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# An Earth Systems Approach to Sustainability Education

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The goal of Earth System Science (ESS) is to obtain a scientific understanding of the entire Earth System on a global scale by describing how its component parts and their interactions have evolved, how they function, and how they may be expected to continue to evolve on all time scales.

Sustainability education promotes explanation and understanding of the meaning of sustainability and encourages students into an active engagement with sustainability issues in order to promote lifestyles that are compatible with the sustainable and equitable use of resources. To achieve this sustainability education must be truly interdisciplinary involving science, politics, economics, philosophy and other social sciences. As part of the proclamation of the United Nations General Assembly to have the 10-year period from 2005 through 2014 be the United Nations Decade of Education for Sustainable Development, governments around the world have been invited to integrate education for sustainable development into their national educational strategies and action plans at all appropriate levels.

Sustainable development is not a term that has a simple agreed meaning because it is the result of discussion between parties who come from essentially quite distinct paradigms or world views. Many conservationists argue that ecological sustainability should be a goal in its own right, unshackled to development. On the other hand, some representatives of business, industry and commerce argue that it is necessary to put economic sustainability ahead of ecological sustainability because environmental regulations and conservation principles are expensive and businesses need to be profitable to be able to afford them (Fien 1997).

Earth System Science is well placed to address these issues. The term “Earth System Science” was introduced by the U.S. National Aeronautics and Space Administration in the late 1980s. ESS was proposed as a relatively new approach to understanding how the Earth works and a way to integrate different aspects of Earth Science educational programs.

This paper will describe how ESS and sustainability have been woven into an undergraduate program in Environmental Management at the University of South Australia.

## References

[1] Fien, J. Australian Journal of Environmental Education **13**: 21-26. (1997).