Geography Teachers Association NSW & ACT

GEOGRAPHY BULLETIN

Volume 57 No2 2025

Large City case study: Shenzhen

Fieldwork: Learning Locally

School Gardens

En-ROADS climate change simulation

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Cover - School Gardens allow opportunities for students to explore Sustainable Biomes in a hands-on way.

The Geography Bulletin is a quarterly journal of The Geography Teachers' Association of NSW & ACT Inc. The 'Bulletin' embraces those natural and human phenomena which fashion the character of the Earth's surface. In addition to this it sees Geography as incorporating 'issues' which confront the discipline and its students. The Geography Bulletin is designed to serve teachers and students of Geography. The journal has a specific role in providing material to help meet the requirements of the Geography syllabuses. As an evolving journal the Geography Bulletin attempts to satisfy the requirements of a broad readership and in so doing improve its service to teachers. Those individuals wishing to contribute to the publication are directed to the 'Advice to contributors' at the back of this issue.

Editorial

Welcome to Edition 2 for 2025.

GTA NSW and ACT has been involved in a range of activities and events since our last edition to promote our subject and support students and teachers.

The HSC Lectures were released and have been very well received by teachers. Lorraine Chaffer organised amazing presenters from across NSW and the full range of topics were covered. As well as being important enrichment for students, these also provide a valuable source of professional learning for teachers.

Michael Da Roza and John Tasker accompanied a team of students to the International Geography Olympiad in Bangkok, Thailand, where the students were very successful – wining gold, silver and bronze medals.

Teachers are reminded to complete the Copyright Agency's questionnaire that has been emailed to you. This is an important source for recurring income for the GTA which can be used to fund the important work of the association.

We are always looking for teacher contributions to the Bulletin. We'd love to hear about out all the amazing things you are doing in your schools!

Louise Swanson

Councillor, GTA NSW & ACT
Geography Bulletin Editor

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Executive Officer's Report

By Diana Gearside Executive Officer. GTA NSW & ACT

Welcome to latest edition of the GTA NSW & ACT Bulletin for 2025. I hope you find it an edition that informs and inspires but also supports your practice in teaching Geography. I don't know about you, but it seems to me that the year is flying by at a startling rate of knots and I need to pause and reflect on what has been happening at the GTA so far in 2025.

HSC Lectures

Lorraine Chaffer, GTA Councillor and well known to most of you, has gathered a team of teacher experts to develop a package of lectures for classes and schools to assist students to maximise their HSC Geography results. These lectures include topics such as, Unpacking the HSC Exam, Tips for success, Writing strategies, Syllabus requirements for each topic, Skills in practice, Using your fieldwork data in the HSC exam, and more.

You can have a taste of these lectures here:
https://drive.google.com/drive/folders/1HI8dm6clVIROiBlU4PC2RkhaHeMB6GtR

Please visit the GTA website shop to purchase these lectures
https://www.gtanswact.org.au/product-category/hsc-lectures/

Also note that discounts available for very small schools/classes and there is a Professional Development Package for those teaching Year 12 HSC Geography in 2026.

More information available here:
https://www.gtanswact.org.au/hsc-lectures-2025-professional-learning-package-pre-approval/

Webinar Program

We are currently working on a series of Webinars which kicked off with a fascinating free webinar organised by vyatra pty ltd in late August. I hope some of you were able to experience the uniquely engaging, real-time journey to the Ganga for Stage 4 "Water in the World".

Our next webinar in the series is presented by Khya Brooks and Jade Cunningham and will explore practical strategies for differentiating learning both within and across classes. Participants will examine methods such as backwards mapping and designing activities that allow students of varying abilities to engage with the same content in ways that are accessible and promote individual growth. This session will provide a range of key pedagogical approaches, followed by specific examples of differentiated activities in practice for the planning and development of new syllabus teaching and learning programmes and resources. It is highly relevant for educators seeking to create inclusive and responsive learning environments. Participants will gain practical tools to enhance student engagement, ensure equitable access to learning, and integrate differentiation strategies into their own programmes.

