Geography, Earth and Environmental Science (GEES) Subject Centre Education for Sustainable Development (ESD) - Resource list

A. GEES - specific resources

1. Case studies of current ESD practice within GEES subjects in UK Higher Education

A collection of cases gathered from the GEES Subject Centre Focus Group held on 26 April 2005. Includes:

- Education for sustainable development Chester style – Cynthia Burek
- Centre for Excellence in Teaching and Learning for Education for Sustainable Development – Alan Dyer
- Deployment of an Active Learning Curriculum to Enhance Student Learning about Sustainability – Mary Dengler
- Delivering Education for Sustainable Development (ESD): Southampton Institute, School of Maritime and Coastal Studies – David Johnson
- Piloting of a Higher Education Continuing Professional Development Course Portfolio: Application of Sustainable Development and Global Citizenship – Larch Maxey
- Sustainable Development Training by CD-based Distance Learning – Robert Morgan
- Bus Shelter Uprooting and Phonebox Bursting: Any Compliments for Youth Sustainability Awareness? - Victor Olumekun
- From Agricultural Sustainability to Sustainable Development – Julian Park
- Sustainability in the curriculum [from HEFCE 2005 consultation on ESD] – Ros Taylor

Available on the GEES ESD web page: http://www.gees.ac.uk/projtheme/esd/esd.htm

2. *Planet* special issue on ESD, December 2002

Planet No. 8 (Special Edition 4) provides the historical context to the debates and practice in ESD within GEES subjects in UK higher education. It is available on the GEES Subject Centre website at:
http://www.gees.ac.uk/pubs/planet/index.htm#PSE4

3. Selected papers on ESD within GEES

- Chalkley, B. (2006) Education for Sustainable Development. *Journal of Geography in Higher Education*, 30 (3) pp. 235-236.
- Elliot, J. A. (2007) Acting sustainably: Encouraging and crediting student engagement in sustainable development. *Planet*, 18, pp. 43-48.
- Haigh, M. (2005) Greening the University Curriculum: appraising an international movement. *Journal of Geography in Higher Education*, 29 (1), pp. 33-50.
- Haigh, M. (2005) Planting Hope: Supporting the greener curriculum. *Planet*, 13, pp. 22-25.
- Higgitt, D., Haigh, M. & Chalkley, B. (2005) Towards the UN Decade of Education for Sustainable Development: Introduction. *Journal of Geography in Higher Education*, 29 (1), pp. 13-17.
- Martin, S & Jucker, R. (2005) Educating Earth-literate Leaders. *Journal of Geography in Higher Education*, 29 (2), pp. 19-29
- Robinson, G. (2005) *Education for Sustainable Development: Human Geography (Agriculture and Rural Development)*. Higher Education Academy Subject Centre for Languages, Linguistics and Area Studies. Available at: http://www.llas.ac.uk/resources/paper/2373.
- Sierps-Jones, H. (2007) Engaging students with sustainability issues. *Planet*, 18, pp. 40-42.

4. Reports and Projects on ESD within GEES

- Elliot, J. (2006) *Acting Sustainably: eEncouraging and crediting student engagement in sustainable development*, School of the Environment, University of Brighton. November 2006. Report
- *Integrating sustainable development principles into professional practice: Initial training requirements for environmental scientists* - Report of GEES/PP4SD/IES research project
- *Phase I of the GEES Subject Centre ESD project* - Report

- *Draft briefing on ESD within GEES* – for consultation
- *Education for Sustainable Development and Global Citizenship Forum* - Outcome from ESD: Graduates as Global Citizens Conference - September 12th -13th, 2005, Bournemouth University
- *Values and Corporate Social Responsibility (CSR)*. A combined project for Philosophical and Religious Studies (PRS) and Geography, Earth and Environmental Sciences (GEES) Subject Centres - Project Report
- The Higher Education Academy - GEES-related Projects on ESD:
    - Experiencing Sustainable Development
    - Teaching Sustainable Development Innovation: The Market Place
    - Welcome to the Sahel

