

## What does Education for Sustainability have to do with Environmental Science?

“Environmental scientists are at the sharp end of dealing with the challenges that face our world, managing our natural environments sustainably and seeking ways to balance this with economic and social concerns.”

([http://www.southampton.ac.uk/engineering/what we do/environmental science.page](http://www.southampton.ac.uk/engineering/what_we_do/environmental_science.page))

Addressing the world’s sustainability challenges requires the evidence base for policy and action. Environmental science enables a holistic approach to sustainable solutions by integrating the environmental, social and economic considerations. Topic areas of relevance to sustainability already in the Environmental Science curriculum include:

- **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; deforestation; coastal degradation; ecosystem services and the benefits that humans derive from the environment; pollution; impacts of transport on the environment; radioactivity and radiochemistry.
- **Law and management:** assessing the impact of human activity on the environment; life cycle assessment.
- **Ecology:** understanding life at different levels – individuals, populations, communities, ecosystems; community dynamics; animal behaviour.
- **Resource management and conservation:** threats, management and conservation of biodiversity; habitat management and restoration; sustainable resource management e.g. of water, ecosystems.
- **Environmental change:** how environmental changes impact ecosystems; how life and the Earth have changed over the last 4.5 billion years.
- **The Earth as a system:** understanding the Earth environment at present, in the past and scenarios for the future; the impact of major climatic, geochemical 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; factors contributing to stable populations and species survival.
- **Ethics:** ethical issues in research and in industry; human wellbeing and safety during research.
- **Future thinking:** modelling and projecting future changes and patterns.

**Key skills for environmental 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](mailto:j.kendal@soton.ac.uk)) for more information including case studies on teaching sustainability in this area.