Student Competition: iGEO International Geography Olympiad:

A huge congratulations to Michael Da Roza (GTA Vice President), John Tasker and their team of students at the International Geography Olympiad in Bangkok, Thailand. The team finished with a stellar result:

- Oliver Roxburgh NSW - Gold Medal
- Dylan Mathew VIC - Silver Medal
- Ben Bauer WA - Bronze Medal
- Dylan Phelps ACT - Bronze Medal

Additional to their individual achievements, the team was also placed third in the Poster Competition.

Student Competition: Young Geographer Award: Entries Open

The GTA NSW & ACT annual competition for students and schools aims to foster an enthusiasm for Geography through engagement and rewards. The Young Geographer Awards invites students in NSW and the ACT to demonstrate engagement with Geography, the discipline and with the tools and skills of Geography through the creation and conduct of an inquiry-based research project. Although it is not essential, teachers are encouraged to incorporate the research and construction of the project into their teaching programs to help support students. Entries close on 17 October 2025.

Teacher Recognition Awards: Brock Rowe Award: Entries Open

An award for excellence in teaching geography in schools, is granted jointly by the Councils of the Geography Teachers' Association of New South Wales & ACT Inc. (GTA NSW & ACT) and the Geographical Society of New South Wales Inc. (GS NSW), annually to persons who have demonstrated consistently, over a period, excellence in the teaching of geography in schools.

The nomination is made by a teaching colleague and requires the endorsement of the school principal (or school executive). Entries close on 31 October 2025.

The GTA councillors and staff continue to work on projects to support our members and coming shortly are resources to help with implementation of the new Stage 4 & 5 syllabus. The website is an ongoing work-in-progress, and we sincerely hope you are finding it more intuitive, functional and attractive. Regular newsletters with the latest updates are also part of the plan and you would have received information in your inbox about upcoming GTA events, the Copyright Agency questionnaire and Professional Teachers' Council International HSC Project, asking for teacher expressions of interest.

Please get in touch with any suggestions, questions and even complaints through our Contact Us page on the website. We are here to support our members and appreciate all communications!
https://www.gtanswact.org.au/contact-us/

Finally, please Save the Date for the Annual GTA conference 30 April–1 May 2026 with the venue and presenter details to come.

Vale Jeff Harte

It is with great sadness that GTA NSW & ACT shares the news of the passing of Jeff Harte. Jeff was the former President of the Association and Editor of the GTA Bulletin. We extend our deepest condolences to Jeff's family, friends, and colleagues.

Jeff was a highly respected and influential figure in Geography education. He was a recipient of the prestigious Brock Rowe Award, recognising his outstanding service and commitment to the teaching of Geography. His enduring contributions include widely used and much-loved resources such as The New Geography Dictionary, Essential Geography Skills for Middle Secondary, and Skills in Geography. These publications have shaped teaching practices and supported countless students in developing core geographical knowledge and skills.

Jeff's passion for the subject was evident in everything he did. He had a remarkable ability to bring Geography to life — whether through his integration of real-world images from his travels to Iceland or the World Heritage Dunes of Namibia into state-based examinations or through his constant search for engaging maps, graphs, and visual sources to inspire learning.

More than anything, Jeff will be remembered as an outstanding educator and advocate for Geography. His work has left a lasting legacy in classrooms and among colleagues, and he will be fondly remembered by the Geography education community.

Geography Teachers Association NSW & ACT

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BROCK ROWE AWARD 2025

The Brock Rowe Award, an award for excellence in teaching geography in schools, is granted jointly by the Councils of the Geography Teachers Association NSW & ACT and the Geographical Society of New South Wales Inc. annually to a teacher who has demonstrated consistently, over a period, excellence in the teaching of geography in schools.

The nomination is made by a teaching colleague and requires the endorsement of the school principal (or school executive).
Entries close on 31st October 2025.

If you have any questions about the Award or the nomination process please contact admin@gtanswact.org.au

Click here to apply

Learning locally: Developing Geography Excursions in your school's local suburb

By Christian Bell

Head of HSIE (History, Geography and Aboriginal Studies) at Christian Brothers' High School, Lewisham to the Association (OPSA)

At this year's GTA NSW & ACT Annual Conference, I shared my experiences of developing and running local geography excursions in Lewisham and Summer Hill, located in Sydney's Inner West.

