on Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, May 23-27. Blacksburg, VA. p. 42.
289. Niederlehner, B. R. and J. Cairns, Jr. 1993. Endpoints along a progression of impact in microcosm tests. Third International Conference on Aquatic Ecosystem Health & the Ecological Significance of Bioassay Techniques, May 23-27. Blacksburg, VA. p. 41.
290. Reed, D. K., J. L. Farris, D. S. Cherry, and J. Cairns, Jr. 1993. Bioassessment in monitoring recovery of snail populations after reduction of receiving-stream copper concentration. Society for Environmental Toxicology and Chemistry, Fourteenth Annual Meeting, Houston, TX. p. 176, #PD50.
291. Hyer, K., M. Sabre, and J. Cairns, Jr. 1994. A greenhouse study to develop seeding rates on disturbed soils: A case study of a landfill and two mine sites. VA. J. Sci. 45(2):82.
292. Jones, D. H., R. B. Atkinson, and J. Cairns, Jr. 1994. Macroinvertebrates of accidental wetlands on surface mined areas of southwestern Virginia -- preliminary results. VA. J. Sci. 45(2):82.
293. Belanger, S. E., P. V. McCormick, B. R. Niederlehner, J. B. Guckert, and J. Cairns, Jr. 1995. Protozoan-microbial interactions during mesocosm investigations of surfactants. Second World Congress of SETAC, Nov. 5-9. Vancouver, Canada.
294. Bern, C. R., R. B. Atkinson, and J. Cairns, Jr. 1995. Macronutrient pools in accidental wetlands on surface mined lands in Southwest Virginia. VA. J. Sci. 46(2):121.
295. Crisafulli, J., R. B. Atkinson, and J. Cairns, Jr. 1995. Vertebrate richness in accidental wetlands on surface mined lands of Southwest Virginia. VA. J. Sci. 46(2):47.
296. Heckman, J. R. and J. Cairns, Jr. 1995. A comparison of structural and functional measures of soil community dynamics in recovering terrestrial systems: Preliminary results. VA. J. Sci. 46(2):122.
297. Jones, D. H., R. B. Atkinson, and J. Cairns, Jr. 1995. Macroinvertebrate richness in accidental wetlands on surface mined lands of Southwest Virginia. VA. J. Sci. 46(2):123.
298. Rosenquist, C. M., R. B. Atkinson, and J. Cairns, Jr. 1995. Factors influencing biomass production in accidental wetlands on surface mined lands of Southwest Virginia. VA. J. Sci. 46(2):125.
299. Heaton, A. C. P., J. R. Heckman, and J. Cairns, Jr. 1996. Beta-glucosidase and dehydrogenase soil enzyme as an indicator of degraded site recovery. VA. J. Sci. 47(2):122.
300. Heaton, A. C. P., J. R. Heckman, L. Bechtel, and J. Cairns, Jr. 1996. Concurrent restoration of disturbed sites. Society for Ecological Restoration International Conference, June 17-22, Rutgers University, New Brunswick, NJ., #78, p. 60.
301. Heckman, J. R. and J. Cairns, Jr. 1996. Preliminary tests for correlation between initiated community structure and return of functional capacity on recovering land. Society for Ecological Restoration International Conference, June 17-22, Rutgers University, New Brunswick, NJ., #80, p. 60.

302. Heckman, J. R. and J. Cairns, Jr. 1996. Primary restoration of industrially degraded land: Preliminary tests for correlation between initiated community structure and return to functional capacity. Bull. Ecol. Soc. Am. (Suppl.). 77(3):190.
303. Heckman, J. R. and J. Cairns, Jr. 1996. Primary restoration of industrially degraded land: Preliminary tests for correlation between initiated community structure and return to functional capacity. VA. J. Sci. 47(2):122.
304. Cairns, J., Jr. 1997. Balancing ecological destruction and restoration: The only hope for sustainable use of the planet. 5th International Conference on Aquatic Ecosystem Health: Linking Science, Education, Politics and Society, Guadalajara, Mexico, pp. 25-26.
305. Cooney, S. J., J. R. Heckman, and J. Cairns, Jr. 1997. Soil microarthropod community changes in response to clearcut logging operations in southwest Virginia. VA. J. Sci. 48(2):80.
306. Heckman, J. R. and J. Cairns, Jr. 1997. Restoration of degraded land: A comparison of structural and functional measures of recovery. VA. J. Sci. 48(2):83.
307. Heckman, J. R. and J. Cairns, Jr. 1997. Restoration of degraded land: Comparison of structural and functional measurements of recovery. Bull. Ecol. Soc. Am. (Suppl.). 78(3):119.
308. Cairns, J., Jr. 1998. Probable future trends in the field of ecotoxicology. Page 108 in Abstracts of the First Asian Conference on Ecotoxicology and Environmental Safety, SECOTOX'98. Wuhan, China.
309. Cairns, J., Jr. 1999. Peace and sustainability. Peace and Global Issues, Program Booklet, 12th Annual Conference of Concerned Philosophers for Peace, Radford University, Radford, VA, pp. 9-10.
310. Cairns, J., Jr. 2005. War and sustainability. Preparing for Peace. Westmoorland General Meeting, London, UK. p 55.