Available on the GEES ESD web page: http://www.gees.ac.uk/projtheme/esd/esd.htm

GEES Subject Centre resource database - http://www.gees.ac.uk/db/
Case studies on education for sustainable development include:

- *Sustainable development and the professions.*
An article written for *Planet*, issue 5 (January 2002). This article introduces the Professional Practice for Sustainable Development (PP4SD) Framework, developed by 14 professional bodies, with the aim of developing professional thinking and practice.
- *Materials education guides for lecturers: environmental materials*
This guide aims to 'provide information on what can be taught under the broad title of 'Environmental Materials' (from life cycle analysis to individual areas of study) and considers effective delivery and assessment of learning.
- *Sustainable and Virtual Distance Learning.*
This abstract describes internet-delivered postgraduate distance learning courses (MA in Sustainable Development and MSc in Sustainability and Environmental Management) developed using the COSE (Creation of Study Environments) virtual learning environment.
- *A Citizen's Jury*
This abstract describes an assignment developed for MSc students, covering policy issues to do with Sustainable Development and its implementation in the UK.
- *Conservation in Africa: Challenging Student Preconceptions by Drawing on the Teacher's Research.*
This case study describes the use of staff research in sustainable development in teaching a first year undergraduate module 'Society, Environment and Place' at Massey University, New Zealand.
- *Linking Teaching and Research within the Bourne Stream Partnership: a community based project.*
An abstract describing the Bourne Stream Partnership based at Bournemouth University, providing placement, fieldwork and research project opportunities for undergraduate and postgraduate students alongside community stakeholders.

B. Generic ESD resources

ESD

- Blaze Corcoran, P. & Wals A.E.J. (2004) *Higher Education and the Challenge of Sustainability: problematics, promise, and practice.* Kluwer Academic Publishers, Dordrecht.
- Cade, A. (2008) *Research on the links between sustainability and employability in the graduate job market in relation to higher education teaching and learning.* Report to the Higher Education Academy, StudentForce for Sustainability. 41p. http://www.studentforce.org.uk/pdf/EmployableGraduates2008.pdf
- Chalkley, B., Haigh, M. and Higgitt, D. (Eds.) (2009). *Education for Sustainable Development. Papers in Honour of the United Nations Decade of Education for Sustainable Development (2005-2014).* Routledge.
- Clugston, R. & Calder, W. (1999) *Critical dimensions of sustainability in higher education.* In: Filho, W.L. (Ed). Peter Lang, Frankfurt am Main. pp. 31-46.
- Corcoran, P.B. & Wals, A.E.J. (2004) *Higher education and the challenge of sustainability.* Kluwer Academic Publishers, Dordrecht.
- Dawe, G., Jucker, R. & Martin, S. (2005) *Sustainable development in higher education: Current practice and future developments.* Report for the Higher Education Academy. Available for download at: http://www.heacademy.ac.uk/resources/detail/ourwork/tla/sustainability/sustainable_development_in_HE
- Eisler, R (1994) *From Domination to Partnership: The Hidden Subtext for Sustainable Change*, Journal of Organizational Change Management, 7 (4), pp. 32-46.
- Journal of Geography in Higher Education (JGHE 2006), 30 (2) and Journal of Geography in Higher Education (JGHE 2005), 29 (1). Both editions cover ESD topics and provide ESD case studies.