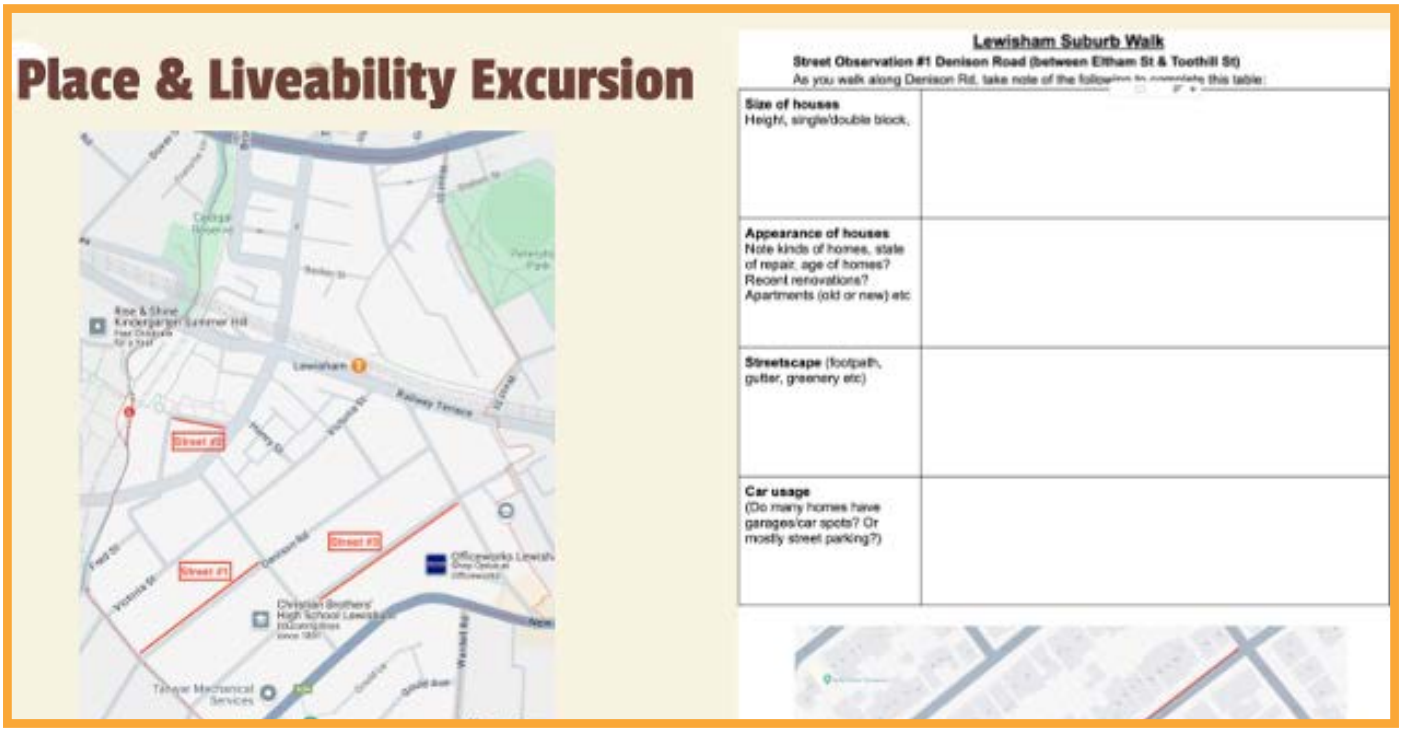
My colleagues and I at Christian Brothers' High School, Lewisham (CBHS) have worked hard in resourcing, developing and running these excursions and I am very grateful for their collaborative efforts. These excursions have become a cornerstone of our teaching practice, helping students engage directly with the urban environments they inhabit.

Designed in response to the increasing logistical and financial challenges of traditional fieldwork, these local excursions offer a cost-effective, curriculum-aligned alternative that fosters deeper understanding of urban processes while remaining accessible and adaptable. This article outlines two examples of local excursions, provides suggestions for adding more fieldwork techniques, and advice for how teachers can start planning and running their own local fieldwork excursions. Resources are available on Google Drive via the QR code at the end of this article.

