

FIELDWORK: ENVIRONMENTAL CHANGE

Fieldwork: Investigating environmental change on the NSW South Coast

Chris Main Head Teacher Humanities,
Broughton Anglican College, 1991–2018

This field study was developed in response to the opportunities offered in the Environmental Change and Management topic within the Stage 5 syllabus.

The study is intended to be a summative activity, a chance for students to confirm, apply and display their understanding – although it could be moved earlier in the topic with some modification.

Fieldwork location

North Wollongong – Stuart Park/ Fairy Creek Lagoon/Puckeys Bush and Wollongong Harbour.

Figure 1 & 2: Site location



The selected sites offer, in close proximity, contrasting management challenges and responses;

- a bush regeneration location on the north bank of Fairy Creek
- a heavily modified park location on the opposite (south) bank
- These are the same environment, managed in distinctly different ways.
- an 'industrial' location at the harbour. If time is limited, the harbour can be omitted.

Breaking the group into three cohorts would help the interaction of students with each environment.

There are opportunities to integrate each outcome listed ... and, with adaption, the Life Skills outcomes: *GELS-2, GELS-3, GELS-4, GELS-5, GELS-7, GELS-8*. This adaption is not included.

Stage 5 Outcomes

- explains processes and influences that form and transform places and environments **GE5-2**
- analyses the effect of interactions and connections between people, places and environments **GE5-3**
- accounts for perspectives of people and organisations on a range of geographical issues **GE5-4**
- assesses management strategies for places and environments for their sustainability **GE5-5**
- acquires and processes geographical information by selecting and using appropriate and relevant geographical tools for inquiry **GE5-7**
- communicates geographical information to a range of audiences using a variety of strategies **GE5-8**

Geography K–10 Syllabus p.p. 76, 77

The following Key Inquiry Questions can be addressed through this investigation.

- **How do environments function?**
- **How do people’s worldviews affect their attitudes to and use of environments?**
- **What are the causes and consequences of change in environments and how can this change be managed?**
- **Why is an understanding of environmental processes and interconnections essential for sustainable management of environments?**

There is only limited reference to First Nations in the sources available for these locations.

Pre fieldwork preparation

- Use Google Maps and Street View, or other GIS-type sources to familiarise students with the layouts of the localities. This can be tied to topographic map work.
- Pose some speculative questions about each location.
- Use websites such as these to gain insights into each location.
 - Wollongong Council – <https://ro.uow.edu.au/ihsbulletin/917/>
 - Wikipedia: Puckeys Estate Reserve – https://en.wikipedia.org/wiki/Puckeys_Estate_Reserve
 - Forgotten Illawarra – <https://forgottenillawarra.wordpress.com/2016/06/19/puckeys-estate/> accessed 5/12/2019
- Ensure students bring adequate protection from the elements and both food and water.
- The sandbar crossing must be inspected – and avoided if necessary.

Figure 3: Puckeys Bush



FIELDWORK: ENVIRONMENTAL CHANGE

Puckeys Bush

- Students can be dropped off safely on the eastern, southbound side of the road.
- Students should orient themselves and be challenged about the local environment.
- The **signage** is significant as indicators of management and environment.

Figure 5: Bushcare sign



Section 1

- This is in a riparian zone, marked by reeds, mangroves and casuarina species capable of tolerating wet feet.
 - There are invasive plants e.g. kikuyu.
 - The boardwalk is a management strategy in itself.
- The boundary of this zone is a clear change in vegetation.
 - Test students to see if they notice it before you tell them!

Section 2

- This is largely hind dune, marked by larger vegetation growing in relatively sheltered, but drier conditions.
 - The nature of erosion protection – and failure is notable.

Figure 4: Puckeys Bush



- Some plants are labelled, and again, the signage is particularly important in showing management.

Section 3

- The third section involves the dune association and the effects of salt and wind.
 - Effects of foot traffic should be considered.
 - Contrasts between the seaward and landward aspects.
- **If safe** students can cross the sandbar to Stuart Park.

Figure 6



Photographs. CRM

FIELDWORK: ENVIRONMENTAL CHANGE

Figure 7: Management.



Figure 8: Bitou bush



Photographs: Bitou eradication/control CRM

Stuart Park

This is part of the same catchment, but starkly different in appearance.