- Macgregor, S (2007) *No Sustainability without Justice: A Feminist Critique of Environmental Citizenship.*, PSA Conference, Bath, http://www.psa.ac.uk/2007/pps/MacGregor.pdf (last visited 29.11.07)
- Pearson, S. & Honeywood, S. (2005*) Not yet learning for sustainability: The challenge of environmental education in a university*. International Research in Geographical and Environmental Education, 14 (3), pp. 173 - 186.
- Sterling, S (2007) *Riding the Storm: towards a connective cultural consciousness*, in: Wals, A.E.J (2007) (Ed) *Social Learning Towards a Sustainable World, Principle, perspectives and praxis*, pp. 63-82.
- Sterling, S. (2004) *Whole Systems Thinking as a Basis for Paradigm Change in Education: Explorations in the Context of Sustainability.* PhD thesis downloadable from: http://www.bath.ac.uk/cree/home.htm
- Sterling, S. (2001) *Sustainable Education – Re-visioning Learning and change*. Green Books. Schumacher Society, Totnes.
- The Higher Education Funding Council for England (2005) *Sustainable Development in Higher Education*. http://www.hefce.ac.uk/pubs/hefce/2005/05_28/
- Tilbury, D., Stevenson, R., Fien, J. & Schreuder, D. (Eds) *Education and sustainability: Responding to the global challenge*. IUCN, Gland.
- Walker, P. (2006) *Change management for sustainable development*. Best Practice Series, vol. 8. The Institute of Environmental Management and Assessment.
- Wals, A. & Jickling, B. (2002) '*Sustainability' in higher education: From doublethink and newspeak to critical thinking and meaningful learning*. International Journal of Sustainability in Higher Education, 3 (3), pp. 221-232.

Campus and Curriculum

- Barlett, P. & Chase, G.W. (2004) (Eds*) Sustainability on campus. Stories and Strategies for Change*. Cambridge MA:MIT.
- Blewitt J. & Cullingford C. (2004) *The Sustainability Curriculum: the challenge for higher education*. Earthscan, London.
- Centre for Bioscience. *Ethics Audit, Incorporating Sustainability*, HEA Centre for Bioscience, Last Updated July 2008. http://www.bioscience.heacademy.ac.uk/ftp/resources/ethicsaudit.pdf
- Dahle, M. & Neumeyer, E. (2001) *Overcoming barriers to campus greening: a survey among higher education institution in London, U.K.* International Journal of Sustainability in Higher Education, 2 (2), pp. 139-160.
- Dixon, M., Webb, M., Cook, G. & Forster, J. (2007) *Biodiversity on Campus. An EAUC practical guide*. The Environmental Association for Universities and Colleges. http://www.eauc.org.uk/file_uploads_bio/biog_pt1.pdf
- Downey, P. (2004) *Sustainability takes time*. International Journal of Sustainability in Higher Education, 5 (1), pp. 81-90.
- Fisher, R. (2003) Applying *ISO 14001 as a business tool for campus sustainability: A case study from New Zealand*. International Journal of Sustainability in Higher Education, 4 (2), pp. 138-150
- Gray-Donald, J. & Selby, D. (2004) *Through the (not so) green door: Connecting campus greening and curriculum change*. Ekistics (The International Human Settlement Journal), 71, (427/428/429), pp. 203-212.
- Koester, R. Eflin, J. & Vann, J. (2006) *Greening of the campus: a whole-systems approach.* Journal of Cleaner Production, 14, pp. 769-779.
- Roberts, C. & Roberts, J. (2007) (Eds) *Greener by degrees: Sustainability through higher education curricula*. Geography Discipline Network (GDN), Cheltenham.
- Sharp, L. (2002) *Green campuses: the road from little victories to systemic transformation*. International Journal of Sustainability in Higher Education, 3 (2), pp. 128-145.

6. ESD projects - UK

- *Centre for Sustainable Futures (CSF) - http://www.csf.plymouth.ac.uk*

The CSF is the Centre for Excellence in Teaching and Learning (CETL) for Education Sustainable Development. The aim is to put Sustainability at the centre of the thinking and doing of the University and also the wider national and international community. CFS's web site hosts the online activity 'Sustainability Interactive Learning Models' (http://csf.plymouth.ac.uk/?q=node/579) and the Sustainability Module Guidelines 'Sowing Seeds - How to make your module a bit more sustainability orientated' (http://csf.plymouth.ac.uk/?q=node/585)

- *C-SCAIPE - http://www.c-scaipe.rroom.net/*

The Centre for Sustainable Communities Achieved through Integrated Professional Education, based at the University of Kingston, addresses the delivery of sustainable communities by producing graduates capable of working with all professions and wider stakeholder groups, taking a holistic approach to the concept of sustainability. It rewards excellence and enables staff to develop further teaching expertise, increasing the effectiveness of student learning.

- *CRUCIBLE -* http://www.roehampton.ac.uk/crucible/

This is the Centre for Rights Understanding and Citizenship Based on Learning through Experience, based at the University of Roehampton.

