



ENVIRONMENTAL EDUCATION RESOURCE

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ENVIRONMENTAL EDUCATION RESOURCE

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ENVIRONMENTAL EDUCATION RESOURCE

Introduction

The Environmental Education Resource for Gippsland has been funded by the State Government. It aims to lay the basis for the generational change needed to sustain long-term actions that address the health of Gippsland's catchments. Environmental literacy is a key skill for students of today to become sustainable citizens of the 21st century.

Waterwatch is a national education and community-based monitoring network that aims to develop active participation of schools, community groups and individuals in understanding and protecting our rivers, streams, lakes, wetlands and estuaries.

Waterwatch runs a comprehensive schools education program and special events to raise awareness of local waterways issues.

Waterwatch in Gippsland has been operating since 1993 and has evolved as a key educator on water quality and related environmental issues.

The main focus throughout the development of this resource has been to highlight local and topical issues across East and West Gippsland. It is hoped teachers will embrace teaching within a local context after becoming familiar with local environmental issues. Information sheets can also be utilised for students studying environmental issues at senior secondary level.

A holistic approach to catchment management throughout the resource gives students and teachers an understanding of the concept 'Connecting Catchments to the Coast'.

Sustainable human behaviour within our catchments will impact upon the long-term health of Gippsland; environmentally, socially and economically. By identifying poor practices and current solutions learners will be empowered to actively participate in a sustainable future.

The resource utilises enquiry based learning through the steps:

- Tuning in
- Preparing to find out
- Finding out
- Sorting out
- Going further
- Reflecting

Integrated learning tables offer suggested examples of how to use the resource manual in developing units of work.

Victorian Essential Learning Standards (VELS)

A table to assist in integrating the resource into Domains in accordance with the Victorian Essential Learning Standards (VELS) is outlined on page 6 in this updated resource. This table was developed using information from the Victorian Curriculum and Assessment Authority (<http://vels.vcaa.vic.edu.au>, December 2005).

For further information on incorporating this manual and the Waterwatch Program into VELS, please contact Waterwatch in your region.



How to Use this Manual

The manual comprises of

VELS tables

- Linking student activities to the curriculum.

Series of theme posters

- Used to facilitate discussion about the topics within each theme.

Information Sheets

- Provide teacher background information on different topics within each theme.

Student Activities

- Found at the end of each theme. Each activity outlines the material required, the learning methodology and possible extension activities.

Student Activity Worksheets

- Some activities are accompanied by a worksheet, which can be photocopied for the class.

Glossary

- An explanation of technical words used within the resource.

The focus of the manual is on the Humanities and Science at Middle Years (5-8) but information and activities are suitable for use across a range of Domains and may be incorporated into integrated units. See the VELS Overview table on page 6 for more information.

The integrated learning tables below offer suggested examples of how to use this resource manual following the inquiry approach. For more examples of units of work please contact Waterwatch in your region.

SOSE PLANNING OUTLINE: GIPPSLANDS RESOURCES		
Inquiry approach	Questions	Activities
Tuning in	What is a resource?	Understanding Our Resources
Preparing to find out	Where have Gippslands resources come from?	Geological Timeline
Finding out	Where are the resources located?	Land Use Mapping
Sorting out	What happens when resources are not used properly?	Erosion on Bare Soil
Going further	Who decides where development will be located?	Community Decision Making Role Play
Reflection	What will happen if we don't use the resources sustainably?	Climate Research Project

SOSE PLANNING OUTLINE: FARMING IN GIPPSLAND		
Inquiry approach	Questions	Activities
Tuning in	How does farming impact on our catchment?	A Day in the Gippsland Lakes Catchment
Preparing to find out	How is our catchment connected to the lakes?	Make a Catchment Model
Finding out	What type of farming occurs in the catchment?	Land Use Mapping
Sorting out	What happens when we don't look after our catchments?	Our River A visit from Waterwatch facilitators
Going further	What can macroinvertebrates tell us about the health of our catchment?	Food Webs
Reflection	What do we know about our rivers and catchments?	Our River



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Introduction to Environmental Themes

The environmental themes utilised in this manual relate to all aspects of human interaction with the environment. Developing students' environmental literacy is instrumental in societies goals of sustainability and creating informed decision-makers for our future. Each theme can be studied independently in the classroom, or as part of an in depth study of the school's immediate environment.