- This is a highly modified environment with the emphasis on public recreation.
 - Modified vegetation
 - Drainage
- Students might 'contest' – here or later – which bank is better managed.
- This is an opportunity to lunch and use facilities.
- This is also a convenient place to meet the bus.



Wollongong Harbour

- There are a number of historical markers in this area. These should give a sequent occupance of the area.
 - Transport/navigation
 - Military
 - Fishing
- Students should look at evidence of significant physical modification of the area such as vegetation modification, erosion control, rock walls and rock platform modification and
 - speculate on environmental issues arising
 - fitness for the activities in the area ... remnant fishing, recreation etc.
- This should be the 'lightest' of the three areas.

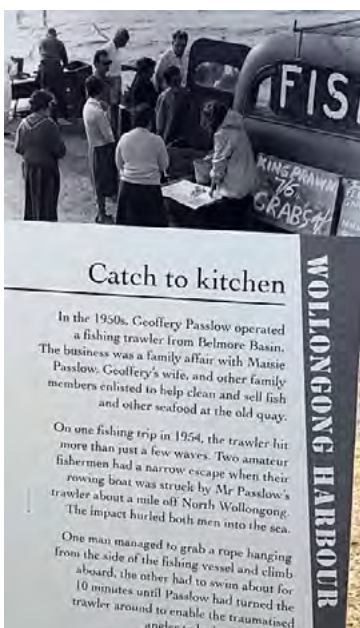


Figure 9 & 10: Information signage relating to historic sites within the precinct of Wollongong Harbour.

Year 10 Geography Field Study Environmental Change and Management

North Wollongong –
Stuart Park/Fairy Creek Lagoon/Puckeys Bush and Wollongong Harbour

Activities

You will conduct **two** surveys.

1. Stuart Park/Fairy Creek Lagoon including Puckeys Bush
2. Wollongong Harbour



Scale: approximately 33 000:1 (1 cm to 330 metres)

FIELDWORK: ENVIRONMENTAL CHANGE

Year 10 Geography Field Study

The following information is to help you complete the table on the next page

Stuart Park/Fairy Creek and Puckeys Bush

You are to complete:

- Field mapping of the site
- Identify the
 - Underlying environments
 - Modifications to environments
 - Describe and assess the management strategies for these two environments

When you alight from the bus

1. Locate where you are on the topographic and mark it on the map
2. Look around you and record elements that might influence the environment between you and the beach.

	EXAMPLE 1	EXAMPLE 2	EXAMPLE 3
Atmosphere <ul style="list-style-type: none">– Sources of wind– Air pollution?			
Lithosphere <ul style="list-style-type: none">– Soil types– Slope of the land			
Biosphere <ul style="list-style-type: none">– People and houses?– Vegetation ... lots or little?			
Hydrosphere <ul style="list-style-type: none">– Are the sources of water pristine?			

FIELDWORK: ENVIRONMENTAL CHANGE

Year 10 Geography Field Study

Near the bridge is the entry to a path to the beach.

You will walk this path, observe and record on the next page.

- The nature of the landform: is it elevated, flat, steep ...?
- The nature of the vegetation ... with you around I doubt you will see much wildlife!
- Indications of influences on the environment: including who is responsible... look at the symbols on the signs.
- The signs recording changes and management strategies

The lagoon separates two visually distinctive areas.