EDITORIALS, BOOK REVIEWS, AND CONGRESSIONAL TESTIMONY

1. Cairns, J., Jr. 1957. Stream temperature and aquatic life. Frontiers 21(3):71-72.
2. Cairns, J., Jr. 1962. Review of "Management of Artificial Lakes and Ponds" by Bennett. Frontiers 27(2):60.
3. Cairns, J., Jr. 1963. Review of "American Heritage Book of Natural Wonders." Frontiers 28(2):63-64.
4. Cairns, J., Jr. 1963. Review of "Concepts of Forest Entomology" by Graham. Frontiers 28(1):27-28.
5. Cairns, J., Jr. 1963. Review of "Ichthyology" by Lagler, Bardach, and Miller. Frontiers 27(4):155.
6. Cairns, J., Jr. 1963. Review of "Principles in Mammalogy" by David and Golley. Frontiers 28(2):63-64.
7. Cairns, J., Jr. 1964. A limnologist visits our first undersea park. Frontiers 28(3):87.
8. Cairns, J., Jr. 1964. Review of "Fish and Fishing" by Maynard Reece. Frontiers 29(2):60.
9. Cairns, J., Jr. 1964. Review of "Natural History" by R. A. Pimental. Frontiers 29(1):26-27.
10. Cairns, J., Jr. 1965. Review of "Secrets of Inland Waters" by Boris Arnev, Jr. Frontiers 30(2):62.
11. Cairns, J., Jr. 1966. Review of "Reading in Ecology" by E. J. Kormondy. Assoc. Southeast. Biol. Bull. 13(3):65.
12. Cairns, J., Jr. 1967. Review of "The Biology of Populations" by R. H. MacArthur and J. H. Connell. Assoc. Southeast. Biol. Bull. 14(2):48.
13. Cairns, J., Jr. 1967. Review of "The Coccidian Parasites (Protozoa, Sporozoa) of Rodents" by Normal D. Levine and Virginia Ivens. Assoc. Southeast. Biol. Bull. 14(3):66.
14. Cairns, J., Jr. 1967. Review of "Principles of Microbial Ecology" by Thomas D. Brock. Assoc. Southeast. Biol. Bull. 14(3):66.
15. Cairns, J., Jr. 1968. Review of "Ecology and Resource Management" by Kenneth Watt. Revista de Biologia 6(3/4):448b-448c.
16. Cairns, J., Jr. 1968. Review of "Research in Protozoology," Vol. 1, edited by Tze-Tuan Chen. Assoc. Southeast. Biol. Bull. 15(3):137-140.
17. Cairns, J., Jr. 1968. Review of "Research in Protozoology," Vol. 2, edited by Tze-Tuan Chen. Revista de Biologia 6(3/4):448a-448b.
18. Cairns, J., Jr. 1969. Review of "The Atlantic Salmon" by Antony Netboy. Frontiers 33(4):31-32.
19. Cairns, J., Jr. 1969. Review of "In the Wake of Torrey Canyon" by Richard Petrow. Frontiers 33(5):30.
20. Cairns, J., Jr. 1969. Review of "The Population Bomb" by Paul R. Ehrlich. Frontiers 33(3):31.
21. Cairns, J., Jr. 1969. Review of "Population, Evolution, and Birth Control," a college of controversial ideas edited by Garrett Hardin, 2nd ed. Frontiers 34(2):30.
22. Cairns, J., Jr. 1969. Review of "Water Quality Criteria," a report of the National Technical Advisory Committee to the Secretary of the Interior. Assoc. Southeast. Biol. Bull. 16(3):95.
23. Cairns, J., Jr. 1969. Testimony on House of Representatives Bill H. R. 6750 to create an Environmental Quality Council (Congressman Dingell). Congressional Record, May 7, 1969, p. 43-54, 470-472.
24. Cairns, J., Jr. 1969. Testimony on Senate Bill S. 78. "Water Quality Improvement Act of 1969" (Senator Muskie). Congressional Record, Hearings on bill to establish a Select Senate Committee on Technology and the Human Environment (Senator Muskie). Comm. on Govt. Operations, U.S. Senate, March 4, 5, 6, April 24, and May 7, 1969. p. 334.

25. Cairns, J., Jr. 1969. Testimony on Senate Bill S. 1818 to create an Office of Environmental Quality (Senator Tydings). Congressional Record-Senate, June 12, 1969, p. S6305-S6306.
26. Cairns, J., Jr. 1969. Testimony on amendment to Senate Bill S. 2005 to establish a National Commission on Materials Policy (Senator J. Caleb Boggs). Congressional Record-Senate, Oct. 28, 1969, p. S13303.
27. Cairns, J., Jr. 1970. Review of "The Careless Atom" by Sheldon Novick. Frontiers 34(5):32.
28. Cairns, J., Jr. 1970. Review of "The Environmental Handbook" edited by Bagrrett De Bell. Revista de Biologia 7(1-2):180-181.
29. Cairns, J., Jr. 1970. Review of "Evolution" by Theodore H. Eaton, Jr. Revista de Biologia 7(1-2):178.
30. Cairns, J., Jr. 1970. Review of "Human Biology: Contemporary Readings," by Cecil E. Johnson. Assoc. Southeast. Biol. Bull.
31. Cairns, J., Jr. 1970. Review of "The Marine Aquarium" by R. F. O'Connell. Frontiers 34(4):32.
32. Cairns, J., Jr. 1970. Review of "Moment in the Sun" by Robert Reinow and Leona Train Rienow. Revista de Biologia 7(1-2):176-177.
33. Cairns, J., Jr. 1970. Review of "Our Precarious Habitat" by Melvon A. Benarde. Revista de Biologia 7(1-2):179-180.
34. Cairns, J., Jr. 1970. Review of "Readings in Conservation Ecology" edited by George W. Cox. Assoc. Southeast. Biol. Bull. 17(2):77-78.
35. Cairns, J., Jr. 1970. Review of "Standard Methods for the Medicore Science Manager" by M. B. Ettinger. Trans. Am. Fish. Soc. 99(3):614-615.
36. Cairns, J., Jr. 1970. Testimony on H.R. 17436, a bill to amend the National Environmental Policy Act of 1969 to provide for a National Environmental Data Bank. (Honorable John D. Dingell, Chairman, Subcommittee on Fisheries and Wildlife Conservation Committee on Merchant Marine and Fisheries). Congressional Record, p. 313-325.
37. Cairns, J., Jr. 1970. Testimony on Senate Bill 3410 to establish a system of national environmental laboratories (Senators Edmund S. Muskie and Howard H. Baker, Jr.). Congressional Record.
38. Cairns, J., Jr. 1970. Testimony on H.R. 14753, a bill to authorize the United States Commissioner of Education to establish educational programs to encourage understanding of policies and support of activities designed to enhance environmental quality and maintain ecological balance (Congressmen Brademas, Scheuer, Reid, and Hansen).
39. Cairns, J., Jr. 1970. Testimony on the Environmental Financing Act of 1970 to authorize and establish a National Environmental Bank, Environmental Trust Fund, and U. S. Environmental Savings Bonds. (Senator Magnuson). Congressional Record.
40. Cairns, J., Jr. 1971. Review of "Ecology and Field Biology" by Robert L. Smith. Revista de Biologia.
41. Cairns, J., Jr. 1971. Review of "Effects of Abatement of Domestic Sewage Organisms of Biscayne Bay, Florida: Studies in Tropical Oceanography," by J. Kneel and McNulty. J. Protozool. 18(2):356-357.
42. Cairns, J., Jr. 1971. Review of "Killer Smog" by William Wise. Revista de Biologia.
43. Cairns, J., Jr. 1971. Review of "The Subversive Science - Essays Toward an Ecology of Man," edited by Paul Shepard and Daniel McKinely. Revista de Biologia.
44. Cairns, J., Jr., E. L. Morgan, and R. E. Sparks. 1972. Application of biological monitoring systems to simulated industrial waste discharge situations. Pages 1-25 in Virginia Water Resources Research Center Completion Report, August, 1972. OWRR A-039-VA(2), PB-213 468.