Our Atmosphere and Climate

As energy consumption is the key impact on our atmosphere, there is a focus on renewable energy in this theme. The visual impacts of the generation of power in the Latrobe Valley is a constant reminder of our society's reliance on fossil fuels. The focus of this theme is the study of meteorology.

Information sheets provide background information on atmosphere, climate and weather and how it affects the Gippsland region.

Our Landscapes

Natural geological processes have built and shaped our landscapes. Sustainable land management is evolving with a greater understanding of how the land has degraded through historical land management practices. The focus of the landscape theme is the study of Earth Sciences.

Information Sheets are designed to increase teacher awareness of the geological features of Gippsland, and issues associated with human use of the environment.

Activities increase awareness of the processes that build our landscapes and the ramifications of non-sustainable management.

Our Biodiversity

Loss of Gippsland's biodiversity has been a by-product of settlement. Clearing for agriculture, industry and urbanisation has resulted in loss of individual species and ecosystems. The focus of the biodiversity theme is the study of ecology.

Information sheets provide awareness of our ecosystems and the processes that threaten biodiversity. Activities build on students' skills in scientific investigation and secondary research.

Our Coasts, Rivers and Lakes

Issues associated with the water quality of Gippsland's Coasts, Rivers and Lakes interact with all the themes as humans have impacted on the water cycle. The focus of this theme is the study of Aquatic Science, which crosses boundaries into Ecology, Geology, Human Geography, Biology and Chemistry.

Activities are based around Waterwatch programs, developing skills in understanding the importance of waterways and indicators of waterway health.

Our Heritage, Culture and Communities

The community we have today has a history of many cultures, traditional aboriginal settlement, pioneers and settlers who have endured 'harsh' environments to create a living. The focus of this theme is sociology; how goals, laws and traditions hold communities together.

Our Sustainable Development

Gippsland has a range of industries such as forestry, fisheries, mining and agriculture which have significantly contributed to the economy. Ecologically sustainable development is the goal of Gippslands land managers and government. The focus of this theme is sustainability.

Information sheets provide background on natural resource utilisation and the activities focus on building students understanding of the impacts of resource use on the environment.



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VELS Overview Table

Student Activity	Physical, Personal & Social Learning				Discipline-based Learning								Interdisciplinary Learning			
	HPE	ID	PL	CC	A	E	G	H	Ec	L	M	S	Com	DCT	ICT	Th
OUR ATMOSPHERE & CLIMATE																
Climate Research Project		•	•	•	•	•	•	•				•	•	•	•	•
Reading a Weather Map			•			•	•				•		•			•
Energy Sources		•		•		•	•		•			•	•	•		•
OUR LANDSCAPES																
Geological Timeline		•				•	•	•			•	•	•			•
How Caves are Made		•			•		•					•	•	•		•
Rock Detective		•										•	•			•
Erosion on Bare Soil		•					•				•	•	•	•		•
OUR BIODIVERSITY																
Biodiversity Study Field Trip	•	•		•			•				•	•	•			•
Ecosystem Research Project		•	•	•		•	•					•	•	•	•	•
Pest Research Project		•	•	•		•	•					•	•		•	•
Seed Raising Project		•									•	•	•			•
Macroinvertebrate Study	•	•		•			•				•	•	•			•
Food Webs CSF4		•										•	•			•
Food Webs CSF5		•	•									•	•			•
OUR COASTS, RIVERS & LAKES																
Make a Catchment Model		•		•	•		•				•	•	•	•		•
Mini Water Cycle		•										•	•	•		•
Our River	•	•		•		•	•				•	•	•		•	•
A Day in the Gippsland Lakes Catchment		•		•	•	•	•					•	•			•
Features of our Estuaries	•	•										•	•			•
Investigating Rock Pools	•	•										•	•			•
OUR HERITAGE, CULTURE & COMMUNITIES																
Our Heritage and Water		•		•		•	•	•					•		•	•
Community Decision Making		•		•	•	•	•		•				•			•
Indigenous History			•	•	•	•	•	•		•			•			•
Indigenous Word Scramble Worksheet			•			•	•			•			•			•
OUR HERITAGE, CULTURE & COMMUNITIES																
Understanding Our Resources		•		•		•	•	•	•			•	•			•
Land Use Mapping			•	•			•		•				•		•	•
Classroom Environmental Management Strategy	•	•	•	•		•	•		•		•	•	•	•	•	•
Solar Water Distiller		•		•					•		•	•	•	•		•

