

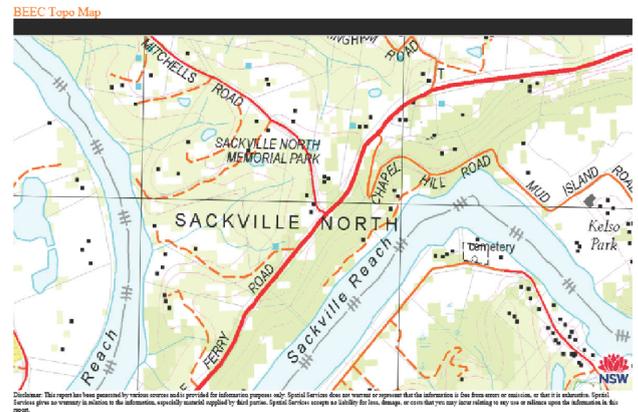
Factors That Shape Places

Sackville North

As urban Sydney sprawls in all directions, the North West is changing dramatically. This Geographical Inquiry will focus on the connections between people and nature at Brewongle Environmental Education Centre and its surrounds at Sackville North on the Hawkesbury River in North West Sydney.

Inquiry Questions:

- How does the natural environment influence people and places at Sackville North?
- How have people changed the natural environment at Sackville North and the local Hawkesbury River Catchment?
- How do bushfires shape the natural environment at impact where people live in Sackville North?



Health and Safety Issues

As you are working out in the field you need to be aware that:

- Ground material is often covered in moss and can be very slippery.
- Vines and dense undergrowth can trip.
- Fallen trees can be rotten and weak.
- Some animals can deliver painful or venomous bites.
- On slopes, rocks can be easily dislodged.

Outcomes

- GE3-1:** Describes the diverse features and characteristics of places and environments
- GE3-2:** Explains interactions and connections between people, places and environments
- GE3-3:** Compares and contrasts influences on the management of places and environments
- GE3-4:** Acquires, processes and communicates geographical information using geographical tools for inquiry

Student Name: _____

Inquiry Aim:

The aim of this Geographical Inquiry is to investigate the factors that shape places, with a focus on the connections between people and nature. You will be researching Sackville North in Northwest Sydney, using Brewongle EEC as a case study.

Pre-Visit Lesson One: The Study Site

SIX Maps has been developed by the NSW Department of Land and Property. It provides access to cadastral (land and property boundaries) and topographic (hills and valleys) information, satellite data and aerial photography. Use [SIX Maps](#) to complete the following tasks.

1. On SIX Maps, type in Sackville North.
2. Click on Basemaps (top right of page) and drag the tab down until you can see the Street and Suburb names.
3. Zoom out and fly around until you find your local Suburb.
4. Click on Basemaps and move the tab back up until you can see the satellite image.
5. Zoom out to a scale around 1:600 000 (you can see this in the bottom left of screen). Follow the Hawkesbury Nepean River upstream from the ocean to Warragamba Dam. By holding a piece of string to your computer screen, estimate the length of the Hawkesbury Nepean River.

Pre-Visit Lesson Two: Geographical Questions

Geographical questions are questions which help you identify the information you need to answer the inquiry questions. Your inquiry questions are written on Page 1.

Brainstorm: What are some geographical questions you might ask for this Inquiry?

Example: Why might people choose to live in a specific area or suburb?

Geographical Question 1: _____

Geographical Question 2: _____

Geographical Question 3: _____

Geographical Question 4: _____

Geographical Question 5: _____

Pre-Visit Lesson Three: Planning Your Inquiry

Answer the following questions for each of the Geographical Questions you came up with last lesson:

1. What information is needed to answer this geographical question and where can you find that information?

2. What are the geographical tools you need to access the information?

3. Develop a system for recording the information you get.

Fieldwork Activity One: Topography & Water Quality

You will walk from Sackville Ferry Road to the Hawkesbury River.

1. Create a tally of examples of stormwater erosion you saw:
2. Describe the examples of stormwater erosion you saw. Take photos if possible.