Year 7 Place and Liveability Excursion

This excursion supports the Place and Liveability topic. The focus is on understanding why people choose to live in Lewisham and identifying the features that shape its liveability.

Students examine factors such as location (proximity to the CBD), transport infrastructure, housing diversity, heritage features, and public amenities.

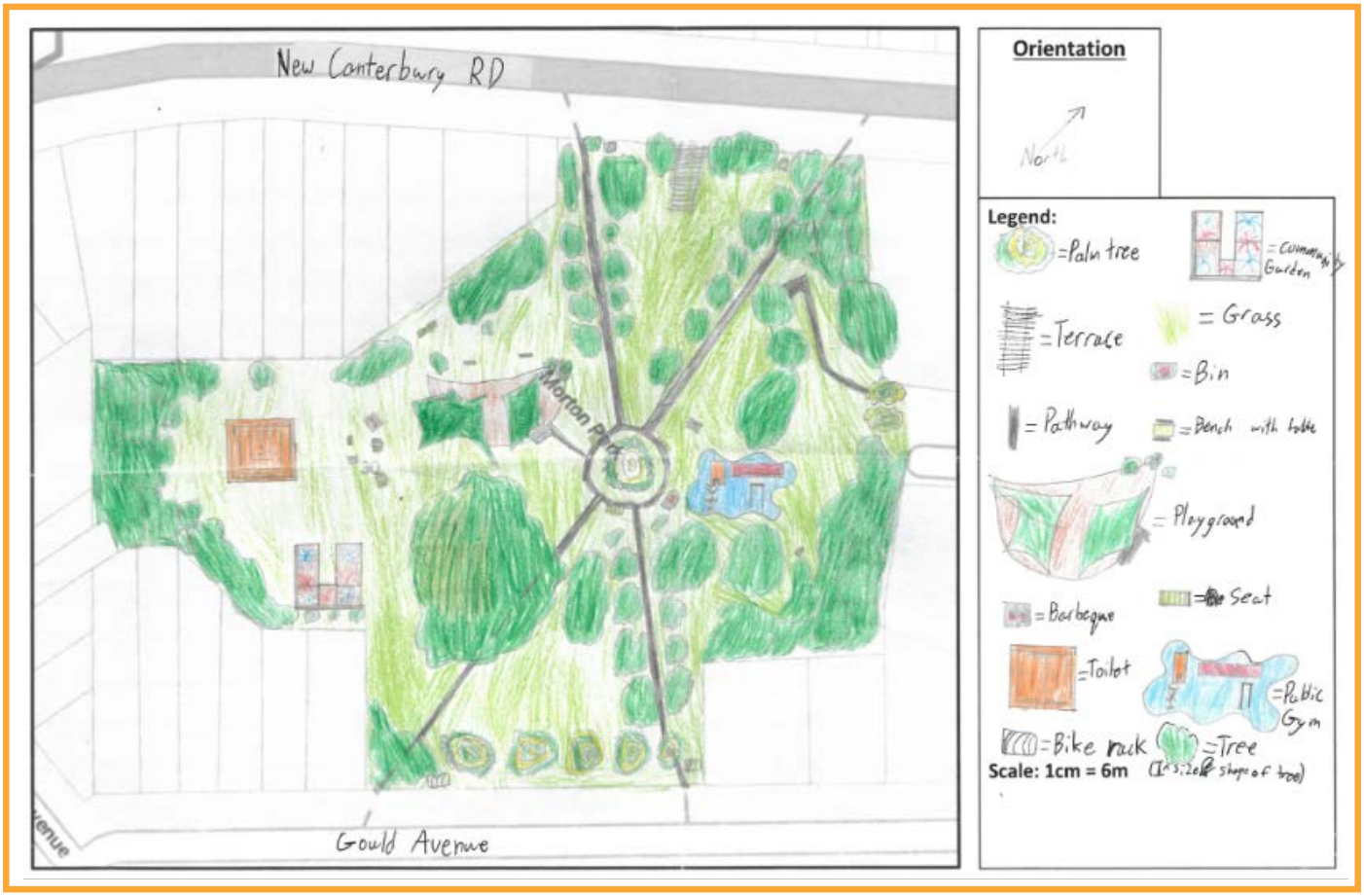


The excursion involves visiting 2–3 streets, including areas near the Lewisham West Light Rail stop with modern high-rise developments and streets with heritage homes.