KEY

Physical, Personal & Social Learning		Discipline-based Learning		Interdisciplinary Learning	
HPE	Health & Physical Education	A	The Arts	Com	Communications
ID	Interpersonal Development	E	English	DCT	Design, Creativity & Technology
PL	Personal Learning	G	Geography	ICT	Information & Communication Technology
CC	Civics & Citizenship	H	History	Th	Thinking
		Ec	Economics		
		L	LOTE		
		M	Mathematics		
		S	Science		



VELS Table

ENVIRONMENTAL EDUCATION RESOURCE

Our Atmosphere and Climate	Our Landscapes	Our Biodiversity	Our Coasts, Rivers and Lakes	Our Heritage, Culture and Communities	Our Sustainable Development
SCIENCE LEVEL 4					
Science Knowledge and Understanding					
Climate Research Project	Geological Timeline		Mini Water Cycle		
Reading a Weathermap	How Caves are Made		Our River		
	Rock Detective		A Day in the Gippsland Lakes Catchment		
			Features of our Estuaries		
			Investigating Rock Pools		
Science at Work					
Climate Research Project	Erosion on Bare Soil	Pest Research Project	Mini Water Cycle		Classroom Environmental Management Strategy
		Seed Raising after Fire	Our River		Solar Water Distiller
		Macroinvertebrate Study	Features of our Estuaries		
		Food Webs Level 4	Investigating Rock Pools		
SCIENCE LEVEL 5					
Science Knowledge and Understanding					
Climate Research Project	Geological Timeline	Biodiversity Study Field Trip	Mini Water Cycle		
Energy Sources	How Caves are Made		Features of our Estuaries		
			Investigating Rock Pools		
Science at Work					
Climate Research Project	Erosion on Bare Soil	Biodiversity Study Field Trip	Our River		Solar Water Distiller
		Ecosystem Research Project	Features of our Estuaries		
		Pest Research Project	Investigating Rock Pools		
		Seed Raising after Fire			
		Macroinvertebrate Study			
		Food Webs Level 5			



VELS Table

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Our Atmosphere and Climate	Our Landscapes	Our Biodiversity	Our Coasts, Rivers and Lakes	Our Heritage, Culture and Communities	Our Sustainable Development
THE HUMANITIES - HISTORY LEVEL 4					
Historical Knowledge and Understanding					
				Our Heritage and Water	
				Indigenous History	
Historical Reasoning and Interpretation					
	Geological Timeline				Understanding our Resources
THE HUMANITIES - ECONOMICS LEVEL 4					
Economics Knowledge and Understanding					
					Understanding our Resources
					Classroom Environmental Management Strategy
					Land Use Mapping
Economic Reasoning and Interpretation					
Energy Sources				Community Decision Making	Classroom Environmental Management Strategy
THE HUMANITIES - ECONOMICS LEVEL 5					
Economics Knowledge and Understanding					
Energy Sources					Understanding our Resources
					Classroom Environmental Management Strategy
					Land Use Mapping
Economic Reasoning and Interpretation					
Energy Sources				Community Decision Making	Classroom Environmental Management Strategy