45. Cairns, J., Jr. 1973. Review of "Dictionary of the Environmental Sciences," compiled by Robert W. Durrenberger. Water Resour. Bull. 9:5.
46. Cairns, J., Jr. 1975. Environmental Defense Fund. In The World Book Encyclopedia. 6:260a.
47. Cairns, J., Jr. 1975. Advisor to American Public Health Association on Biological Examination Standard Methods for the Examination of Water and Wastewater, 14th ed. American Public Health Assoc., Washington, DC. 1193 pp.
48. Cairns, J., Jr. 1975. Letter to the Editor on Toxic Plugs. Am. Soc. Microbiol. News. 41(11):787-788.
49. Ghiselin, J., R. L. Burgess, J. Cairns, Jr., F. Stems, and L. M. Talbot. Report of the Committee on Certification. 1976. Bull. Ecol. Soc. Am. 57(3):15-16.
50. Burgess, R. L., J. Cairns, Jr., J. Ghiselin, N. R. Glass, J. J. Reisa, F. Stearns, and L. M. Talbot. 1977. Recommendations of the Committee on Certification. Bull. Ecol. Soc. Am. 58(1):13-15.
51. Cairns, J., Jr. 1977. Review of "Pollutants in the Aquatic Environment: Detection, Measurement and Monitoring." J. Wildl. Manage. 41(2):183.
52. Cairns, J., Jr. 1978. Review of "Running Water Resources: Principles for Their Protection." Marcel Dekker, Inc., New York.
53. Cairns, J., Jr., A. L. Buikema, Jr., and J. G. Geiger. 1978. Testimony on Evaluation of Biological Data Used in Deriving EPA Water Quality Criteria. Federal Register 43(97):21506-21518, May 18.
54. Cairns, J., Jr. (as a member of Science Advisory Board). 1979. Goals of and criteria for design of a biological monitoring system. Ad hoc Study Group of the Ecology Committee, U. S. Environmental Protection Agency, Washington, DC.
55. Cairns, J., Jr. 1979. Guest Editorial: A new challenge to microbiologists. Aquat. Microbiol. Newsl. 18(3):3-4.
56. Cairns, J., Jr. 1979. Opening remarks. Page 13 in D. W. Linzey, ed. Endangered and Threatened Plants and Animals of Virginia. Virginia Polytechnic Institute and State University, Blacksburg, VA.
57. Cairns, J., Jr. 1979. Response to contaminants research questionnaire. Pages 56-568 in Contaminant Research Needs in the Great Lakes. The Great Lakes Fishery Commission, Ann Arbor, MI.
58. Cairns, J., Jr. 1979. Review of "Biological Surveillance of Rivers" by J. M. Hellawell. Trans. Am. Fish. Soc. 108(4):423-424.
59. Cairns, J., Jr. (chairman), R. Darnell, R. Hutnick, H. Kibbe, L. McCormick, and K. Perez. 1979. Ecosystem Restoration. Pages 46-56 in S. P. Meyers, ed. Cooperative Agreement for the Evaluation of Current Environmental Research and Establishment of Priorities. Penn State University, Progress in Health Planning and Administration, University Park, PA.
60. Cairns, J., Jr. 1980. A new editor for Transactions. Trans. Am. Microsc. Soc. 99(1):1.
61. Cairns, J., Jr. 1980. Comment on Food and Drug Administration's Bureau of Food's Draft Research Plan. Food Chem. News. 22(7):34.
62. Cairns, J., Jr. 1980. Guest editorial: Beyond single species testing. Mar. Environ. Res. 4(3):157-159.
63. Cairns, J., Jr. 1980-81. Guest editorial: Sequential vs. simultaneous toxicity testing protocols. Mar. Environ. Res. 4:165-166.
64. Cairns, J., Jr. 1980. Testimony on "Implementation of the Federal Water Pollution Control Act (Regulation and Monitoring of Toxic and Hazardous Chemicals)." Hearings Subcommittee on Oversight and Review -- Committee on Public Works and Transportation, U. S. Congress. June 18, 19, 24-26, pp. 1411-1417.

65. Cairns, J., Jr. and D. S. Cherry. 1980. Review of "Physical and Chemical Behavior and Environmental Acceptability of Stabilized Scrubber Sludge and Fly Ash in Seawater." American Society for Testing and Materials, Philadelphia, PA.
66. Okun, D. A., W. W. Aultman, D. D. Baumann, G. S. Birkhead, J. J. Boland, J. Cairns, Jr., K. P. Cantor, J. B. Gilbert, R. H. Haveman, R. Hazen, W. R. Lynn, P. I. McCarty, D. W. Miller, J. Milliman, and W. R. D. Sewell. 1980. Water for the Future of the Nation's Capitol Area. National Academy Press, Washington, DC. 38 pp.
67. Buikema, A. L., Jr., J. Kennedy, E. F. Benfield, J. Cairns, Jr., and A. C. Hendricks. 1981. Prediction of Environmental Perturbation by Acute and Chronic Toxicity Tests. American Petroleum Institute, Washington, DC. 95 pp.
68. Cairns, J., Jr. 1981. The clam that shuts down power plants. Energy Scout, Virginia Center for Coal and Energy Research. 1(4):July.
69. Gosselink, J. G., J. Cairns, Jr., J. S. Larson, L. V. A. Sendlein, R. L. Smith, K. F. Stutzman, R. Todd, and M. T. Walton. 1981. Ecological Classification System for Implementing Environmental Quality Evaluation Procedures. National Research Council, Washington, DC. 30 pp.
70. Cairns, J., Jr. 1982. Stream recovery studied by aquatic ecology group at VPI (Virginia). Restor. Manage. Notes 1(2):17-18.
71. Cairns, J., Jr. 1983. Guest Editorial: Multispecies toxicity testing. Environ. Tox. Chem. 3:1-3.
72. Cairns, J., Jr. 1984. Communication: Have application factors outlived their usefulness? J. Water Pollut. Control Fed. 56(5):487.
73. Cairns, J., Jr. 1985. A healthy environment: A 15-minute "Dimension in Science" program broadcast by 660 radio stations for the American Chemical Society.
74. Cairns, J., Jr. 1985. Just give me a freeze-dried talking fish on a stick. J. Water Pollut. Control Fed. 57(10):980.
75. Cairns, J., Jr., Convener. 1985. Symposium on complex mixtures. Environ. Tox. Chem. 4(6):807-840.
76. Cairns, J., Jr. and J. R. Pratt. 1986. On the relation between structural and functional analyses of ecosystems. Environ. Toxicol. Chem. 5:785-786.
77. Cairns, J., Jr. 1989. Editorial: Speaking at length. BioScience 39(9):632-633.
78. Cairns, J., Jr. 1989. Editorial: Will the real ecotoxicologist please stand up? Environ. Toxicol. Chem. 8:843-844.
79. Cairns, J., Jr. and R. B. Atkinson. 1990. Review of "Wetland Modeling" by W. J. Mitsch, M. Straskraba, and S. E. Jorgensen. Environ. Prof. 12:87-88.
80. Cairns, J., Jr. 1991. Application factors and ecosystem elasticity: The missing connection. Environ. Toxicol. Chem. 10:1235-1236.
81. Cairns, J., Jr. 1991. Editorial: Restoration ecology: A major opportunity for ecotoxicologists. Environ. Toxicol. Chem. 10:429-432.
82. Cairns, J., Jr. 1991. Invited editorial. Environ. Auditor 2(4):186.
83. Cairns, J., Jr. 1991. Invited testimony on H.R. 3578 (102d Congress), a bill to conduct a study of the environmental research basis for wetlands delineation. 12 pp. testimony + 34 pages of supporting evidence. Request from Congressman James H. Scheuer, Chairman, Subcommittee on Environment.
84. Cairns, J., Jr. and R. B. Atkinson. 1991. Review of "Animals in Primary Succession: The Role of Fauna in Reclaimed Lands." J. Veg. Sci. 2:135-138.
85. Cairns, J., Jr. 1992. The end of complacency? A review of Healing the Planet: Strategies for Solving the Environmental Crisis by P. R. Ehrlich and A. H. Ehrlich. BioScience 42(4):301-302.

