

What does Education for Sustainability have to do with Biological Sciences?

Our world-leading research in the areas of molecular and cellular bioscience, biomedical sciences (particularly neuroscience and development), ecology and the environment focuses on addressing today's key challenges. (<http://www.southampton.ac.uk/biosci/index.page?>)

Life on earth is changeable, adaptable, vulnerable. Species and populations interact, destroy and depend upon each other. Understanding these interactions is critical to sustaining human and natural life on earth. Topic areas of relevance to sustainability already in the Biology curriculum include:

- **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; deforestation; coastal degradation; ecosystem services and the benefits that humans derive from the environment.
- **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.
- **Health and genetics:** biotechnology and genetic engineering; cancer and the cell cycle; stem cells and cell replacement in humans; metabolism and metabolic disorders.
- **Ethics:** ethical issues in research; human wellbeing and safety during research.
- **Future thinking:** modelling and projecting future changes and patterns.

Key skills for biologists 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.