Sustainability Action

What does Education for Sustainability have to do with Ocean and Earth Sciences?

"Our research spans the coast to the deep ocean, tackling the most pressing scientific questions of our age." (http://www.southampton.ac.uk/oes/research/index.page?)

The interactions between the oceans and the earth are critical to understanding many current global challenges. Topic areas of relevance to sustainability already in the Ocean and Earth Sciences curriculum include:

- **The Earth as a system:** understanding the Earth environment at present, in the past and scenarios for the future; the impact of major climatic and biological changes on the Earth, and on people.
- **Geohazards:** understanding major types – volcanoes, earthquakes, landslides – and their impacts on societies and the environment.
- **Ecology:** understanding life at different levels – individuals, populations, communities, ecosystems; community dynamics; animal behaviour.
- **Environmental change:** how environmental changes impact biological communities and ecosystems; how life and the Earth have changed over the last 4.5 billion years; the contributors to and impacts of major changes in the history of life.
- **Humans and the environment:** anthropogenic impacts on the environment, ecosystems, populations; impacts of climate change from cells to organisms, to populations to ecosystems; ocean acidification; sustainable exploitation of natural resources including mineral and fossil fuels; deforestation; coastal degradation; ecosystem services and the benefits that humans derive from the environment; water disposal and water supply; seafloor exploration and surveying; pollution.
- **Population dynamics:** factors contributing to stable populations and species survival; trophic cascades and food web.
- **Conservation:** threats, management and conservation of biodiversity; habitat management and restoration.
- **Ethics:** ethical issues in research; human wellbeing and safety during research.
- **Future thinking:** modelling and projecting future changes and patterns.

Key skills for ocean and earth scientists which sustainability teaching cultivates: interdisciplinarity; informed decision-making; synthesis of different opinions, theory and data; debate and reasoning; teamwork; leadership; problem-solving; oral and written communication; self-management; time-management; critical thinking; future thinking.

Find out more: Contact Julia Kendal (j.kendal@soton.ac.uk) for more information including case studies on teaching sustainability in this area.