86. Cairns, J., Jr. 1992. Foreword: Is this journal necessary? J. Aquat. Ecosystem Health 1:ix-xi.
87. Cairns, J., Jr. 1992. Healing the planet, Part I: Our choices. VA. Sci. 3(1):5.
88. Cairns, J., Jr. 1992. Paradigms flossed: The coming of age in ecotoxicology. Environ. Toxicol. Chem. 11:285-287.
89. Cairns, J., Jr. and R. B. Atkinson. 1992. Review of "Soil Conservation in the United States." Environ. Prof. 14:88-89.
90. Cairns, J., Jr. 1993. Healing the planet, Part II: Our choices. VA. Sci. 3(2):7.
91. Cairns, J., Jr. 1993. How science works. Tech Independent Oct21:5.
92. Cairns, J., Jr. 1993. Is there education after toilet training? Tech Independent Nov4:5.
93. Cairns, J., Jr. 1993. Letters to the editor. National Association of Environmental Professionals News 18(2):15.
94. Cairns, J., Jr. 1993. Urban runoff: A major resource opportunity. Tech Independent Nov11:6.
95. Cairns, J., Jr. 1993. What has happened since the first Earth Day? Tech Independent Oct28:5.
96. Cairns, J., Jr. 1993. Will there ever be a field of landscape toxicology? Environ. Toxicol. Chem. 12:609-610.
97. Cairns, J., Jr. 1994. The balance of ecological destruction and repair. Environ. Health Persp. 101(3):206.
98. Cairns, J., Jr. 1994. Review of "The Green Fuse, An Ecological Odyssey" by J. Harte. Annals of Earth XII(3):13.
99. Cairns, J., Jr. 1994. Third wave ecotoxicology. Ecotoxicology 3:1-3.
100. Cairns, J., Jr. 1995. Editorial: Ecosystem services: An essential component of sustainable use. Environ. Health Persp. 103(6):534.
101. Cairns, J., Jr., H. L. Carson, J. M. Diamond, T. Eisner, S. J. Gould, D. H. Janzen, J. Lubchenco, E. Mayr, C. D. Michener, G. H. Orians, S. L. Pimm, D. Simberloff, J. W. Terborgh, and E. O. Wilson. 1995. Brief of Amici Curiae Scientists to the Supreme Court of the United States in the case of Bruce Babbitt, Secretary of Interior, et al., Petitioners v. Sweet Home Chapter of Communities for a Greater Oregon, et al., Respondents. Wilson-Epes Printing Co., Washington, DC. 27 pp.
102. Cairns, J., Jr. 1996. April -- one day for fools and one day for the earth. Collegiate Times 56:A9.
103. Cairns, J., Jr. 1996. Review of BSE: The Facts by Brian Ford. Annals of Earth XIV(3):24.
104. Cairns, J., Jr. 1996. Review of "Our Stolen Future: Are We Threatening Our Fertility, Intelligence, and Survival? -- A Scientific Detective Story" by T. Colborn. Annals of Earth XIV(2):27.
105. Cairns, J., Jr. 1997. Balancing ecological impairment and recuperation for sustainability. Futures Paper, International Joint Commission (USA and Canada). 11 pp.
106. Cairns, J., Jr. 1997. The Kyoto climate summit. Sierra Club Newsletter, New River Currents, September, pp. 1-2.
107. Cairns, J., Jr. 1997. The natural step. Sierra Club Newsletter, New River Currents, October, pp. 1-2.
108. Cairns, J., Jr. 1997. Orchestrating the ecological and technological components of human society's life support system. Environ. Health Persp. 105(2):160-161.
109. Cairns, J., Jr. 1997. Review of "The Story of B" by D. Quinn. Annals of Earth. XV(1):28.

