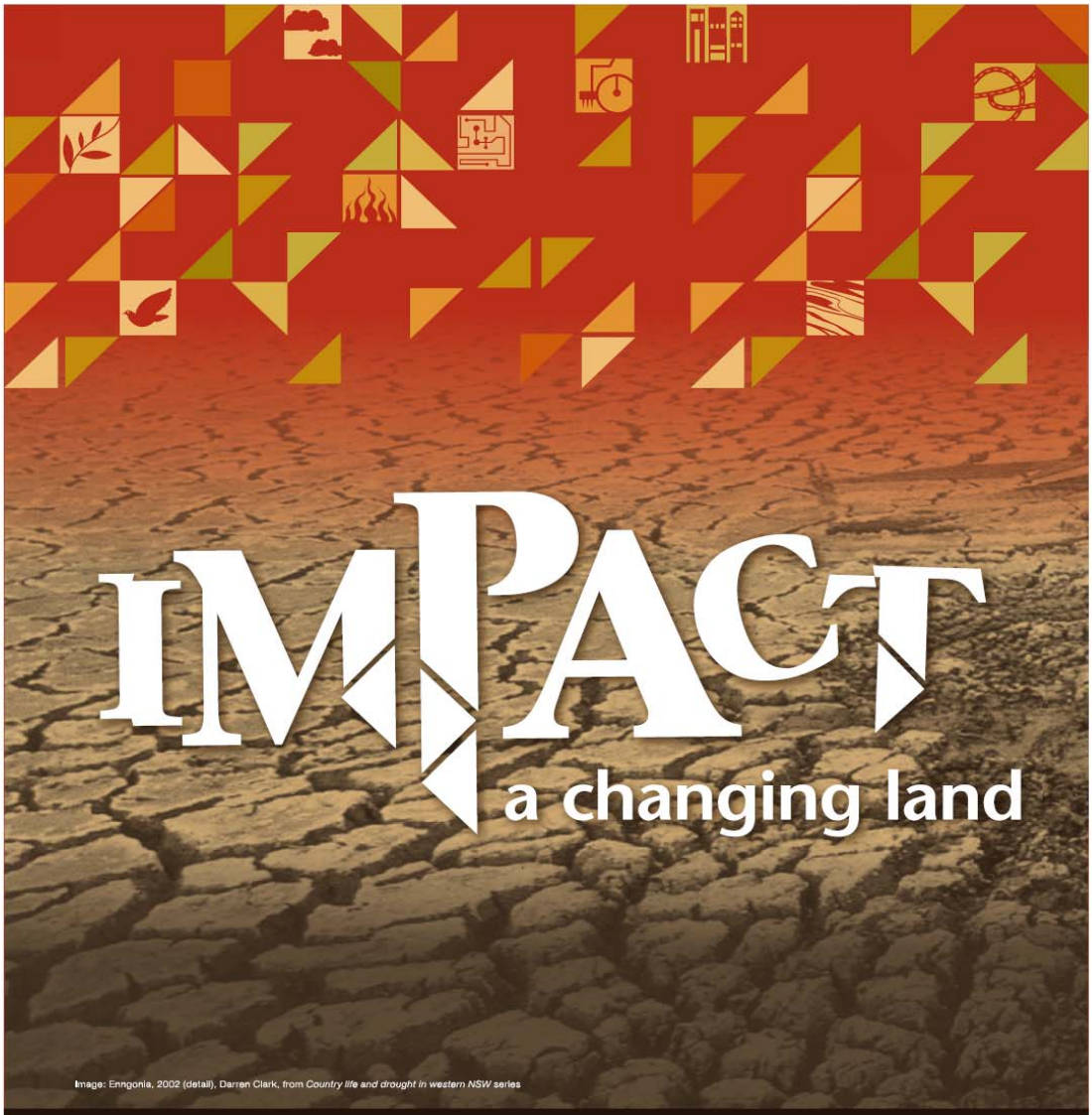

Image: Enngonia, 2002 (detail), Darren Clark, from *Country life and drought in western NSW* series

IMPACT: A CHANGING LAND
EDUCATION KIT

State Library of New South Wales

NMF Supported by the Nelson Meers Foundation

Introduction

Impact: A changing land reveals the dramatic environmental change brought about by human activity, starting with the over-exploitation of natural resources by early European settlers through to the gritty reality of the modern industrial age.