Students complete observational surveys to assess liveability features.

Post-excursion activities include a comparative analysis of survey data collected across multiple classes.

This lesson sequence and excursion is an excellent focus for the summative assessment.



In 2024, this assessment task included:

- Part 1: A paired research presentation on the liveability of students' own suburbs.
- Part 2: An individual written response using the TEEL structure (Topic Sentence, Explanation, Example, Link to the question) to demonstrate understanding of liveability factors.

In 2025, the excursion focus shifted to a local park (visited during the excursion), allowing students to assess public and green spaces as part of their liveability study.

- Part 1: Students redesigned the park by mapping proposed improvements, incorporating features that enhance liveability.
- Part 2: In an examination setting, students responded to structured questions about the liveability of Lewisham, justifying their park redesign using demographic and spatial reasoning.

This revised approach was driven by teacher interest which encouraged spatial thinking, creativity, and critical analysis, and proved highly engaging for students.

Year 9 Changing Places Excursion

This second excursion focuses on urban change, aligning with parts of the topic such as settlement patterns and future urban development in Australia.

Students investigate how Lewisham has evolved from a blue-collar suburb with industrial roots to a site of urban renewal and consolidation.

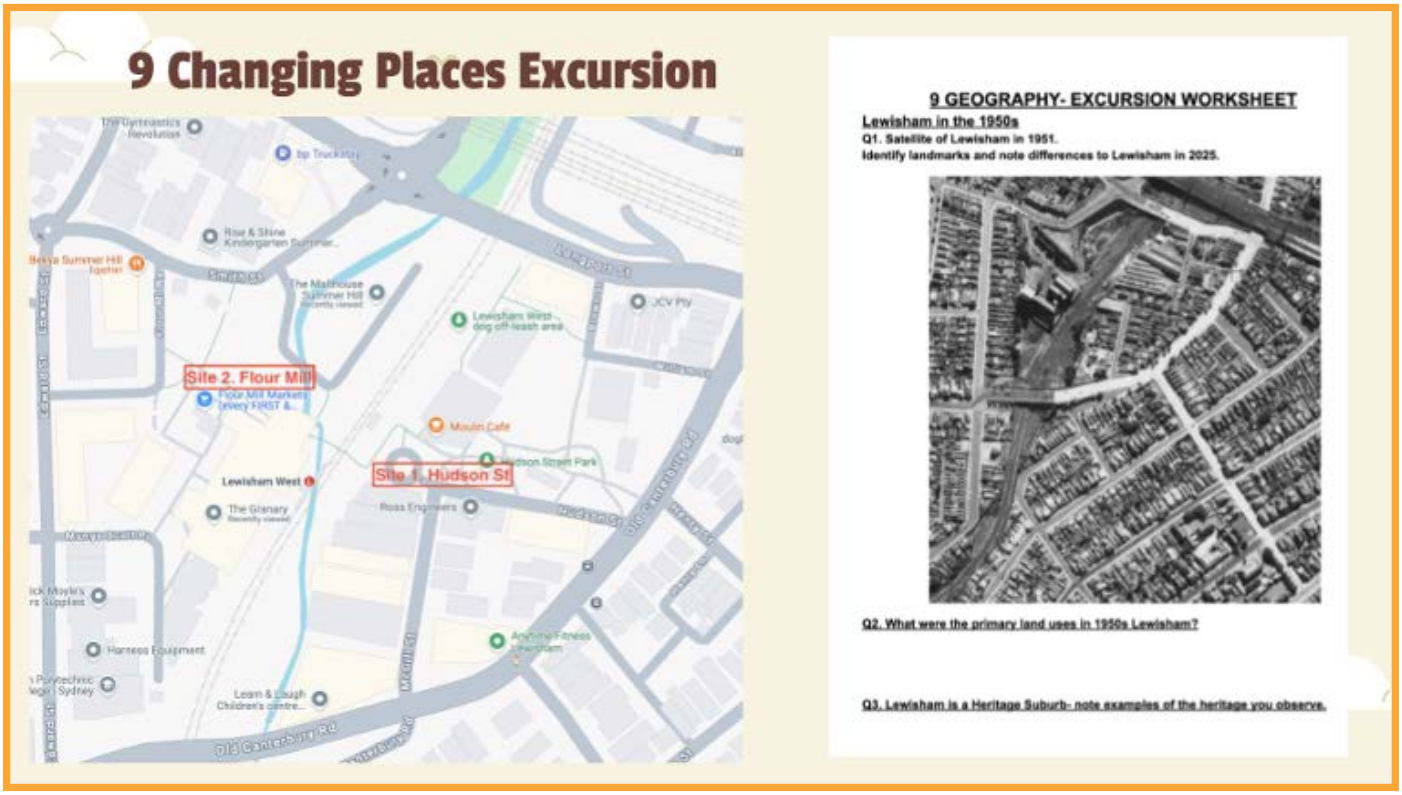
Key themes include:

- Economic restructuring and the decline of light industry.
- Rezoning and redevelopment following the introduction of the Light Rail.
- Gentrification and transport-oriented development.

Students visit both sides of the Lewisham West Light Rail stop to observe redevelopment impacts.

They are encouraged to catalogue the changes and discuss the effects, taking photographs to record the changes.

The excursion can be followed by a research task in which students examine a different Sydney suburb undergoing similar transformation, such as Crows Nest, and propose redevelopment strategies.



Enhancing Fieldwork with Practical Techniques

To deepen engagement, several fieldwork techniques can readily be incorporated into local fieldwork excursions, depending on time and equipment.

- Field Sketching: Students draw key features and land uses to reinforce spatial awareness.
- Noise Measurement: Using apps such as Sound Meter, students assess environmental impacts of urban development.
- Climate Data Collection: Tools like digital anemometers help students observe microclimatic variations caused by built structures.

These techniques are adaptable and can be scaled based on available resources and student needs.

*The noise level comparisons diagram is taken from https://www.transport.nsw.gov.au/system/files/media/documents/2023/berry-bombaderry-fact-sheet-managing-traffic-noise-from-new-and-upgraded-roads-2022-04.pdf

Developing Your Own Excursion: Strategies and Practical Considerations

For educators considering local excursions, starting small is a practical and effective approach. Start with a single class visit to one or two streets close to your school to have students observe and complete a liveability survey. Over time, these excursions can be refined and expanded based on student needs, curriculum goals, available resources and teacher ambition.

A useful strategy is identifying a "story of change" in your local area. In Lewisham, this narrative includes industrial decline, urban renewal, and ongoing consolidation. Framing your excursion around a local issue or transformation helps shape lesson sequences, focus questions, and post-excursion analysis. For example, the processes of gentrification and transport-oriented development in Lewisham provide a rich context for exploring urban change.

If you are unfamiliar with the history of your school's suburb –particularly if you do not live locally – there are several accessible sources to support your research:

- Colleagues with long-term experience in the area
- NSW State Heritage Inventory
- Trove (for historical newspapers and archives)
- Local council websites and planning documents
- Community Facebook groups and local libraries
- Spatial tools such as SIX Maps are also valuable, offering detailed cadastral data and enhancing students' understanding of urban form and variation.

Planning and Logistics

While educational outcomes are the primary focus, logistical planning is essential to ensure excursions are feasible and sustainable. Here are some key considerations when planning your excursion:

Accessibility: Is the site walkable or accessible via public transport?

- Duration: The two example excursions described here are usually conducted within a single 1-hour period, allowing them to fit within the school schedule with minimal impact.

- Staffing: Typically, two teachers accompany a class of 30 students.
Coordination with colleagues is essential to ensure coverage and supervision.

- Permissions: What is required by your school? For example, at my school walking excursions are covered by general enrolment permissions, eliminating the need for additional consent forms.

Additional planning should include:

- Completion of risk assessments and first aid planning (as required by your school)
- Adjustments for students with additional needs
- Communication with school administration regarding scheduling and supervision.