110. Cairns, J., Jr. 1997. Sustainability, economics, technology, and human culture. *Sierra Club Newsletter*, New River Currents, December, pp. 1-2.
111. Cairns, J., Jr. 1997. Sustainable use of the planet. *Sierra Club Newsletter*, New River Currents, November, pp. 1-2.
112. Cairns, J., Jr. and J. R. Heckman. 1997. Review of "Land Restoration and Reclamation: Principles and Practice" by J. A. Harris, P. Birch, and J. Palmer. Restor. Manage. Notes 15(1):104-105.
113. Cairns, J., Jr. 1998. The Sierra Club and immigration. *Sierra Club Newsletter*, New River Currents, April, p. 2.
114. Cairns, J., Jr. 1999. Review of "Perverse Subsidies: Tax \$s Undercutting Our Economies and Environments Alike" by N. Myers and J. Kent. BioScience 49(3):
115. Cairns, J., Jr. 1999. Review of "Perverse Subsidies: Tax \$s Undercutting Our Economies and Environments Alike" by N. Myers and J. Kent. New River Free Press 17(6):6.
116. Cairns, J., Jr. 1999. Review of "Perverse Subsidies: Tax \$s Undercutting Our Economies and Environments Alike" by N. Myers and J. Kent. Wild Earth 9(2):94-95.
117. Browder, J., J. Cairns, Jr., J. Grady, O. Miller, K. Robinson-Beers and L. Skabelun. 2000. Brown farm decisions calls for visionary readership. The Roanoke Times Oct 29:NRV2.
118. Cairns, J., Jr. 2001. Response to Farquhar's critique of "The Developing Role of Ecotoxicology in Industrial Ecology and Natural Capitalism" (*Environ. Health Persp.* 108(8):346-348). Environ. Health Persp. 109(2):A63-A64.
119. Cairns, J., Jr. 2001. Review of "Applied Ecology & Environmental Management, Second Edition." E. I. Newman, ed. Ecosystem Health 7(4):332.
120. Cairns, J., Jr. 2001. Review of "A Survey of Sustainable Development: Social and Economic Dimensions" by J. M. Harris, T. A. Wise, K. P. Gallagher, and N. R. Goodwin. Environ. Pract. 3(4):37-38.
121. Cairns, J., Jr. 2002. Invited endorsement for the book jacket of Precaution, Environmental Science and Preventative Public Policy, J. A. Ticknes, ed., Island Press, Washington, DC.
122. Cairns, J., Jr. 2003. Review of "Ecoregion-Based Design for Sustainability" by Robert S. Bailey. Environ. Conserv. 30(4):412-413.
123. Cairns, J., Jr. 2003. Review of "Searching for Sustainability" by Bryan G. Norton. BioScience 53(10):1007-1008.
124. Cairns, J., Jr. 2004. Review of "The Culture of Extinction: Toward a Philosophy of Deep Ecology" by Frederic L. Bender. Quarterly Rev Biol. 79(3):329-330.
125. Cairns, J., Jr. 2004. Review of "The Essential Agrarian Reader: The Future of Culture, Community, and the Land" by N. Wirzba, ed. New River Free Press 22(1):6.
126. Cairns, J., Jr. 2004. Review of "Just Sustainabilities: Development in an Unequal World" by J. Agyeman, R. Bullard, and B. Evans, ed. New River Free Press 22(2):6.
127. Cairns, J., Jr. 2004. Review of "The Last Refuge: Patriotism, Politics, and the Environment in an Age of Terror" by David W. Orr. New River Free Press 22(6):7.
128. Cairns, J., Jr. 2004. Review of "The Love of Nature and the End of the World" by Sherry Weber Nicholsen. New River Free Press 22(4):6,8.
129. Cairns, J., Jr. 2004. Review of "One with Nineveh: Politics, Consumption, and the Human Future" by P. R. Ehrlich and A. H. Ehrlich. New River Free Press 22(7):10.

130. Cairns, J., Jr. 2005. Backcover quote for Ecology and Management of a Forested Landscape: Fifty Years on the Savannah River Site by J. C. Kilgo and J. I. Blake. Island Press, Covelo, CA.
131. Cairns, J., Jr. 2005. Review of "All Flesh Is Grass: The Pleasures and Promises of Pasture Farming" by Gene Logsdon. New River Free Press 23(2):7.
132. Cairns, J., Jr. 2005. Review of "Boiling Point" by Ross Gelbspan. New River Free Press 22(10).
133. Cairns, J., Jr. 2005. Review of "Rapid Growth of Human Populations 1750-2000" by W. Stanton. New River Free Press 23(4):6.
134. Cairns, J., Jr. 2005. Review of "Red Sky at Morning: America and the Crisis of the Global Environment" by James Gustave Speth. New River Free Press 23(1):7.
135. Cairns, J., Jr. 2006. Review of "Discordant Harmonies: A New Ecology of the Twenty-first Century: by David B. Botkin. New River Free Press 24(3):7.
136. Cairns, J., Jr. 2006. Review of "The Party's Over: Oil, War and the Fate of Industrial Societies" by R. Heinberg. New River Free Press 24(7):6.
137. Cairns, J., Jr. 2006. Review of "The (Un)Happy Planet Index: An Index of Human Well-Being and Environmental Impact" by N. Marks, A. Simms, S. Thompson and S. Abdallah. New River Free Press 24(5):4.
138. Cairns, J., Jr. 2008. Career transition at Rocky Mountain Biological Laboratory. Rocky Mountain Biological Laboratory Newsletter, Crested Butte, CO. Winter issue.
139. Cairns, J., Jr. 2008. Letter to the Editor: "Bravo for naming scientific sources." Roanoke Times 31 May, p. 7.
140. Cairns, J., Jr. 2011. Farmer has right ideas about energy. Roanoke Times 4 August, p. 12.
141. Cairns, J., Jr. 2011. Review of *Is a Little Pollution Good for You?: Incorporating Societal Values in Environmental Research*. BioScience 61(10):829-831.
142. Cairns, J., Jr. 2011. Review of *Too Smart for Our Own Good: The Ecological Predicament of Humankind*. Environ. Conserv. 38(1):101-102.