VELS Table

ENVIRONMENTAL EDUCATION RESOURCE

Our Atmosphere and Climate	Our Landscapes	Our Biodiversity	Our Coasts, Rivers and Lakes	Our Heritage, Culture and Communities	Our Sustainable Development
THE HUMANITIES - GEOGRAPHY LEVEL 4					
Geographical Knowledge and Understanding					
Climate Research Project	Erosion on Bare Soil	Ecosystem Research Project	Make a Catchment Model	Our Heritage and Water	
Reading a Weathermap		Pest Research Project	Our River	Community Decision Making	
		Seed Raising after Fire	A Day in the Gippsland Lakes Catchment		
			Features of our Estuaries		
Geospatial Skills					
Climate Research Project			Make a Catchment Model	Our Heritage and Water	
Reading a Weathermap			Our River		
			Features of our Estuaries		
THE HUMANITIES - GEOGRAPHY LEVEL 5					
Geographical Knowledge and Understanding					
Climate Research Project	Erosion on Bare Soil	Biodiversity Study Field Trip	Make a Catchment Model	Our Heritage and Water	
Reading a Weathermap		Ecosystem Research Project	Our River	Community Decision Making	
Energy Sources		Pest Research Project	A Day in the Gippsland Lakes Catchment		
		Seed Raising after Fire	Features of our Estuaries		
Geospatial Skills					
Climate Research Project		Biodiversity Study Field Trip	Make a Catchment Model	Our Heritage and Water	
Reading a Weathermap			Our River		
			Features of our Estuaries		



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Occupational Health & Safety

Risk assessment and risk minimisation is now part of everyday life. In outdoor-based teaching and learning activities, the process of risk assessment allows for planning, safety and maximising the success of excursions.

School based requirements

The Victorian Department of Education and Training outlines the requirements of teachers on school based excursions. Procedures including parents consent forms, notification of the activity etc. are all part of teacher employment requirements. Teachers should seek advice from principals.

Useful planning tips for field trips

Waterwatch officers also have their own safety concerns for participants on Waterwatch activities. These may be useful when planning a Waterwatch field activity.

Understand the risks

Teachers should follow standard school procedures and obtain signed parental permission for each student along with a list of special needs or known allergies that the student may have.

Choose safe sites

Don't be content to select sites from a desktop map survey only. Choose sites that have safe and easy access to the water's edge and avoid sites that have steep, slippery or unstable banks, or are adjacent to deep, swiftly flowing water.

Wear appropriate clothing

Be prepared. If it looks like heavy rain call it off. If it's cold and could rain, wear warm clothing, a raincoat and sturdy waterproof shoes. If it's sunny, wear a hat and apply sunscreen. If the site is heavily vegetated wear long pants, and a long sleeved shirt to avoid scratches.

When entering shallow waters for the macro invertebrate tests, make sure you wear waders, boots, or old sneakers with a good grip. Don't risk injury by going barefoot, you may cut your feet on sticks or broken glass.

Bring extra clothes and a towel in case someone slips in and gets wet.

Bring safety gear and a first aid kit

Rubber gloves are essential if anyone has an open or bandaged wound. They are also necessary when handling chemicals or polluted water.

Group leaders should bring a fully stocked first aid kit to the sampling site.

Maintain contact with help

If you have no access to a mobile phone, let every one know where the nearest phone is located.

Never go into the water above your knees

All sampling is done from the water's edge except for the macroinvertebrate tests, which are conducted in shallow riffles less than knee deep.

When conducting the macroinvertebrate tests, use the handle of your monitoring net to probe the water in front of you for rocks or deep holes. Use a pole sampler to avoid getting too close to the water's edge.

Avoid contact with polluted water

Carry drinking water with you. When sampling in urban areas, do not put your hands near your mouth, or eat or drink while testing the water.

Bring hand-washing supplies, and make sure you use them after monitoring. This is especially important if the field trip involves a picnic lunch, barbecue or snack.

Take proper care when carrying out chemical tests

Be sure to read through testing procedures and safety instructions before conducting tests.

Take care when handling chemicals. Always use the safety equipment provided, e.g. gloves and safety glasses to avoid potential risk.