One of the key advantages of local excursions is their low cost and minimal disruption to the school day. Without the need for buses or external providers, these activities are rarely declined and can be implemented with relatively little administrative burden.

Local excursions offer a practical and impactful way to teach urban geography. They foster student engagement, support curriculum outcomes, and encourage critical thinking about the environments students inhabit.

Resources — including lesson plans, worksheets, and templates — are available via the QR code.

Educators are encouraged to adapt these materials to suit their own contexts.

Lectures for Class & School Packages

Class and School Packages

Available for teacher guided use with students until the HSC Examination – November 3.

Use the links and passwords provided to Vimeo and Google Drive on payment. Not to be used with 2026 cohort of Year 12 students.

Student Portal

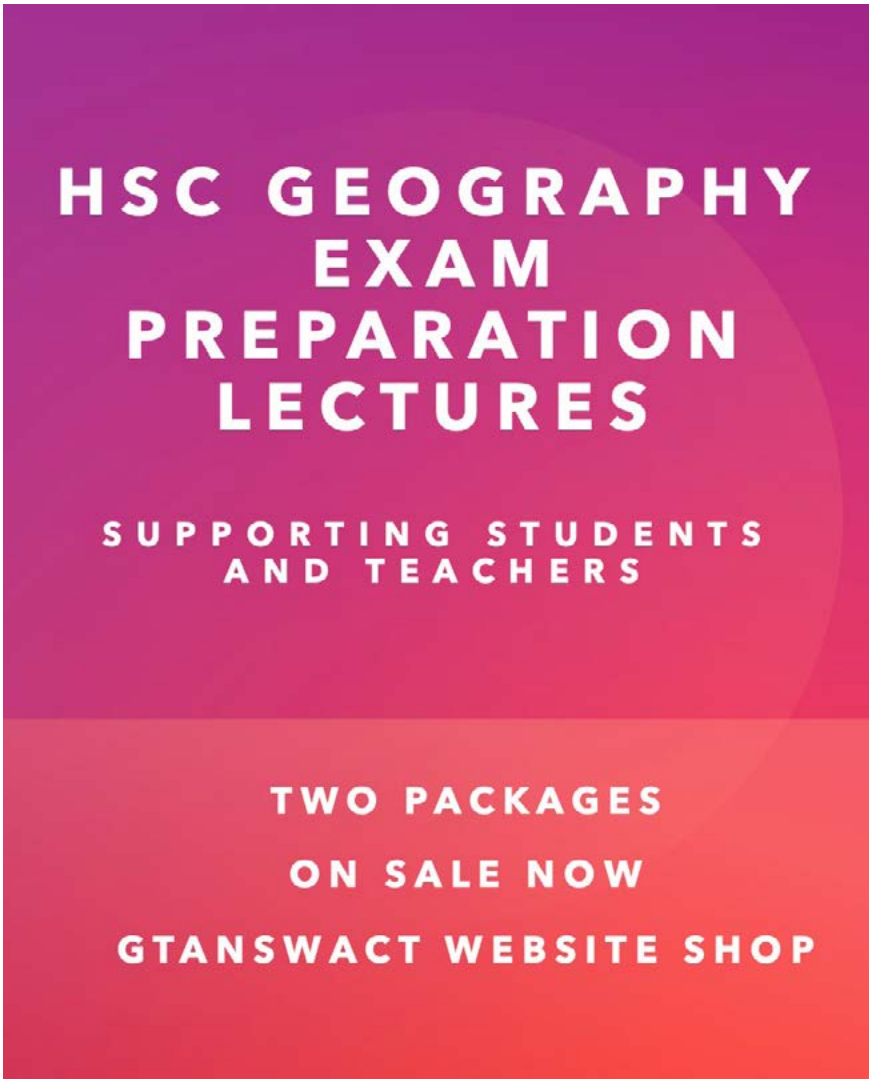
Available for independent viewing by students until the end of Term 3 school holidays – October 10. Use separate links and passwords provided in the Google Drive. Note: Teachers can continue to provide the selected content in tutorials after that time. No access to the Google Drive provided.

Professional Learning Package

Available until the end of Term 3 school holidays – October 10. Us the links and passwords provided on payment.