ELECTRONIC PUBLICATIONS AND COMMENTARIES

1. Cairns, J., Jr. 1996. Respect for the inherent worth of each individual vs. the web of life: An unresolved conflict affecting sustainable use of the planet. Discussion initiation paper for the Mountain Conference Center, Highlands, North Carolina, on UUFNRV home page at <http://www.montgomery-floyd.lib.VA.us/pub/compages/uufnrv/articles.html> (12 pp., 2 fig.).
2. Cairns, J., Jr. 1997. Facing the unknown together: The ultimate teaching method. Empiricist 2(3) <http://biology.nebrwesleyan.edu/empiricist/research/articles/cairns.html>
3. Cairns, J., Jr. 1998. Facing the unknown together II: The role of research in the science curriculum. Empiricist 3 <http://biology.nebrwesleyan.edu/empiricist/research/articles/cairns.html>
4. Cairns, J., Jr. 2001. Beyond respect for the interdependent web of life. Common Ground 1(1)1-11. <http://commonground.umfk.maine.edu/issues/inprogress/essays/essay2/htm>
5. Cairns, J., Jr. 2001. Article: Ethics in environmental politics and sustainable use of the planet. Ethics in Science and Environmental Politics 26June:38-45. <http://www.esep.de/articles/esep/2001/article3.pdf>
6. Cairns, J., Jr. 2001. Editorial: Equity, fairness, and the development of a sustainability ethos. Ethics in Science and Environmental Politics 1Feb:1-7. <http://www.esep.de/articles/esep/2001/editorial1.pdf>
7. Cairns, J., Jr. 2001. Editorial: Exceptionalism and globalism. Ethics in Science and Environmental Politics 27Mar:33-37. <http://www.esep.de/articles/esep/2001/editorial2.pdf>
8. Cairns, J., Jr. 2001. Article: Ethics in science and environmental politics: Issues for interdisciplinary teams. Ethics in Science and Environmental Politics 12Nov:51-56. <http://www.int-res.com/articles/esep.2001/article5.pdf>
9. Cairns, J., Jr. 2001. Exuberant optimism vs the precautionary principle. Ethics in Science and Environmental Politics 6Nov:46-50. <http://www.esep.de/articles/esep/2001/article4/pdf>
10. Cairns, J., Jr. 2002. A declaration of eco-ethics. Ethics in Science and Environmental Politics 18Nov:79-81. <http://www.esep.de/articles/esep/2002/E20.pdf>
11. Cairns, J., Jr. 2002. Reexamining "the inherent worth and dignity of every person" paradigm in an interdependent web of life context. Journal of Liberal Religion Winter 3(1). 16 pp. http://www.meadville.edu/cairns_3_1.html
12. Cairns, J., Jr. 2002. Revisiting respect for the interdependent web of life and the worth and dignity of each individual: A major issue in sustainable uses of the planet. Common Ground 7 pp. <http://commonground.umfk.maine.edu/issues/current/essay/essay2/htm>
13. Cairns, J., Jr. 2002. Sharing a vision. Research Institute at Borok, Russia. 8 pp. <http://www.cairns.narod.ru>
14. Cairns, J., Jr. 2002. Sustainability and sacred values. Ethics in Science and Environmental Politics 13Sept:15-27. <http://www.int-res.com/articles/esep/2002/article2/pdf>
15. Cairns, J., Jr. 2002. Terrorism, racism, speciesism, and sustainable use of the planet. Ethics in Science and Environmental Politics 3Dec:90-99 <http://www.int-res.com/articles/esep/2002/E24.pdf>
16. Cairns, J., Jr. 2003. Ethical issues in ecological restoration. Ethics in Science and Environmental Politics 24June:50-61 <http://www.esep.de/articles/esep/2003/E28.pdf>
17. Cairns, J., Jr. 2003. Ethics in science: ecotoxicology. Ethics in Science and Environmental Politics 8May:33-39 <http://www.int-res.com/articles/esep/2003/E27.pdf>
18. Cairns, J., Jr. 2003. Integrating top-down/bottom-up sustainability strategies: an ethical challenge. Ethics in Science and Environmental Politics 6Feb:1-6 <http://www.esep.de/articles/esep/2003/E26.pdf>
19. Cairns, J., Jr. 2003. Numeracy and sustainability. Ethics in Science and Environmental Politics 20Nov:83-91 <http://www.esep.de/articles/esep/2003/E40.pdf>

20. Cairns, J., Jr. 2003. Peace and sustainability: Nurturing complex systems. Westmoorland General Meeting, Society of Friends, "Preparing for Peace" initiative, Swarthmoor, Kendal and Ledberg, Lancaster and Preston areas, England. http://www.preparingforpeace.org/cairnspeace_&_sust.htm
21. Cairns, J., Jr. 2003. A preliminary declaration of sustainability ethics: Making peace with the ultimate bioexecutioner. Ethics in Science and Environmental Politics 26May:43-48 <http://www.int-res.com/articles/esep/2003/E30.pdf>
22. Cairns, J., Jr. 2003. Reparations for environmental degradation and species extinction: A moral and ethical imperative for global human society. Ethics in Science and Environmental Politics 7May:25-32 <http://www.esep.de/articles/esep.2003/E31.pdf>
23. Cairns, J., Jr. 2003. Tribute to Garrett Hardin. Garrett Hardin Society. http://www.GarrettHardinSoc.org/tributes/tr_cairns_2003sept.html
24. Cairns, J., Jr. 2003. Sovereignty, individuality and sustainability. Ethics in Science and Environmental Politics 16Sept:71-77 <http://www.esep.de/articles/esep.2003/E33.pdf>
25. Cairns, J., Jr. 2003. The unmanaged commons: A major challenge for sustainability ethics. Garrett Hardin Society. <http://www.thesocialcontract.com/cgi-bin/showarticle.p1?articleID=1206terms=>
26. Cairns, J., Jr. 2003. War and sustainability. Westmoorland General Meeting, "Preparing for Peace" initiative, Swarthmoor, Kendal and Ledberg, Lancaster and Preston areas, England. <http://www.preparingforpeace.org/cairns.htm>
27. Cairns, J., Jr. 2004. Allocating finite resources on a finite planet. Ethics in Science and Environmental Politics 7May:25-27 <http://www.esep.de/articles/esep/2004/E47.pdf>
28. Cairns, J., Jr. 2004. Choosing model nations to set examples for achieving sustainability. Ethics in Science and Environmental Politics 16Apr:7-8 <http://www.esep.de/articles/esep/2004/E46.pdf>
29. Cairns, J., Jr. 2004. Coping with ecological catastrophe: Crossing major thresholds. Ethics in Science and Environmental Politics 19Aug:69-79 <http://www.int-res.com/articles/esep/2004/E56.pdf>
30. Cairns, J., Jr. 2004. The ethics of global resource allocation. Ethics in Science and Environmental Politics 28Dec:93-96 <http://www.int-res.com/articles/esep/2004/E58.pdf>
31. Cairns, J., Jr. 2004. Future of life on Earth. Ethics in Science and Environmental Politics 26Feb:1-2 <http://www.esep.de/articles/esep/2004/E41.pdf>
32. Cairns, J., Jr. 2004. Is human society in denial regarding the tough questions about sustainability? Ethics in Science and Environmental Politics 29July:53-63 <http://www.int-res.com/articles/esep/2004/E54.pdf>
33. Cairns, J., Jr. 2004. Life defining experiences – Rocky Mountain Biological Laboratory. <http://www.rmbll.org>
34. Cairns, J., Jr. 2004. Remaining on stage in the planetary theater. Ethics in Science and Environmental Politics 3June:45-47 <http://www.int-res.com/articles/esep/2004/E51.pdf>
36. Cairns, J., Jr. 2004. Second tribute to Garrett Hardin. The Garrett Hardin Society. http://www.GarrettHardinSociety.org/tributes/tr_cairns_2004mar.html
37. Cairns, J., Jr. 2004. Small islands: Harbingers of Earth's ecological fate? Ethics in Science and Environmental Politics 17May:29-31 <http://www.int-res.com/articles/esep/2004/E48.pdf>
38. Cairns, J., Jr. 2004. Sustainability and the anthropogenic alteration of evolutionary processes. Ethics in Science and Environmental Politics 5Aug:65-68 <http://www.int-res.com/articles/esep.2004/E55.pdf>
39. Cairns, J., Jr. 2004. Sustainability ethics matter. Ethics in Science and Environmental Politics 7Apr:3-6 <http://www.esep.de/articles/esep/2004/E42.pdf>