Do not dispose of used chemicals by dumping on the ground or in the waterway! Bring a container with a tight fitting lid so that wastes can be returned to a laboratory for proper disposal.

References

Victorian Government Schools Reference Guide

www.eduweb.vic.gov.au/referenceguide

Department of Education and Training employees can access the guide using their EduMail user name and password.

Australian Waterwatch Safety Guidelines

www.waterwatch.org.au/library/safety.html



ENVIRONMENTAL EDUCATION RESOURCE

Glossary

Abiotic

non-living parts of ecosystems such as rocks or nutrients.

Aerobic

organisms and processes that require free oxygen.

Agro-Forestry

a farming system that integrates the production of trees on farmland and diversifies farm incomes and systems.

Algae(pl),

alga refers to several groups of simple photosynthetic plants, mostly microscopic, lacking roots, stems and leaves.

Algal bloom

excessive growth of algae in a body of water. Usually a result of increased nutrient content, often from excessive use of fertilisers and detergents.

Alluvium

an extensive stream-laid deposit of unconsolidated material, typically on floodplains. Alluvium includes; gravel, sand, silt and clay.

Anabranch

a secondary channel of a river adjacent to the main channel, that flows only when river levels are high.

Aquifer

a layer of porous rock or soil that both holds water and allows this water to percolate through.

Artesian

water rising to the surface due to internal hydrostatic pressure.

Atmosphere

the mass of air surrounding the earth.

Bagasse

the dry, fibrous residue remaining after the extraction of juice from the crushed stalks of sugar cane.

Bank

the steep part of a stream or river channel usually above the water level.

Barrier

a long narrow sandy island running parallel to the shore.

Basin

an area drained by a given river and its tributaries.

Basin (geology)

a sunken or depressed geological formation.

Billabong

an old river meander that has become isolated from the main channel to form a pondage.

Biogeochemical cycle

the cycling of nutrients through the abiotic and biotic components of global ecosystems.

Biomass

the amount of living material, both plant and animal, existing at a given instant of time in an area.

Bio-region

large areas of land characterised by similar physical landscapes, e.g. Gippsland plains.

Biosphere

the regions of the earth's surface and atmosphere where living organisms exist.

Biotic

living components of an ecosystem e.g. organisms.

Brackish

water that is slightly salty, as found in estuarine conditions.

By-law

a law made by a local municipality to be enforced only within that shire or council area.

CMA

Catchment Management Authority.

Carnivore

an animal that feeds on other animals.

Catchment

the area of land that is drained by a river and its tributaries.

Community

a group of interdependent organisms occupying a particular habitat.

Conductivity

a measure of total soluble salts in water.

Cunjevoi

the Cunjevoi is a sea squirt found around the edge of the low-tide mark that often forms mats over the rocks.

Decomposition

the breakdown of organic materials by micro-organisms.

Deposition

the process by which sediments are laid down, often by water.

Discharge zone

an area where the groundwater reaches the surface and escapes through natural springs, evaporation, transpiration and surface drainage.

Dissolved oxygen

the amount of oxygen dissolved in water.

DNA (deoxyribonucleic acid)

Nucleotides responsible for the transmission of genetic information.

DSE

Department of Sustainability and Environment.

Dune blowout

the erosion of a coastal dune usually due to vegetation removal.

Ecological processes

natural processes that occur due to the interdependence of organisms in an ecosystem, e.g. energy transfer.

Ecosystem

a system involving the interactions between the living organisms and their environment.

EGCMA

East Gippsland Catchment Management Authority.

El Nino Southern Oscillation

an intense El Nino event that occurs every few years and leads to drought in South-Eastern Australia.

EMS (Environmental Management Systems)

a systematic approach to managing the environmental impacts of a land use activity.

Environmental flow

the amount of water in a river system needed to maintain natural ecological processes.

Erosion

the wearing away of the land by running water, rainfall, wind or ice. It includes processes such as detachment, suspension, transportation, and mass movement.

Estuary

an open drainage depression adjacent to the sea, typically at the mouth of a river which is subject to tidal influences.

