

# DAVID COX CONSULTING

## ECOLOGICAL SERVICES

DAVID L. COX, PH.D.

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### GOALS

- Integrate advances in ecological knowledge into policy and management decisions that affect ecological sustainability.
- Promote a thoughtful public today and educate future generations so that the best available science will be applied when making choices about sustainability.

### EDUCATION

Postdoc	University of Oxford, Animal Ecology Research Group (with Charles Elton)
Ph.D.	Washington University, Population Biology & Ecology (with Peter Raven)
B.A.	Washington University, Biology/Chemistry Vanderbilt University

### EXPERTISE

- sustainable land use planning, design with nature
- natural lands management plans, habitat evaluation & ecological restoration
- strategic conservation planning & green infrastructure development
- science-based, land stewardship programs
- public communication
- design, implementation & management of independent research
- successful grant preparation & administration, including budgets
- 30 years' experience in education, at all levels "K-postgraduate"

### RECENT CLIENTS

- U.S. Fish & Wildlife Service, Office of Ecological Services, Environmental History of Indian River County, Florida
- Harvard University, Arnold Arboretum, Boston, MA: Institute for Cultural Landscape Studies, Web-based Resources for History of Ecosystem Concept

- South Florida Water Management District, W. Palm Beach, FL: Pre-Drainage Everglades Landscapes and Hydrology: A System-wide Review.
- Kamehameha Schools, Hawaii, Eco-Cultural History Facility Planning
- Indian River Land Trust, Vero Beach, FL: Conservation Lands Planning & Grant Writing
- Environmental Learning Center, Indian River County, FL: Facilities Design & Development
- Brad Smith & Associates, Melbourne, FL: Habitat Evaluation and Facilities Planning
- Indian River County School District: K-5 Environmental Education Curriculum Development (Earth Stewards Program) and Teacher Training
- CM & Associates, Ft. Myers Beach, FL: Ecosystems of Florida Traveling Museum Exhibits
- Children's Home Society, Ft. Pierce, FL: Grant Writing & Program Planning
- St. Edward's Upper School, Vero Beach, FL: Summer Science Teachers' Institute

## PROFESSIONAL EXPERIENCE

2000-	President, David Cox Consulting
1998-1999	Assoc. Professor, Florida Institute of Technology, Melbourne, Florida
1997-1998	Naturalist, Environmental Learning Center, Vero Beach, Florida
1994-1996	Sr. Research Fellow, USF/Shriners Hospital, Tampa, Florida
1987-1994	Asst. Professor, Dept. of Biology, University of Oregon, Eugene, Oregon
1986-1987	Senior Scientist, College of Marine Studies, University of Delaware, Lewes, Delaware
1983-1986	Asst. Professor, Department of Biology, Vassar College
1981-1983	Instructor, Washington University, St. Louis, Missouri
1979-1980	NATO Fellow, University of Oxford, Oxford, England

## SELECT EXPERIENCE

- work on local/regional/state conservation, land use, education, environmental history, public access and recreation issues
- author of over 40 peer-reviewed publications
- developed trail systems, educational facilities, outdoor signage, museum exhibits, and interpretive materials at the Environmental Learning Center, Indian River County, FL
- directed independent research programs, including staff supervision, budgets, and graduate training
- successful grant-getter, and reviewer for agencies and foundations (NSF, NIH, NEH, Mellon, NGS, APS, Gannett and others)

## TEACHING EXPERIENCE

- Washington University: introductory biology, environmental studies
- Vassar College: introductory biology, history of biology, seminar in environmental history, The human relation to nature, biochemistry, molecular biology, developmental biology
- University of Oregon: history of biology, environmental history, ecology, animal field ecology, marine biology, coastal ecology, animal reproduction, cellular biochemistry, intro biology
- Florida Institute of Technology: mammalian physiology, developmental biology
- Environmental Learning Center: K-12 & adult environmental education, environmental history

## PROFESSIONAL CERTIFICATION

Certified Senior Ecologist, Ecological Society of America

## PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science, American Historical Society, American Planning Association, American Society for Environmental History, British Ecological Society, Ecological Society of America, Florida Academy of Sciences, Sigma Xi