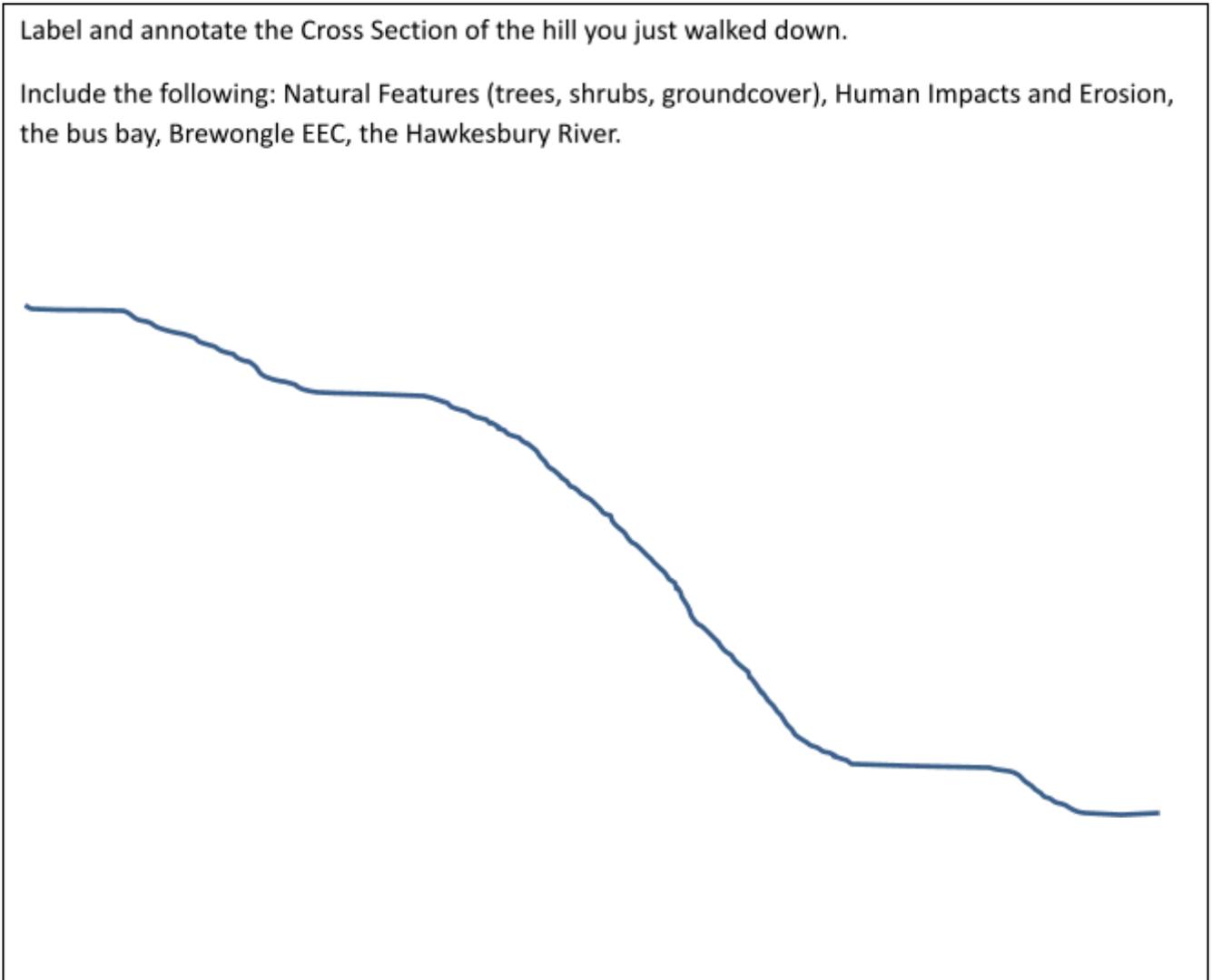
3. Were the examples of stormwater erosion mostly along the track or were they in the bush?

Hawkesbury River Water Quality

	Poor	Average	Healthy	Average	Result
pH level	0 – 3	3.5 – 5	6 - 8	9-10	
Salinity	>1000 ppm	>500 ppm	0-500 ppm		
Dissolved Oxygen	<2mg/L	2 - 4mg/L	5 – 10 mg/L	>12mg/L	
Turbidity	>100NTUs	50 - 100NTUs	<50NTUs		

Label and annotate the Cross Section of the hill you just walked down.

Include the following: Natural Features (trees, shrubs, groundcover), Human Impacts and Erosion, the bus bay, Brewongle EEC, the Hawkesbury River.



Activity One Summary: Topography and Water Quality

How does the environment influence people and places at Sackville North?

Fieldwork Activity Two: Habitat Assessment

Sound Map:

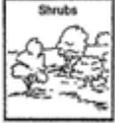
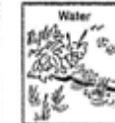


KEY



Habitat Assessment:

Tick the boxes that describe the area you are looking at.