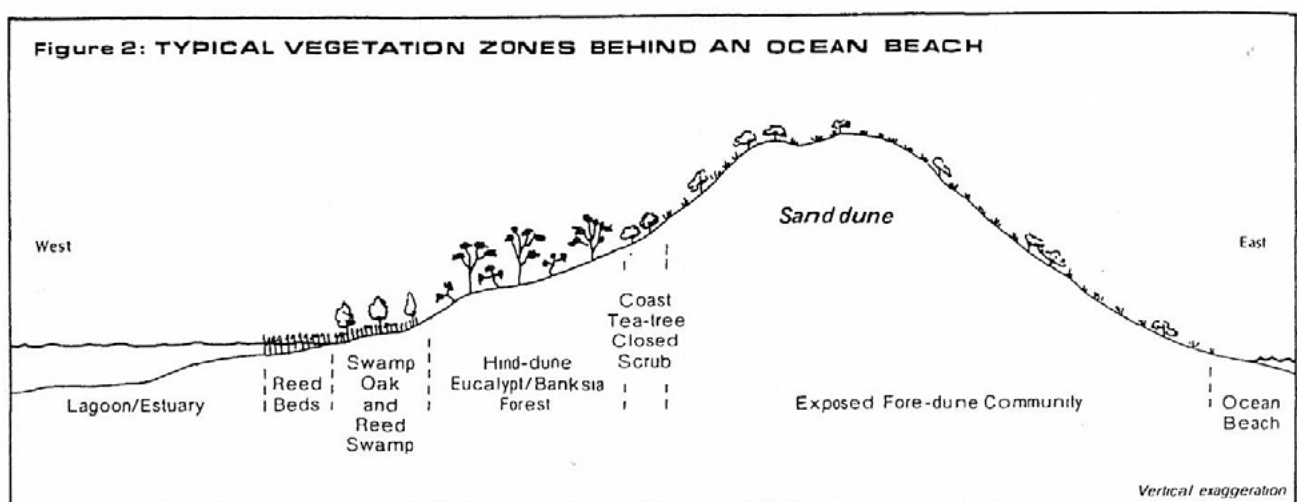
North of the lagoon is a comparatively 'natural' area;

- She-oak and eucalypt forests
- Heath vegetation behind fore dunes
- Grassy vegetation near the beach, with foot traffic damage and fencing, removal of weeds such as
 - * bitou and lantana
 - * and invasion of grasses.
 - * There are also some prominent pines that are non-native.
- Mangroves

There is signage indicating restrictions, history (including indigenous) and community/government involvement, a boardwalk as management

South of the lagoon is a highly-modified environment; non-native major plants, grassed areas and facilities

This is a '**typical**' cross-section ... use it as a guide to compare what you see.



Mills, K, *The natural vegetation of the Wollongong area*, Wollongong

Studies in Geography No.13, Department of Geography, University of Wollongong, 1980

FIELDWORK: ENVIRONMENTAL CHANGE

As you walk down to the beach, pause and look around you ... and complete the table.

DISTANCE FROM START *	LANDFORM?	LAND USE?	STRATEGY?

* You can count your steps!

FIELDWORK: ENVIRONMENTAL CHANGE

Cross the bar towards Stuart Park *if the opening is clear of water.*

In Stuart Park, sit and **compare** the appearance of Stuart Park to Puckeys Bush.

Use these ideas to help organise your thoughts:

Place: the significance of places and what they are like

Space: the significance of location and spatial distribution, and ways people organise and manage spaces that we live in

Environment: the significance of the environment in human life, and the important interrelationships between humans and the environment

Interconnection: no object of geographical study can be viewed in isolation

Scale: the way that geographical phenomena and problems can be examined at different spatial levels

Sustainability: the capacity of the environment to continue to support our lives and the lives of other living creatures into the future

Change: explaining geographical phenomena by investigating how they have developed over time

LANDFORM?	LAND USE?	STRATEGY?

Create a sketch map or field sketch to:

- Describe the environment and
- Note the influences, strategies and comments on sustainability