## COMMUNITY ACTIVITIES

Indian River County, Planning & Zoning Commission, District 2 Commissioner, 1998-2004; Chairman, Indian River County Planning & Zoning Commission, 2003-; Marine Advisory Committee, Indian River County, 2003-; Pelican Island Audubon Society, Director, 1996- ; Pelican Island Preservation Society, Board Member, 1996-1997, Treasurer, 1998-2003; President, 2003-; Indian River Land Trust, Land Committee, 1999-; Friends of the St. Sebastian River, Board member, 1997-98; Indian River County Historical Society, 1997-; Indian River Lagoon Envirothon Board member, 1998- ; Environmental Learning Center, Education Committee, 1997- ; School & Regional Science Fairs, advisor & judge, 1997-; Friends of the North Indian River County Library, member & Vice-Pres., 1998-; Upper Basin Advisory Committee, St. Johns River American Heritage River Initiative, 1999-; Sebastian Inlet State Recreation Area Management Plan Advisory Group, 2000; Archie Carr National Wildlife Refuge Working Group, 2000-; Pelican Island NWR Working Group, 2003-; Cultural Council of Indian River County, Member, 2003-; Marine Resources Council, Board Member, 2004-

## PUBLICATIONS

- Sexton, O.J., Bramble, J.E., Heisler, I.L., Phillips, C.A., and Cox, D.L. 2005. Eggshell composition of squamate reptiles: relationship between eggshell permeability and amino acid distribution. *Journal of Chemical Ecology*. *In press*.
- Cox, D.L., and Alexander, W. 2005. Traces: The Legacy of Indian River County, Volume 2. European Contact and Colonization. Vero Beach, FL: School District of Indian River County. *In preparation*.
- Cox, D.L. 2004. Pre-Drainage Everglades Landscapes and Hydrology: A Review. South Florida Water Management District: West Palm Beach, FL.
- Cox, D.L., and Alexander, W. 2003. Traces: The Legacy of Indian River County, Volume 1. Prehistory. Vero Beach, FL: School District of Indian River County.
- Cox, D.L., 2001. Science for Earth Stewards: K – 5 Science Curriculum. Vero Beach, FL: School District of Indian River County.
- Cox, D.L., 2001. An “Ecosystem” timeline: changing definitions in ecology, 1935-2000. A Web Project of the Institute for Cultural Landscape Studies, Harvard University. <http://www.icls.harvard.edu/current.html>
- Cox, D.L., 2000. Changing the Course of the Future: Earth Stewards Curriculum. Vero Beach, FL: School District of Indian River County.
- Cox, D.L., Walker, P. and Koob, T.J. 1999. Predation on eggs of the thorny skate. *Transactions of American Fisheries Society* 128:370-384.
- Smirnova, E. A., Cox, D. L. and Bajer, A. S. 1995. Antibody against phosphorylated proteins (MPM-2) recognizes mitotic microtubules in endosperm cells of higher plant *Haemanthus*. *Cell Motility and the Cytoskeleton* 31:34-44.
- Cox, D.L. 1994. What young biologists need to know. A review of *The Right Tools for the Job. At Work in Twentieth-Century Life Sciences*, Clarke, A. E. and Fujimura, J. H. (Editors). *The Quarterly Review of Biology* 69: 379-380.
- Cox, D.L. and Koob, T.J. 1993. Predation on elasmobranch eggs. *Symposium on Reproduction and Development in Cartilaginous Fishes*. In *Environmental Biology of Fishes*, 38: 117-125.