Area	Habitat								
Bushland	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> none some lots

Score: _____

None = 0 Some = 1 Lots = 2

Add up the score you gave the habitat and use the Rating Chart to rate the habitat: _____

<p>Rating Chart 0 - 3 = Poor 4 - 6 = Fair 7 - 9 = Average 10 - 14 = Good 15 - 18 = Excellent</p>
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Activity Two Summary: Habitat Assessment

How might humans' impact and changed the site around Brewongle EEC, Sackville North and the local Hawkesbury River Catchment?

Fieldwork Activity Three: Vegetation & Bushfire

Create a Nature Map with leaves and other plant material to show the **layers** and **density** of two different sites. Take a **photo** of both Nature Maps and insert them later into your worksheet.



Site A – The Gully

Nature Map **PHOTO**:



Use your nature map and the results of the burn test to evaluate the moisture content and the density of the shrub layer at Site A. *Circle the box below that corresponds to your results.*

Fire Risk				
		Shrub Layer Density		
		<30%	30-70%	>70%
Moisture Content	Wet	MODERATE	MODERATE	HIGH
	Moist	MODERATE	HIGH	EXTREME
	Dry	HIGH	EXTREME	CATASTROPHIC

Site B – The Ridge

Nature Map: (insert photo back at school)



Use your nature map and the results of the burn test to evaluate the moisture content and the density of the shrub layer at Site A. *Circle the box below that corresponds to your results.*

		Fire Risk		
		Shrub Layer Density		
		<30%	30-70%	>70%
Mois ture Cont ent	Wet	MODERATE	MODERATE	HIGH
	Moist	MODERATE	HIGH	EXTREME
	Dry	HIGH	EXTREME	CATASTROPHIC

Activity Three Summary: Vegetation and Bushfires

How does bushfire risk change with topography? Would the Ridge or the Gully be a safer place to live?

Post-Visit Lesson One: Population Growth

Use legitimate websites to source secondary data and other statistical information about population growth in Northwest Sydney and the Greater Sydney Region. Evaluate and summarise the data and information into 5 key points.

Secondary data is data collected by someone other than you or for a purpose other than your research. Legitimate websites include the Australian Bureau of Statistics and State and Local Government.

1.

2.

3.

4.

5.

Develop and conduct a survey of community members about their thoughts on the impact of population increase on our nature reserves (positive and negative).

- Include impacts on people, plants, animals and the Hawkesbury River.
- Write 5-10 well-structured questions and practice doing the survey yourself.
- Your survey might use email or online networks, or in person (with an adult).
- You may survey people you know who live in the area or local businesses.
- Survey at least 3 people.

Post-Visit Lesson Two-Three: Processing the Data

Below is a list of Geographical Tools used to collate, review and evaluate data and information. Choose at least 5 of these tools to analyse and present your data in a Word Document.

The information you create here will be used in your documentary assessment task.

- Using a **topographic map** or **satellite image** as a base map, locate Brewongle and identify surrounding natural environmental features.
- Collate data from your in-depth study into a **table** to summarise your findings.
- Create **flowcharts** to demonstrate your understanding of the ways the environment influences people and places.
- Assemble and annotate **photographs** to provide a visual representation of the site. Analyse and label interconnections.
- Develop **consequences charts** to explain human impacts (positive and negative). Show the impacts on [Google Tour Builder](#). Use photos taken on the day to match parts of the tracks we walked.
- Use a **T-chart** to represent data on advantages and disadvantages of population increases in Northwest Sydney.
- Construct a **flow chart** or **concept map** to explain the role of government, and other major stakeholders in sustainably developing Northwest Sydney and protecting our nature reserves.
- Conduct a search for Brewongle EEC on the [Rural Fire Service Bushfire Prone Land Tool](#). Discuss how the results will change with seasons throughout the year.

Assessment Task:

Communicating Geographical Information

Work in small groups to develop a 5-6 minute documentary on the possible effects of population increase on our nature reserves using Sackville North as a case study. Your documentary should include:

- A clear description of the various land uses around Brewongle EEC and an evaluation of some of the consequences for the environment;
- Tools to support your information, such as maps, satellite images, graphs, statistics, flowcharts, labelled photographs, diagrams, illustrations/sketches and other labelled visual representations;
- Information on the traditional use of the place by Darug people;
- Information on the types of land use by early European settlers;
- A description of the role of government in organising or managing the place as well as the perspectives of other stakeholders, for example developers, conservationists, recreationists and local residents;
- An evaluation of the potential impact of bushfire on the local area;
- A description and justification of a course of action to decrease the impact of changes to the natural environment around Brewongle EEC.

Please refer to the [Stage 3](#) Geography page on the Brewongle website for extra resources, including a Storyboard Template and a “How To Guide for iMovies”.