	<p>Location: Aspect: Date: Creator:</p>
--	---

Wollongong Harbour

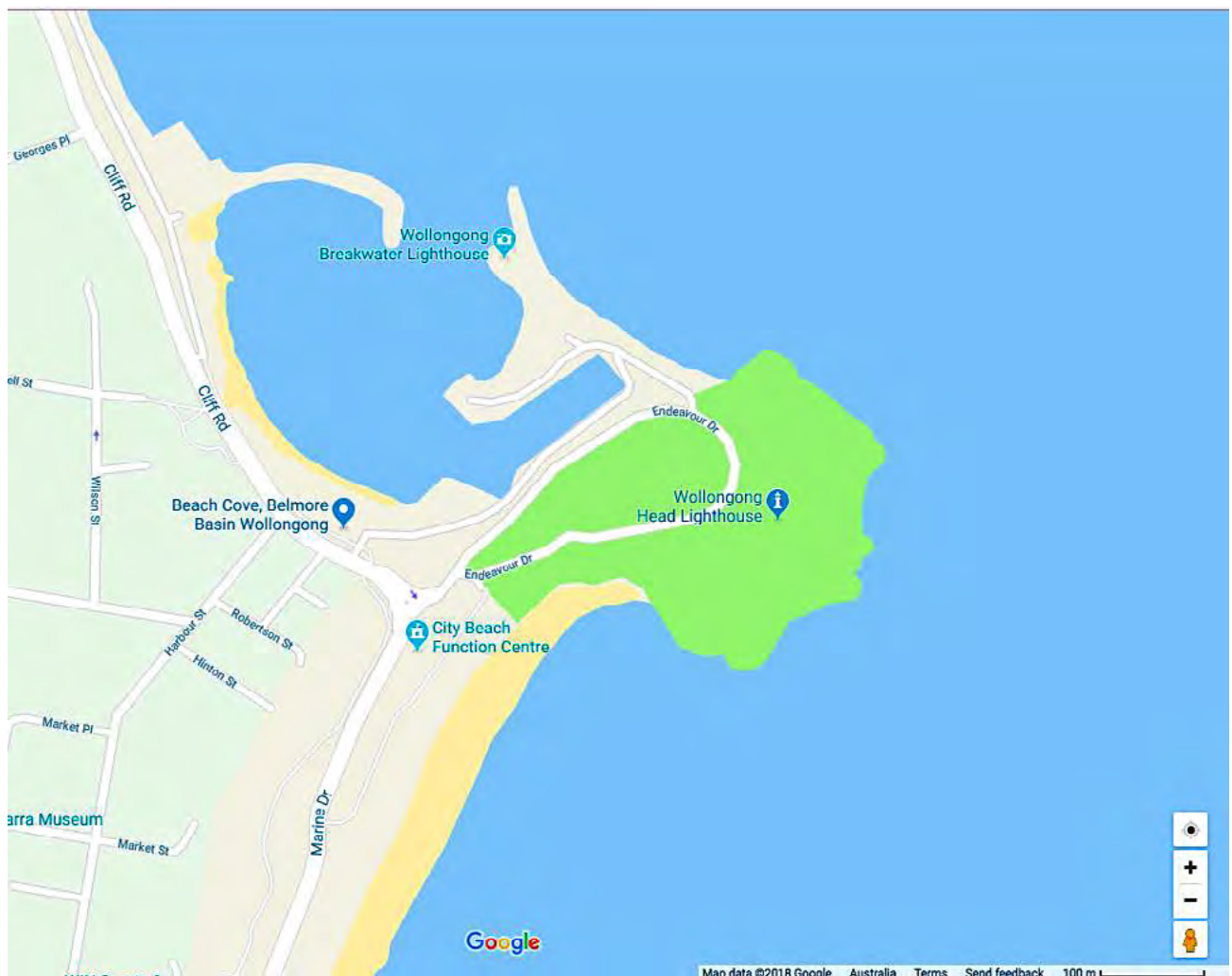
This is a highly modified environment where the proximity of urban areas, the creation of the basin and its maintenance require major interventions.

This is an area where the location itself has been reshaped

- Sea walls and moles added
- Fishing connections
- Extensive grassed areas with retaining walls and roads/drainage
- There are historical signs that are useful

On the map below, identify and record ...

- Where you are based
- The lighthouses
- At least three land uses in the immediate area
- Signs of human intervention
- A description of the vegetation



FIELDWORK: ENVIRONMENTAL CHANGE

In groups of up to four, with your teacher's knowledge, walk towards the harbour.

- There are a number of interpretive signs ... **read them**. Take photos or record what they tell you about this environment.
- There is evidence of **management** ... look for signs of pollution, maintenance, modifications and change.
- ... in particular

Return to your teacher

Remember; this is a public space and vehicles are around.

Do not approach the water's edge!

Record answers to the following questions:

How well does this environment function?

.....
.....
.....

How have people's worldviews affected their attitudes to and use of this environment?

.....
.....
.....

What are the causes and consequences of change in this environment?

.....
.....
.....

How are these managed?

.....
.....
.....

Why is understanding this environment essential for sustainable management?

.....
.....
.....

Has this understanding been achieved here?

.....
.....
.....