- *EcoCampus - http://www.ecocampus.co.uk/index.htm*

A national Environmental Management System (EMS) and award scheme for the higher education sector, allowing universities to address key issues of environmental sustainability. Project page contains links to case studies.

- *University of Brighton ESD Project - http://staffcentral.brighton.ac.uk/clt/ESD/index.html*

This research project carried out in 2007 by the Centre for Learning and Teaching at the University of Brighton and funded by the Education Subject Centre ESCalate, aimed to identify, share and encourage the uptake of successful models and strategies for embedding sustainable development into the HE curriculum and addresses learning outcomes, assessment and learning and teaching practices. The website contains resources and case studies e.g. 'The ethical geographer' and "Environmental geology/professional practice, Level 3'.

- *Green Gown Awards 2008 - www.heepi.org.uk*

The Green Gown Awards, organised by the Higher Education Environmental Performance Improvement (HEEPI) project, recognise positive actions to achieve sustainable higher and further education, with particular emphasis on environmental improvement.

- *Higher Education Academy ESD Project - http://www.heacademy.ac.uk/ourwork/learning/sustainability*

The purpose of the ESD Project is to help institutions and subject communities develop curricula and pedagogy that will give students the skills and knowledge to live and work sustainably. Web page includes:
- ESD Project Newsletter
- ESD, Employability and External Engagement: Event Report by Alex Ryan (ed.)
- Wilmot, A. (2008) *How to make teaching more sustainable*. Centre for Bioscience. Series of five information sheets funded by the HEA ESD Project to support bioscience teaching staff in making their teaching practices more sustainable. Available at: http://www.bioscience.heacademy.ac.uk/resources/esd/howto.aspx

- *Higher Education Environmental Performance Improvement (HEEPI) - http://www.heepi.org.uk*

A partnership project based at the University of Bradford, with four main strands: Building level benchmarking of energy and water consumption; Developing case studies of best practice in environmental performance improvement in HE; Identifying and testing standardized measures for procurement, waste and others; Developing the capacity of staff with environment-related responsibilities to achieve positive environmental change within their institutions

7. Useful web resources - UK

- *Bishops Wood Centre, Worcestershire - http://worcestershire.whub.org.uk/home/wcc-edu-bishops-wood.htm*

- *Centre for Alternative Technology, Snowdonia - http://www.cat.org.uk/index.tmpl?refer=index&init=1*

- *Centre for Research in Education and the Environment (CREE) - http://www.bath.ac.uk/cree/*

CREE, at the Department of Education, University of Bath, focuses on educational issues relating to the environment and sustainability. Downloadable texts and resources.

Centre for Learning and Teachin - http://staffcentral.brighton.ac.uk/clt/resources/ESD.htm
Education for Sustainable Development Resources

- *DEFRA Sustainable Development - http://www.defra.gov.uk/sustainable/index.htm*

Background documents to the UK Strategy for Education for Sustainable Development and Action Plan, with links to the recent Environmental Audit Committee report, Learning the Sustainability Lesson

- *DfES - http://www.dfes.gov.uk/aboutus/sd/*

Department for Education and Skills website on sustainable development education

- *EAUC – www.eauc.org.uk*

The Environmental Association for Universities and Colleges was launched in September 1996 and it provides a forum for the sharing of experiences and information between individuals from different colleges and universities and disseminates good practice on environmental issues, campus greening and curriculum greening.

- *Ecoversity, Bradford University - http://www.brad.ac.uk/ecoversity/*

- *Education for Sustainable Development and Global Citizenship.* Institutions from Wales and the Welsh Assembly Government. *http://www.esdgc-wales.org.uk/english/higher_ed/higher_ed.htm*

- *Forum for the Future - http://www.forumforthefuture.org.uk*
Including links to the Curriculum Guide publications on communicating, reporting, purchasing and travelling for sustainability. To download at: http://www.forumforthefuture.org.uk/library/browse/?tid=1005

- *HEFCE – www.hefce.ac.uk*
Previous and recent onsultation on education for sustainable development, website contains presentations and talks given at seminars during the consultation period.