40. Cairns, J., Jr. 2004. Sustainability ethics: tales of two cultures. Ethics in Science and Environmental Politics 24May:39-43 <http://www.int-res.com/articles/esep/2004/E50.pdf>
41. Cairns, J., Jr. 2004. Sustainability and specialization. Ethics in Science and Environmental Politics 24May:33-38 <http://www.int-res.com/articles/esep/2004/E49.pdf>
42. Cairns, J., Jr. 2004. Will the real sustainability concept please stand up? Ethics in Science and Environmental Politics 22June:49-52 <http://www.int-res.com/articles/esep/2004/E53.pdf>
43. Cairns, J., Jr. 2004. You and Earth's resources. Ethics in Science and Environmental Politics 30Apr:9-11 <http://www.esep.de/articles/esep/2004/E45.pdf>
44. Cairns, J., Jr. 2005. Can compassion and kindness survive a violent cutback in human population size? Commentaries, 8 Nov online at <http://www.johncairns.net>
45. Cairns, J., Jr. 2005. Conversations about sustainable use of the planet. Commentaries, 5 Dec online at <http://www.johncairns.net>
46. Cairns, J., Jr. 2005. Ecological overshoot and sustainability ethics. Ethics in Science and Environmental Politics 22June:21-22 <http://www.esep.de/articles/esep.2005/E62.pdf>
47. Cairns, J., Jr. 2005. Ecological overshoot: Our gift to posterity. <http://www.ucnrv.org/JC-050731.html>
48. Cairns, J., Jr. 2005. Global tower of Babel. Commentaries, 23 Nov online at <http://www.johncairns.net>
49. Cairns, J., Jr. 2005. How many people will nature permit? Ethics in Science and Environmental Politics 14June:17-19 <http://www.esep.de/articles/esep/2005/E61.pdf>
50. Cairns, J., Jr. 2005. Human alteration of evolutionary processes. Chapter 8 in V. Burdyuzh, ed., Proceedings UN Symposium, The Future of Life and the Future of Our Civilization, 30 April – 7 May 2005. Saarland University, Saarbruchen, Germany. <http://www.archive.future25.org/Symposium05>
51. Cairns, J., Jr. 2005. Social action, social responsibility, and secondary sources of environmental information. Commentaries, 12 Dec online at <http://www.johncairns.net>
52. Cairns, J., Jr. 2005. Surprise, surprise—heat melts ice. Commentaries, 22 Nov online at <http://www.johncairns.net>
53. Cairns, J., Jr. 2005. Sustainability ethics and the 21st century lifestyle. Commentaries, 17 Nov online at <http://www.johncairns.net>
54. Cairns, J., Jr. 2006. Adapting to the symptoms of global warming rather than addressing the cause. Commentaries, 17 July online at <http://www.johncairns.net>
55. Cairns, J., Jr. 2006. Blowing sunshine: transforming inconvenient truths to convenient truths. Commentaries, 13 July online at <http://www.johncairns.net>
56. Cairns, J., Jr. 2006. Blowing sunshine #2: transforming inconvenient truths to convenient truths. Commentaries, 27 July online at <http://www.johncairns.net>
57. Cairns, J., Jr. 2006. Blowing sunshine #3: transforming inconvenient truths to convenient truths. Commentaries, 20 Dec online at <http://www.johncairns.net>
58. Cairns, Jr., Jr. 2006. Can the cheap, convenient, readily available energy party continue? Commentaries, 20 June online at <http://www.johncairns.net>
59. Cairns, Jr., Jr. 2006. Compassion, catastrophe, and change. Commentaries, 27 June online at <http://www.johncairns.net>
60. Cairns, Jr., Jr. 2006. The fate of an actor on the ecological stage of the evolutionary theater. Commentaries, 3 Mar online at <http://www.johncairns.net>

61. Cairns, Jr., Jr. 2006. Future eaters. Commentaries, 30 Mar online at <http://www.johncairns.net>
62. Cairns, J., Jr. 2006. Human destiny and the biospheric life support system. Commentaries, 4 Oct online at <http://www.johncairns.net>
63. Cairns, Jr., Jr. 2006. Information, knowledge, science, and spirituality. Commentaries, 22 June online at <http://www.johncairns.net>
64. Cairns, J., Jr. 2006. Lifeboat ethics: To sink or not to sink. Commentaries, 9 Feb online at <http://www.johncairns.net>
65. Cairns, J., Jr. 2006. Peace, global warming, ecological overshoot, and resource wars. Commentaries, 29 June online at <http://www.johncairns.net>
66. Cairns, J., Jr. 2007. Are we asking the right questions to guide our descent from the 2007 oil peak? Commentaries, 17 Sept online at <http://www.johncairns.net>
67. Cairns, J., Jr. 2007. Beyond ecocentrism. 24 Apr <http://lists.eco-res.org/pipermail/econf/20070424/000764.html>. EcoRes Forum – *From Anthropocentrism to Ecocentrism: Making the Shift*. EcoRes E-Conference, 14-30 April 2007. <http://www.eco-res.org>.
68. Cairns, J., Jr. 2007. Creating an alien planet. Commentaries, 29 Feb online at <http://www.johncairns.net>.
69. Cairns, J., Jr. 2007. Decalogue for a planet in imminent peril. Commentaries, 2 Oct online at <http://www.johncairns.net>
70. Cairns, J., Jr. 2007. Did you get a good education? Commentaries, 12 Sept online at <http://www.johncairns.net>.
71. Cairns, J., Jr. 2007. The end of the cornucopian delusion. Commentaries, 22 Aug online at <http://www.johncairns.net>
72. Cairns, J., Jr. 2007. From anthropocentrism to ecocentrism: making the shift. 18 Apr <http://lists.eco-res.org/pipermail/econf/attachments/20070418/ca48a890/attachment.html>. EcoRes Forum – *From Anthropocentrism to Ecocentrism: Making the Shift*. EcoRes E-Conference, 14-30 April 2007. <http://www.eco-res.org>.
73. Cairns, J., Jr. 2007. Historic changes I have observed as an environmental scientist from 1948-2007. 23 Apr <http://lists.eco-res.org/pipermail/econf/20070423/000711.html>. EcoRes Forum – *From Anthropocentrism to Ecocentrism: Making the Shift*. EcoRes E-Conference, 14-30 April 2007. <http://www.eco-res.org>.
74. Cairns, J., Jr. 2007. It's the biosphere, stupid. Commentaries, 31 Oct online at www.johncairns.net.
75. Cairns, J., Jr. 2007. Living on an alien planet. Commentaries, 24 Oct online at www.johncairns.net.
76. Cairns, J., Jr. 2007. Nature's way: quantity first, quality next. Commentaries, 8 Oct online at <http://www.johncairns.net>
77. Cairns, J., Jr. 2007. The non-pesticide *Silent Spring*. Commentaries, 14 Aug online at <http://www.johncairns.net>
78. Cairns, J., Jr. 2007. The numbers of forever. Commentaries, 19 July online at <http://www.johncairns.net>.
79. Cairns, J., Jr. September 2007. Restoration ecology: principles. In: Encyclopedia of Life Sciences. John Wiley & Sons, Ltd: Chichester <http://www.els.net/> [DOI: 10.1002/9780470015902.a0020468].
80. Cairns, J., Jr. 2007. Sustainable development: The two decade milestone. Commentaries, 11 Dec online at www.johncairns.net.
81. Cairns, J., Jr. 2007. The Virginia Tech massacre. 17 Apr <http://lists.eco-res.org/pipermail/econf/20070417/000246.html>. EcoRes Forum – *From Anthropocentrism to Ecocentrism: Making the Shift*. EcoRes E-Conference, 14-30 April 2007. <http://www.eco-res.org>.