- Cox, D.L. and Koob, T.J. 1993. Solid-state catechol oxidase in skate (*Raja erinacea*) egg capsule. *The Bulletin, Mount Desert Island Biological Laboratory*, 32: 17-19
- Koob, T.J. and Cox, D.L. 1993. Stabilization and sclerotization of *Raja erinacea* egg capsule proteins. *Symposium on Reproduction and Development in Cartilaginous Fishes*. In *Environmental Biology of Fishes*, 38: 151-157.
- Straus, J.W., Monian, C.L. and Cox, D.L. 1993. Nidamental gland catechol oxidase in the little skate (*Raja erinacea*): latency caused by an endogenous low molecular weight factor. *Comparative Biochemistry and Physiology 105B*: 117-122.
- Straus, J.W., Rabidou, N.C., Bogdany, J.K. and Cox, D.L. 1993. Oxidative enzymes and the formation of egg capsules in the little skate (*Raja erinacea*). *The Bulletin, Mount Desert Island Biological Laboratory*, 32: 14-16.
- Straus, J.W. and Cox, D.L. 1992. Purification and characterization of cysteine proteinases from *Tetrahymena thermophila*. *Comparative Biochemistry and Physiology 97B*: 641-653.
- Straus, J.W., Monian, C.L. and Cox, D.L. 1992. Catechol oxidase latency in nidamental gland extracts from the little skate (*Raja erinacea*). *The Bulletin, Mount Desert Island Biological Laboratory*, 31: 24-26.
- Straus, J.W., Monian, C.L. and Cox, D.L. 1992. Preparation and characterization of immobilized antipain and chymostatin for the isolation of proteolytic enzymes by affinity chromatography. *The Bulletin, Mount Desert Island Biological Laboratory*, 31: 20-23.
- Cox, D.L. and Rogers, B. 1992. A review of *The History of Biology: A Selected, Annotated Bibliography*. *The Quarterly Review of Biology* 67: 350-351.
- Cox, D.L. and Koob, T.J. 1991. Predation on eggs of the little skate (*Raja erinacea*) in the Gulf of Maine. *The Bulletin, Mount Desert Island Biological Laboratory* 30: 123-124.
- Koob, T.J. and Cox, D.L. 1991. Skate (*Raja erinacea*) egg capsule proteins. *The Bulletin, Mount Desert Island Biological Laboratory* 30: 21-23.
- Straus, J.W. and Cox, D.L. 1991. Catechol oxidase in the little skate (*Raja erinacea*) shell gland: enzyme latency induced by an endogenous factor. *The Bulletin, Mount Desert Island Biological Laboratory* 30: 23-25.
- Cox, D.L. and Koob, T.J. 1990. Latent catechol oxidase in the little skate

(*Raja erinacea*). *Comparative Biochemistry and Physiology* 95B: 767-771.

- Koob, T.J. and Cox, D.L. 1990. Introduction and oxidation of catechols during the formation of the skate *Raja erinacea* egg capsule. *Journal of the Marine Biological Association, U.K.* 70: 395-411.
- Cox, D.L. and Koob, T.J. 1989. Studies on skate (*Raja erinacea*) egg capsule formation. IV. Catechol oxidase activation. *The Bulletin, Mount Desert Island Biological Laboratory* 28: 126.
- Koob, T.J. and Cox, D.L. 1989. Accumulation of calcium and magnesium in *Raja erinacea* egg capsule during formation and after oviposition. *The Bulletin, Mount Desert Island Biological Laboratory* 28: 124-126.
- Koob, T.J. and Cox, D.L. 1988. Egg capsule catechol oxidase in the little skate *Raja erinacea* Mitchill, 1825. *The Biological Bulletin* 75: 202-211.
- Cox, D. L., Mecham, R.P. and Koob, T.J. 1987. Site-specific variation in amino acid composition of skate egg capsule (*Raja erinacea* Mitchill 1825). *Journal of Experimental Marine Biology and Ecology* 107: 71-74.
- Koob, T.J. and Cox, D.L. 1987. *Raja erinacea* egg capsule: a model for interactions of metals with membrane-bound quinones. *The Bulletin, Mount Desert Island Biological Laboratory* 27: 116-117.
- Koob, T.J. and Cox, D.L. 1986. Effects of salinity, pH and urea on shell gland catechol oxidase activity of the little skate (*Raja erinacea*). *The Bulletin, Mount Desert Island Biological Laboratory* 26: 113-116.
- Koob, T.J. and Cox, D. L. 1986. Studies on skate (*Raja erinacea*) egg capsule formation. II. Introduction of catechols occurs *in utero*. *The Bulletin, Mount Desert Island Biological Laboratory* 26: 109-112.
- Koob, T.J. and Cox, D.L. 1985. Shell gland catechol oxidase in the skate (*Raja erinacea*). *The Bulletin, Mount Desert Island Biological Laboratory* 25: 132-134.
- Cox, D.L., Koob, T.J., Mecham, R.P. and Sexton, O.J. 1984. External incubation alters the composition of squamate eggshells. *Comparative Biochemistry and Physiology* 79B: 481-487.
- Koob, T.J. and Cox, D.L. 1984. Studies on skate (*Raja erinacea*) egg capsule formation. *The Bulletin, Mount Desert Island Biological Laboratory* 24: 78-81.
- Cox, D.L. 1983. Chemical composition of *Iguana iguana* eggshell. *Annual*