According to exhibition curator Stephen Martin: 'This is a remarkable and moving exposé of valuable historical evidence illustrating the actions and attitudes that have protected and harmed our environment in NSW since European settlement.'

The exhibition centres on four contentious geographic locations: greater Sydney, NSW coasts, the Murray-Darling Basin and World Heritage-listed Macquarie Island.

Stories of drought, land clearing and preservation, whaling, exotic pests and air pollution are told through rarely seen artworks, photographs, documents and unique objects from the State Library's unrivalled collections.

Contrasting with the controversial history of harm to the environment are incredible stories of deep affection and inspiring endeavours to save and preserve this fragile land.

Crusaders like the little-known Bradley sisters, who advocated a system of bush regeneration in the 1970s, have protected precious land and created a system still practised today. And the 13 Hunters Hill housewives who linked arms with trade unionists to save Kelly's Bush, and achieved the world's first 'green ban'.

The exhibition completes this timeline of environmental impact with leading scientists like Tim Flannery, Australian of the Year 2007, presenting their opinions on current issues and solutions for a sustainable future.

Highlights from the exhibition include:

- A striking collection of contemporary Australian rural photographs by Darren Clark that capture evocative images of a damaged and suffering landscape
- *Cabbage trees near the Shoalhaven River*, 1860*,* a rare painting by Eugène von Guérard depicting lush bushland, now suburban Wollongong
- Exquisite artworks by John and Elizabeth Gould in the 1800s, providing priceless evidence of extinct Australian animals and birds, including the Tasmanian Tiger

Infocus Resources

Item 2007

Department of Agriculture. *Use water where it falls: leave salt where it is.*, 2001

Item 2009

Dr Meyer, Wayne. *The water eaters*. Ecos, 1999

Item 2758

Pyper, Wendy. *Preparing for a sea-level rise*. Ecos, 2007

Item 2759

Byron, Neil. *Water resources: an introduction*. Issues, 2007

Item 2760

Kennedy, Cris. *Tapping into desalination*. Issues, 2007

Item 2773

Durrant, Nicola. *The science and economics of climate change***.** National Environmental Law Review, 2006

These items can be ordered by schools or individual students by going to http://infocus.sl.nsw.gov.au/res/home.cfm

Other Resources

These items are selected from State Library of New South Wales resources and, whilst not for loan, they can be used in the Library. Many local libraries will have these books, or similar ones, in their collections

Australia. : Department of the Prime Minister and Cabinet. *Australia's climate change policy: our economy, our environment, our future.*
Barton, A.C.T. : Department of the Prime Minister and Cabinet, 2007. Also available electronically via the Internet. Address as at 21/9/07: http://www.pmc.gov.au/publications/climate_policy/docs/climate_policy_2007.pdf.

This report looks at the federal government's policy on reducing carbon emissions by developing key low emissions technologies, improving energy efficiency and supporting households and communities to reduce emissions.

Hussey, Karen and Dovers, Stephen. *Managing water for Australia: the social and institutional challenges*.
State Reference Library N333.91099/1
Collingwood, Vic.: CSIRO Publishing, c2007.

Managing Water for Australia explores the major challenges in achieving sustainable water management. Social sciences researchers and practitioners

discuss these issues drawing on current knowledge, exploring knowledge gaps in this area and looking toward opportunities for furthering water reform.

Flannery, Tim F. *An explorer's notebook: essays on life, history and climate.*
Melbourne, Vic.: The Text Publishing Company, 2007.