- *Institute for Development Studies, Brighton - http://www.ids.ac.uk/ids/*
This student-based organisation has a campaign under its climate change programme on greening the university campus; with action guide, campaign and league table of universities' environmental performance.

- *Kingston University - Sustainability Team.* http://www.kingston.ac.uk/sustainability/

- *People and Planet - http://www.peopleandplanet.org/gogreen/*
This student-based organisation has a campaign under its climate change programme on greening the university campus, with action guide and campaign pack available.

- *PP4SD – Professional Practice for Sustainable Development. http://www.pp4sd.org.uk/*
PP4SD is a project dedicated to promoting sustainable practice among professionals, through developing and disseminating continuing professional development material and events that encourage *cross-professional dialogue*. *PP4SD is a partnership project managed by the following organisations: Environment Agency, Institution of Environmental Sciences, Society for the Environment*

- *Schumacher College, Dartington - http://www.schumachercollege.org.uk/*

- *The Sustainability Centre, Glasgow - http://www.sustainabilitycentre.org/*

- *University of Hertfordshire Environmental Strategy. http://www.herts.ac.uk/envstrat*
Information on environmental strategy, including Project Shop across disciplines for students.

8. Useful web resources - International

- *Australian Research Institute in Education for Sustainability (ARIES) - http://www.environment.gov.au/education/aries/index.html*

- *Earth Charter Initiative - http://www.earthcharter.org/*

- *Dutch national network for sustainable development in higher education – www.dho.nl/*
Publications and disciplinary reviews on ESD

- *Global Footprint Network.- advancing the science of sustainability. http://www.footprintnetwork.org/en/index.php/GFN/*

- *National Environmental Education Council - http://www.deh.gov.au/education/neec/fhewg.html*
The Further and Higher Education Working Group of the Australian Department for Environment and Heritage, with information on the Action research Towards Change for Sustainability (ACTS) pilot project

- *Teaching and Learning for a Sustainable Future (A UNESCO site) - http://www.unesco.org/education/tlsf/*
This is a multimedia, interactive professional development program with materials, exercises, and links that help educators deepen their understanding of education for sustainability and its importance in addressing the economic, social, and environmental issues of the world.
This site presents key educational issues that form the rationale for Education for a Sustainable Future (ESF).

- *UN Decade for Education for Sustainable Development - http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html*

Briefings, implementation plan and links to other publications on ESD

- *UNESCO-Chair Higher Education for Sustainable Development - http://www.uni-lueneburg.de/infu/chair/*

- *United Nations University - http://www.ias.unu.edu/research/educationsd.cfm*

- *World Conservation Union (IUCN) – http://www.iucn.org/themes/cec/education/whatis.htm*
Publications, reviews and resources on ESD

9. Useful web resources - USA & Canada

- *Association for the Advancement of Sustainability in Higher Education - http://www.aashe.org/*

- *Campus Ecology - http://www.nwf.org/campusecology/index.cfm*
A National Wildlife Federation (NWF) program, Campus Ecology is a conservation initiative in higher education that aims to transform the nation's college campuses into living models of an ecologically sustainable society. The resources of this NWF program include Campus Ecology fellowships, technical assistance, publications, conference information, and a "Campus Ecology Action Toolkit."

- *Centre for Ecoliteracy. http://www.ecoliteracy.org/*

The Center for Ecoliteracy is dedicated to education for sustainable living. This web resource is aimed at the schools sector but contains information that is of wider interest and use.

- *Centre for Sustainable Community Development, Simon Fraser University - http://www.sfu.ca/cscd/*

- *Education for Sustainable Development Toolkit - www.esdtoolkit.org*
The *Education for Sustainable Development Toolkit ,* developed by Dr Rosalyn McKeown at the University of Tennessee, includes an introduction to sustainability, a description of the major thrusts and components of education for sustainable development, and a discussion of 12 major issues that have slowed the progress of ESD. It lists links to other Web sites on sustainability, education for sustainability, historic United Nations documents, and communities that have developed sustainability plans. (The ESD Toolkit was cited in a recent statement by United Nations Secretary-General, Kofi Annan.)