Eutrophication

the accumulation of excessively high levels of naturally occurring nutrients.

Evaporation

the process that changes the physical state of water from a liquid to a gas.

Evapotranspiration

the process of living plants transforming water into vapour, which is evaporated from their foliage and released into the atmosphere.

Fauna

all the animals of a certain area.

Feral animal

a domesticated animal that now exists in the wild, e.g. goat.



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Fertiliser

any substance, natural or manufactured, added to the soil to supply essential plant nutrients for plant growth.

Fire regime

the frequency and intensity of fires in a particular area.

Floodplain

the land area, adjacent to a river, covered by water during a major flood.

Flora

all the plants of a certain area.

Fluvial

pertaining to a river.

Food chain

the sequence of organisms, existing in any natural ecosystem, through which energy is transferred.

GCB

Gippsland Coastal Board.

Geology

the study of the earth's history as recorded in rocks.

Geomorphology

the branch of geology that studies the characteristics of land forms.

GRIS

Gippsland Region Information Service.

Glaciation

the environmental condition that occurs when land is covered by masses of ice.

Greenhouse Effect

warming that results when the atmosphere traps solar radiation. This is caused by atmospheric gases that allow sunshine to pass through but absorb heat that is radiated back from the warmed surface of the earth.

Groundwater

water stored beneath the surface of the land.

Habitat

the preferred location for species of plants and animals to live and reproduce.

Hardwood

timber produced for non-conifer species e.g. Eucalyptus species.

Herbaceous

non-woody plants.

Herbivore

an animal that feeds solely on plant matter.

High pressure system

an air mass that rotates in a clockwise direction.

Humus

decomposed organic material found in soil. It is a store of nutrients and helps the soil to retain water.

Hydrosphere

all the water on the earth's surface including water vapour and ice.

Igneous intrusion

the geological process of emplacing magma into the base rock of a landmass.

Infiltration

the movement of water through the pores of soil or bedrock.

Land degradation

the decline in quality of land resources commonly caused through improper use by humans.

Latitude

an imaginary line around the earth parallel to the equator that is used in map making and navigation.

Leaching

the process by which water percolates through the soil and dissolves and then carries away substances such as nutrients.

LEFCOL

Lakes Entrance Fisherman's Co-Operative Society Limited.

Lithosphere

the part of the earth that includes the crust and upper mantle including rocks and soil.

Littoral

relating to the shore of a lake or the sea.

Low pressure system

an air mass that travels in an anti-clockwise direction.

Macro-invertebrate

animals without a backbone and visible to the naked eye.

Mean annual flow

the average of the annual flow observed in a particular river.

Meander

the curves in the course of a river that continually swings from side to side in wide loops, as it progresses across flat country.

Micro-organisms

either plant or animal that cannot be seen by the naked human eye e.g. algae or bacteria.

Migratory bird

birds that utilise more than one continent to complete their life-cycle.

ML – Megalitres, one million litres

This is approximately the quantity contained in one Olympic-sized swimming pool.

Natural processes

a process that exists or is produced by nature e.g. Photosynthesis.

Natural resources

a resource that is available from our environment.

Nitrogen fixing

the conversion of atmospheric nitrogen to usable nitrogen undertaken by some organisms.

Nitrogen deficiency

a condition typically suffered by plants growing in impoverished soils that lead to slow growth and yellowing of foliage.

Nutrient

derived from living matter and including elements such as nitrogen and phosphorus. Nutrients are essential for plant growth but can be detrimental to aquatic ecosystems if present at high levels.

Nutrient load

the total amount of nutrients carried by a river or stream.

Omnivore

an animal that eats food of both animal and plant origin.

Organism

a living thing.

Percolation

the downward movement of water through soil or rocks.

Perennial vegetation

vegetation that completes its life cycle over many years.

Permeability

the ease with which water flows through a soil or rock.

Pesticide

any chemical or biological agent that kills a plant or animal pest e.g. herbicides and insecticides.