*Report of the American Philosophical Society 1983: 147-148.*

- Campbell, E.J., Senior, R.M., McDonald, J.A. and Cox, D.L. 1982. Proteolysis by neutrophils: relative importance of cell-substrate contact and oxidative inactivation of proteinase inhibitors *in vitro*. *Journal of Clinical Investigation* 70: 845-852.
- Cox, D.L., Mecham, R.P. and Sexton, O.J. 1982. Lysine-derived cross-links are present in a non-elastin, proline-rich protein fraction of *Iguana iguana* eggshell. *Comparative Biochemistry and Physiology* 72B: 619-623.
- Cox, D.L. 1980. The history of ecology: archives of the Ecological Society of America. *Bulletin of the British Ecological Society* XI(4): 127-129.
- Cox, D.L. 1980. A note on the queer history of niche. *Bulletin of the Ecological Society of America* 61(4 ): 201-202.

## OTHER CREATIVE WORKS

- Cox, D.L. and CM & Associates. 1999. Ecosystems of Florida Traveling Museum Exhibits. Prepared for The Environmental Learning Center, Vero Beach, FL.
- Cox, D.L., 1999. Pelican Island National Wildlife Refuge and the Indian River Lagoon. Public access and education project. City of Sebastian, FL.
- Cox, D.L., 2000. Changing the Course of the Future: Earth Stewards Curriculum. Vero Beach, FL: School District of Indian River County.
- Cox, D.L., 2000. The St. Sebastian River. Outdoor interpretive trail & panels. Vero Beach, FL: Indian River County Parks Department.
- Cox, D.L., 2001. Science for Earth Stewards: K – 5 Science Curriculum. Vero Beach, FL: School District of Indian River County.
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- Cox, D.L. 2002. Let’s Do This Together. Video Script. Vero Beach, FL: The Environmental Learning Center.
- Cox, D.L. 2002. Public Environmental Education Facilities and Boardwalk Extension. Vero Beach, FL: The Environmental Learning Center.

- Cox, D.L., and Alexander, W. 2003. *Traces: The Legacy of Indian River County, Volume I. Prehistory.* Vero Beach, FL: School District of Indian River County.
- Cox, D.L. 2003. *Master Interpretive Plan for Public Environmental Education Facilities.* Vero Beach, FL: The Environmental Learning Center.
- Cox, D.L. 2003. *Restoring Natural Plant Communities in the Lost Tree Islands Conservation Area.* Vero Beach, FL: A Proposal in partnership with Indian River County, The Town of Indian River Shores, The City of Vero Beach, The Marine Resources Council, and Coastal Tech, Inc.
- Cox, D.L. 2004. *Pre-Drainage Everglades Landscapes and Hydrology: A Review.* South Florida Water Management District: West Palm Beach, FL.
- Cox, D.L. 2004. *The Native Way: Interpretive Trail.* Vero Beach, FL: The Environmental Learning Center.
- Cox, D.L. 2004. *County Tree Protection Ordinance.* Indian River County, FL. In partnership with Pelican Island Audubon Society, and the Division of Community Development and Planning, Indian River County.
- Cox, D.L. and Stanbridge, R. 2005. *The Trans-Florida Central Railroad. Rails-to-Trails Project, interpretive displays.* Vero Beach, FL: Indian River County Parks Department and Indian River Historical Society.
- Cox, D.L., and Alexander, W. 2005. *Traces: The Legacy of Indian River County, Volume II. European Contact and Colonization.* Vero Beach, FL: School District of Indian River County. *In preparation.*
- Ecker, D., Veron, B., Catchpole, J., Tripson, J. Baker, R. and Cox, D.L. 2005. *Landscape Ordinance.* Indian River County, FL. In partnership with Pelican Island Audubon Society, and the Division of Community Development and Planning, Indian River County.
- Cox, D.L. 2005. *Regional Simulation Natural Systems Model: Peer Review for the South Florida Water Management District.* This model is currently under development with review to begin about 8/05.



## CONTACT INFORMATION

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