An Explorer's Notebook is a selection of Tim Flannery's essays and articles written over the last 25 years. The essays cover issues such as population, water and the stresses we have put on our environment.

Manuel, Mark; McElroy, Barrie; Smith, Roger. *Coastal conflicts*
State Reference Library ***NQ333.9170994/47***
Published: Cambridge; Melbourne: Cambridge University Press, 1995.

Coastal conflicts is the first book in the Our Future Our World series and is written by three of Australia's most respected geography educators. They have promoted the study of geography as relevant to human survival on this planet. This series examines the process by which geographical issues are identified and solutions recommended. It shows students how to apply their geographic knowledge to problems influencing human and environmental harmony. The book is targeted at South Australian senior geography and Australian studies students but it will also be useful for the coastal geomorphology element of senior geography courses elsewhere.

Compiled by Healy, Rob and Douglas, Carole; edited, illustrated and designed by Douglas, Carole. *Towards a new Dreaming: - future directions for land management in Australia*
Mitchell Library ***Q333.7317/2***
State Reference Library ***NQ333.7317/1***
Published: Pyrmont, N.S.W.: Clean Up Australia Ltd, c1995.

Mulligan, Martin, Hill, Stuart. *Ecological pioneers: a social history of Australian ecological thought and action.*
Mitchell Library ***577.0994/ 1***
Published: Cambridge; Oakleigh, Vic.: Cambridge University Press, 2001.

As a continent of extreme, rare and complex environments, Australia has produced a startling group of ecological pioneers. Australian thinkers and innovators have made some truly original contributions to ecological thought. This study traces the emergence of ecological awareness in Australia. By constructing a social history with chapters focusing on different fields in the arts, sciences, politics and public life, Martin Mulligan and Stuart Hill are able to bring to life the work of significant individuals.

NSW Government, Department of Natural Resources. *Background to water management in the NSW Murray and Lower Murray-Darling river systems.*
Mitchell Library ***Q333.9162/ 108***
State Reference Library ***NQ333.9162/ 134***
Published Deniliquin, [N.S.W.]: Dept. Natural Resources, c2006.

Environment Australia. *Macquarie Island marine park: management plan.*
State Reference Library ***N333.9164/ 42***
Electronic version: http://www.ea.gov.au/coasts/mpa/macquarie/plan/index.html
Published Canberra : Environment Australia, c2001.

Databases from Home

www.sl.nsw.gov.au/databases/athome

This online service provides all NSW residents free access to thousands of online resources and full text articles relevant to HSC students. To gain access simply register for a readers card at the above address. Some examples of where students can find information on environmental issues include:

INFORMIT Online

'This resource provides online access to a wide range of Australian, Asia and Pacific research and information resources covering social sciences, education, law, criminology, film studies, health, medicine, accounting and economics, business, management, drug information, and sport.'

ProQuest 5000

'This resource includes a multidisciplinary collection of 19 separate databases indexing the contents of 7900 journals and the full text of articles from 3900 journals. The subject coverage is from the humanities to the pure and applied sciences, and the geographic coverage is international.'

Databases @ your Public Library

The following databases contain relevant information on environmental issues and are available at all public libraries in NSW.

MasterFILE Premier

'*MasterFILE Premier* is a multidisciplinary database that provides full text for more than 1730 general reference publications with full text information dating as far back as 1975. It includes nearly 500 full text reference books, 84 774 biographies, 100 554 primary source documents, and an Image Collection of 235 186 photos, maps and flags'.

ANZ Reference Centre

'*The Australia/NZ Reference Centre* combines Australasian magazines, newspapers, newswires and reference books to create the largest collection of regional full text content available to libraries in Oceania. This database includes leading Australia/NZ periodicals and international periodicals in full text; full text reference books; 84 774 full text biographies and an Image Collection of 235 186 photos, maps and flags'.