82. Cairns, J., Jr. 2007. Voluntary income tax, voluntary speed limits. Commentaries, 5 Dec online at www.johncairns.net.
83. Cairns, J., Jr. 2007. We can never do merely one thing. 19 Apr <http://lists.eco-res.org/pipermail/econf/20070419/000448.html>. EcoRes Forum – *From Anthropocentrism to Ecocentrism: Making the Shift*. EcoRes E-Conference, 14-30 April 2007. <http://www.eco-res.org>.
84. Cairns, J., Jr. 2007. Wear it out, Use it up, Make it do, Do without. Commentaries, 4 Sept online at <http://www.johncairns.net>
85. Cairns, J., Jr. 2008. The end of contagious optimism and denial? Commentaries, 18 Nov online at www.jcairns.net.
86. Cairns, J., Jr. 2008. Environmental science in an era of scarce resources. Commentaries, 10 July online at www.johncairns.net.
87. Cairns, J., Jr. 2008. Homage to Robert Hooke: why there are so many fossil species. Commentaries, 4 Mar online at www.johncairns.net.
88. Cairns, J., Jr. 2008. Homage to Garrett Hardin: nobody ever dies of global climate change. Commentaries, 23 Sept online at www.jcairns.net.
89. Cairns, J., Jr. 2008. Imprinting: Theater of the Absurd or ?. Commentaries, 22 Jan online at www.johncairns.net.
90. Cairns, J., Jr. 2008. Mother Nature does not bargain or forgive. Commentaries, 24 June online at www.johncairns.net.
91. Cairns, J., Jr. 2008. The mother of all positive feedback loops? Commentaries, 21 Oct online at www.johncairns.net.
92. Cairns, J., Jr. 2008. Natural law/human law. Commentaries, 13 Mar online at www.johncairns.net.
93. Cairns, J., Jr. 2008. Putting the eco in ecotoxicology. Commentaries, 4 Dec online at www.jcairns.net.
94. Cairns, J., Jr. and M. Saier, Jr. 2008. Editorial: Real sustainability. Water Air Soil Pollut. <http://dx.doi.org/10.1007/S11270-008-9675-2>.
95. Cairns, J., Jr. 2009. Are humans too numerous to become extinct? Commentaries, 10 Aug online at www.jcairns.net.
96. Cairns, J., Jr. 2009. Cast changes on the ecological stage of Earth's evolutionary theater. Commentaries, 3 Aug online at www.jcairns.net.
97. Cairns, J., Jr. 2009. Going, going, gone: the fate of low-lying islands and estuaries. Commentaries, 23 Nov online at www.jcairns.net.
98. Cairns, J., Jr. 2009. How will the perpetual economic growth delusion end? Commentaries, 16 July online at www.jcairns.net.
99. Cairns, J., Jr. 2009. Post-climate tipping point negotiations: do they serve any useful purpose? Commentaries, 25 June online at www.jcairns.net.
100. Cairns, J., Jr. 2009. Silence that kills. Commentaries, 21 Jul online at www.jcairns.net.
101. Cairns, J., Jr. 2010. Ecotoxicology in an era of rapid environmental change. Commentaries, 12 Jan online at www.jcairns.net.
102. Cairns, J., Jr. 2010. How dare you scientists espouse different thoughts! Commentaries, 22 July online at www.jcairns.net.

103. Cairns, J., Jr. 2010. The reluctant warriors: scientists vs public relations spin doctors. Commentaries, 18 Mar online at www.jcairns.net.
104. Cairns, J., Jr. 2010. Requiem for the biosphere. Commentaries, 8 July online at www.jcairns.net.
105. Cairns, J., Jr. 2010. Sustainability and waste of biospheric resources are incompatible. Commentaries, 23 Sept online at www.jcairns.net.
106. Cairns, J., Jr. 2010. There is no Planet B. Commentaries, 28 July online at www.jcairns.net.
107. Cairns, J., Jr. 2011. Can humans respond to a long-term shortage of renewable resources?. Commentaries, 14 Sept online at www.jcairns.net.
108. Cairns, J., Jr. 2011. Extinction: the probable consequence of the assault on science and reason. Commentaries, 19 April online at www.jcairns.net.
109. Cairns, J., Jr. 2011. King Midas and the money touch. Commentaries, 19 Sept online at www.jcairns.net.
110. Cairns, J., Jr. 2011 Why is humankind eliminating its future? Commentaries, 7 Jan online at www.jcairns.net.
111. Cairns, J., Jr. In prep. Post-human economic growth. Commentaries.
112. Cairns, J., Jr. In prep. Selecting appropriate taboos. Commentaries.
113. Cairns, J., Jr. In prep. Toxicity and sustainable use of the planet. Commentaries.