

## Education in natural resource conservation

*Barny Dunning, Project Leader*



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### Goals:

To help increase ecological literacy among students, and to conduct research on how to teach science most effectively to students from a wide variety of disciplines.

### Recent Publications:

MacGeorge, E.L., et al. (in press). The influence of learning characteristics on evaluation of audience response technology. *Journal of Computing in Higher Education*.

Dunning, J. B. et al. 2006. Species and landscape approaches to conservation. Pp. 419-466, in: Groom, M. J., et al. *Principles of Conservation Biology*, Sinauer Associates, Sunderland, MA.

Dunning, J. B., et al. 2002. Individual-based modeling: the Bachman's Sparrow. Pp. 228-245, in: Gergel, S. & M. Turner. *Learning landscape ecology: a practical guide to concepts and techniques*. Springer-Verlag, NY.

Dunning, J.B. 2000. They shoot bison, don't they? Discussing ethics in conservation courses. *The NACTA Journal* (March issue), pages 40-45.

### Statement of Problem:

Dr. Dunning is interested in promoting public policy and personal lifestyles that help maintain the biological diversity in the environments in which we live. In that regard, his teaching focuses on courses in environmental science and conservation biology, where students can learn about the major issues being discussed today, and use an understanding of ecology and resource management to form their own opinions as to what we can do as a nation, community, and individual to maintain a healthy world.

### Current Activities:

Dr. Dunning teaches a large-enrollment freshman course entitled "An Introduction to Environmental Conservation." Taken by more than 400 students each spring, this course provides an opportunity to educate a broad spectrum of Purdue students on a variety of ecological and environmental issues. The course is also a required course for FNR undergraduates, providing a foundation in ecology on which later courses build. Dr. Dunning also teaches a senior-level environmental issues course that uses small-group discussion as a way of helping students develop as ecologically literate citizens.

Among his teaching-related publications, Dr. Dunning has written case studies in presentation of ethics concepts in conservation courses, a laboratory exercise for a landscape ecology textbook, and a chapter on population ecology for the most prominent graduate text in conservation biology.

Teaching large enrollment courses such as Introduction to Environmental Conservation is a challenge. Students in such classes tend to feel anonymous and are not motivated to attend class regularly. To make his course more interactive, Dr. Dunning was one of the first instructors at Purdue to use a Classroom Performance System (CPS) in a large-enrollment class. CPS is a type of instructional technology which allows students to answer questions in class using a device similar to a TV remote control. The students get immediate feedback on the correct answer while the CPS is in use, as well as summaries of how their fellow classmates answered each question. Dr. Dunning uses the CPS to ask opinion-based questions such as "What should the United States do to reduce mercury pollution?" "Should the USA sign the Kyoto Protocol?" and "Did you personally find one of the reasons to protect endangered species convincing?" These questions allow the students to express their opinions and see those of their classmates, without worrying about whether they are "right" or "wrong" in the instructor's eyes. Dr. Dunning is part of an interdisciplinary group, including Purdue faculty Erina MacGeorge of Communications and Scott Homan of Technology, examining the value of this type of instructional technology in a wide variety of courses.