- *Education for Sustainability Western Network - www.efswest.org/*
Educational Resources Database (beta version) contains course syllabi, teaching methods and course projects, and campus EFS profiles.

- *Environmental Education and Training Partnership – www.eetap.org/*
Resources on environmental literacy

- *Green Teacher - http://www.greenteacher.com/*
A useful American magazine providing articles and resources

- *Harvard Green Campus Initiative - http://www.greencampus.harvard.edu*
The Harvard Green Campus Initiative aims to engage the Harvard community in becoming a learning organization and living laboratory dedicated to the pursuit of campus environmental sustainability.

- *National Environmental Education and Training Foundation – www.neetf.org*
Audit tools on environmental knowledge, attitudes and behaviours

- *North American Association for Environmental Education – www.naaee.org/*
Guidelines, resources and training workbooks.

- *Second Nature - http://www.secondnature.org*
This site offers guidance and assistance to institutions of higher education in their efforts to make sustainability an integral part of the institution and expand sustainability into personal and community life. The site is designed for a range of audiences and includes resource guides for faculty, administration, and students. These resource guides foster an understanding of sustainability issues and provide examples of how others are working together across traditional boundaries in both campus and community. Each guide includes on-line databases of bibliographies, contacts, calendars of workshops and other events, and links to descriptions of case studies of sustainability efforts at various higher

education institutions. The site's Resource Center section, originally known as Starfish, provides an extensive database of syllabi for courses that address environmental themes.

- *Sustainable Development on Campus: Tools for Campus Decision Makers - http://iisd1.iisd.ca/educate/*

This site includes learning modules, case studies, action plans, environmental policies, resources, forums, and contacts - all designed to help administration, students, or faculty implement sustainable development on campus - and also includes links to a "bookshelf" of key reports and guides covering university leadership, green campus administration, curriculum issues, and student actions.

- *Teaching and Learning for a Sustainable Future (A UNESCO site) - http://www.unesco.org/education/tlsf/*

This is a multimedia, interactive professional development program with materials, exercises, and links that help educators deepen their understanding of education for sustainability and its importance in addressing the economic, social, and environmental issues of the world. This site presents key educational issues that form the rationale for Education for a Sustainable Future (ESF).

- *The Center for International Earth Science Information Network (CIESIN) - www.ciesin.org*

CIESIN is a center based at Columbia University, working at the intersection of the social, natural, and information sciences. It provides on-line data and interdisciplinary research findings related to human interactions in the environment, and educational resources for all levels.

- *The Cloud Institute for Sustainability Education - http://www.sustainabilityed.org/*

The web site provides resources and materials to help schools, school systems, and their communities teach and learn for a sustainable future.

- *The International Institute for Sustainable Development (IISD) - http://iisd1.iisd.ca/sd/*

An interactive toolkit to introduce some of the basic concepts of sustainable development and ways these concepts are put into practice in institutions, developed primarily for the higher education community. The set of learning modules is aimed at providing a more complete understanding of the concept of sustainable development and its relevance to personal lives as well as institutions. The site also features a chronology of the concept of sustainable development and links to a data bank of Sustainable Development Principles. A section on indicators and measurement shows how to track progress towards sustainability.

- *The Sustainability Education Center - http://www.sustainabilityed.org/*

The Sustainability Education Center explores the relationships among economic systems, ecological systems, and justice in contexts ranging from local communities to global institutions. This site offers educational materials, professional development, and community education focused on sustainability.

- *University Leaders for a Sustainable Future (ULSF) - http://www.ulsf.org/*

ULSF works in partnership with over 275 signatories of the Talloires Declaration and other colleges and universities pursuing sustainability. ULSF fosters institutional capacity to develop ecologically sound policies and practices and strives to make sustainability a major focus of curriculum, research, operations, and outreach at higher education institutions worldwide."

- *University of British Columbia (UBC) - http://www.sustain.ubc.ca/*

The Sustainability Office of the University of British Columbia (UBC) promotes, coordinates, and implement very effective sustainability practices.