Phytoplankton

free-floating microscopic plants that live suspended in a body of water.

Pollutant

waste material that contaminates the water, air or soil.

Precipitation

the quantity of water falling to earth at a specific place within a specified period of time. It can be water, ice, snow or condensation.



ENVIRONMENTAL EDUCATION RESOURCE

Predation

the act of preying by a predator, who then kills and eats the prey.

Predator

an animal that consumes living animal tissue; the predator is generally larger than the prey.

Recharge zone

an area of land where the groundwater moves downward, and water infiltrates from the surface into the groundwater formations below.

Regenerate

the recovery of an ecosystem after a disturbance such as fire or disease.

Riffle

a generally shallow section of river or stream with rapid, turbulent flow.

Riparian vegetation

the vegetation occurring in a river and the edge of its floodplain.

RNA

nucleotides found in the nucleus but mainly in the cytoplasm of a cell. It transmits genetic information from DNA to the cytoplasm and controls certain chemical processes in the cell.

Run-off

the portion of rainfall or irrigation water that flows over the land's surface and does not soak into the ground.

Salinity

concentration of salts, usually measured in parts per million.

Scavenger

an animal that feeds on dead organic matter.

Secchi Disk

an instrument used to measure the clarity of the water.

Sediment

insoluble material suspended in water consisting of particles derived from rocks, soil and organic materials.

Sedimentation

the end point in the erosion process, with transported soil material being deposited in locations such as in a channel, along a fence line, on an area of low slope or in a gully, creek, river, sediment trap or dam.

Sediment load

the solid material that is transported by water.

Silt

fine particles of rock, soil or organic material suspended in water.

Snag

a dead tree or part of a tree that has fallen into a stream.

Softwood

timber derived from conifers, e.g. pinus species.

Soil

the unconsolidated mineral and organic material at the earth's surface developed by physical, chemical and biological processes such as the weathering of rock and the decay of vegetation.

Soil degradation

decline in soil quality, commonly caused through its improper use by humans. It includes physical, chemical and/or biological deterioration, e.g. loss of organic matter, decline in soil fertility, decline in structural condition, erosion, adverse changes in salinity, acidity or alkalinity.

Species diversity

the number of different species located in a given area.

Spit

a coastal feature formed from the tidal movement of river deposits on a shoreline.

Stack

a coastal feature formed by the differential erosion of rocks on a cliffed coastline.

Stratification

development of layers within a body of water where different conditions prevail, e.g. salinity, temperature, light and nutrients.

Stream bank

the portion of the stream that restricts lateral movement of water at normal water levels. The bank often has a gradient steeper than 45 degrees and exhibits a distinct break in slope from the stream bottom.

Subsidence

a gradual sinking of an area of land to a lower level in the landscape.

Suspended sediment

a sediment that is being transported by water or air while held in suspension.

Symbiotic

organisms, usually of different species, living together but not necessarily in a relationship beneficial to each.

Terrestrial

living or growing on land.

Threatening process

an activity, usually caused by humans, that impacts upon the ecological integrity of an area or species.

Tombolo

a sand spit that connects the mainland and an island and has a beach on each of its sides.

Topography

the shape of the land surface as depicted by the presence of hills, mountains or plains.

Toxic

being harmful, destructive or deadly to organisms.

Tributary

an inflow of water from a smaller stream or river into a larger one.

Turbidity

the cloudy appearance of water indicative of the amount of solids suspended in the water.

Vegetation

plants in general or the diversity of plant life in a given area.

VNPA

Victorian National Parks Association.

VPC

Victorian Plantations Corporation.

Water allocation

the agreed amount of water, diverted from a water body, to a particular user or use.

Waterlogged

condition of a soil saturated with water and lacking soil air exchange. The condition may be caused by excessive rainfall, poor soil drainage or excessive irrigation.

Watertable

the underground surface below which the ground is wholly saturated with water.

Weathering

the action of the elements on a rock that can alter its colour, texture, composition and shape.

Weed

a plant growing where it is not wanted.

WGCM

West Gippsland Catchment Management Authority.