Science Reference Center

'*Science Reference Center* is a comprehensive research database that provides easy access to a multitude of full text science-oriented content. This database contains full text for nearly 640 science encyclopaedias, reference books, periodicals, etc. Topics covered include: biology, chemistry, earth & space science, environment science, health & medicine, history of science, life science, physics, science and society, science as inquiry, scientists, technology and wildlife'.

Website Link

http://www.edna.edu.au/edna/go/schooled/school_theme_pages/pid/1180

The above link is to Education Network Australia's (edna) theme pages for environmental issues. These pages present teachers and students with resources that discuss topical issues and are relevant to the high school curriculum.

Curriculum Links

SECONDARY 11-12		
Subject	Course	Content
Agriculture	Stage 6 8.1 Overview Preliminary Course	Students learn about: ▪ agricultural systems – the patterns of climate and soil resources that influence the distribution of agricultural enterprises – the impact of physical, biological, social, historical and economic factors on systems ▪ agricultural history – the changes in the Australian environment that have occurred since the arrival of Europeans ▪ . social aspects surrounding agriculture – the changing role of the family farm in Australian agriculture – the interaction between agriculture and Australian society.
	Stage 6 9.1 Plant/Animal Production HSC Course	Students learn about: ▪ sustainable agricultural production – the historical development of Australian land use practices, – the role of individual farmers, the broader community and government in reducing the harmful environmental effects of agriculture and in conserving water and protecting waterways – the tension between sustainability and short-term profitability in farming systems
	Stage 6 – Elective 6 Sustainable Land and Resource Management HSC Course	Students learn to: ▪ processes in agricultural systems by: – discussing the issues related to water quality, supply and regulation – examining the causes of the following types of soil degradation: soil erosion, dry land salinity, irrigation salinity, soil acidification and soil structure decline (with special reference to those arising from farming practices)

SECONDARY 11-12		
Subject	Course	Content
Senior Science	Stage 6 8.2 Water for Living Preliminary Course	Students learn to: ▪ outline types of surface and ground waters in the hydrological cycle such as: – bore water – artesian water – the water table – dams – rivers – lakes – wetlands – cave environments ▪ discuss the effects of water pollution and ground salinity on the continued supply of fresh water to living things and provide examples of these occurring in Australian environments ▪ identify possible solutions to environmental problems associated with the use of ground water
	Stage 6 8.5 Local Environment Preliminary Course	Students learn to: ▪ describe the effects of a range of human impacts on the local environment ▪ identify features of the local environment which may vary in importance for different groups in the local society ▪ discuss views that different groups in the local society have on human impact on the local environment

SECONDARY 11-12		
Subject	Course	Content
Earth and Environmental Science	Stage 6 8.3 The Local Environment Preliminary Course	Students learn to: ▪ summarise and assess the changes in the local environment in the last fifty years in terms of: – vegetation cover and diversity – animal diversity and abundance – water flow and quality ▪ explain why different groups in the local society have different views of the impact of human activity on the local environment ▪ assess the impact of human alterations to the environment, including land clearing, in terms of some specific consequences, such as increased runoff, increased soil erosion, changes in river flows, in stream sedimentation ▪ describe, using examples from the local environment if possible, ways in which artificial structures can disrupt natural surface processes ▪ explain how habitat disturbance from soil degradation can advantage introduced species of plants and lead to the reduction or elimination of native flora and fauna species in affected areas
	Stage 6 8.4 Water Issues Preliminary Course	Students learn to: ▪ discuss methods used to conserve water including the re-use of water after treatment ▪ assess efficiency of water usage both locally and in Australia ▪ outline problems that may occur in ground water systems, such as pollution, salt water intrusion and ground salinity, and give examples of these problems occurring in Australian environments
	Stage 6 9.4 Caring for the Country HSC Course	Students learn to: ▪ describe the low fertility of most Australian soils in terms of: – long period of depletion of nutrient ions – stability of the Australian continent – the low relief of the Australian continent