Preferred payment is by card through the shop= immediate access. Invoicing and processing purchase orders will delay access due to staffing constraints.

Small class discounts only apply to shop orders paid by card.



Geography Teachers Association NSW & ACT

HSC Geography Student Lectures

Supporting HSC geography students preparing for the 2025 HSC examination

GTA is excited to offer digital package of lectures designed to assist students maximise their HSC Geography examination results.

The packages will be available from July 2025 until the 2025 HSC Examination. Videos are view only and non-downloadable. Vimeo link and password will be provided upon purchase. Payment by credit card only for immediate access – no invoicing. **In some circumstances such as very small class sizes, a discount can be negotiated upon discussion with the package coordinator. Contact Lorraine.Chaffer@gtanswact.org.au**

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1	Welcome message!	Lorraine Chaffer, Package Coordinator	GTA is excited to offer digital package of lectures designed to assist students maximise their HSC Geography examination results.
2	HSC Examination Paper Unpacked	Rex Cooke, Saint Ignatius' College, Riverview	What to expect in the HSC examination paper, managing your time and how to respond to different types of questions.
3	Strategies to enhance written responses	Abigail Walker, Redlands	Language of command terms and using sentence starters. Building confidence for extended response questions.
4	Source application questions	Raquel Russo, St Gregorys College	Stimulus based questions that require application of knowledge e.g. fieldwork using topographic maps, photographs, illustrations.
	GLOBAL SUSTAINABILITY		
5	Global sustainability	James Forsyth, Calrossy Anglican School, Tamworth.	Overview of syllabus content for Global Sustainability including the global economic activity case study and application to student studies.
6	Global sustainability: Case study	Jaye Dunn, Killara High School	Using a case study to model HSC different types of examination questions. Critical analysis / Evaluation for sustainability.
	ECOSYSTEMS and GLOBAL BIODIVERSITY		
7	Ecosystems and Global biodiversity	Brett Deaves, Tuggerah Lakes Secondary College	Syllabus requirements and core concepts for ecosystems and biodiversity.
8	Ecosystems and Global biodiversity. Case studies	Matt Goodyer, Abbotsleigh	Syllabus requirements including comparative management, TWO types of ecosystems using examples.
	RURAL and URBAN PLACES		
9	Rural and urban places	Rebecca Sutcliffe, Roseville College.	Introduction to settlements, challenges for RUP, sustainability and other concepts.
10	ONE rural ONE urban place	Matt Carroll, Jannali High School	Requirements for ONE Rural and ONE urban place case studies, and top tips for HSC success.
11	A Large City	Robin Murray-Leslie, Wenona	Syllabus requirements for the Large City case study. References to Shenzen.
	TOOLS and SKILLS		
12	HSC Skills 1	Sam Coburn / Alan Cizzio, Maitland Grossman High School.	Revision resources and practice for more difficult skills questions.
13	HSC Skills 2	Justin Mahoney, Web Wise Education Academy	Topographic maps; cross sections; vertical exaggeration; interpreting contour patterns; gradient; local relief; aspect.
14	Integrating fieldwork into written responses	Kathy Jones, Fieldwork Connections	Using fieldwork techniques and data to respond to HSC style questions.

From sustainable biomes to thriving bed builds: a real-world geography project that grew more than just plants

By Oliver White

Former Geography Teacher, WaterUps Education Lead & Co-Founder of Ready Fund Grow

It started with a familiar lesson in Year 9 Geography within the Sustainable Biomes topic.

We were discussing global food systems, climate pressures, and water scarcity when one of my students asked, "Why don't we have any real-life examples of this in our school?"

I didn't have a good answer. I threw the question back to the class: "OK then, how do we change that?" A week later, they returned with a proposal.

They came back having researched wicking beds which are self-watering systems that could help us grow food while managing water more effectively. They had also found a local company, WaterUps, whose modular systems were made from locally sourced recycled plastic and designed specifically for low-maintenance growing. That moment, initiated entirely by student curiosity, set us on a path that changed more than just our school garden.

The Problem with School Gardens

Many schools want gardens. But the reality is, most of them fail. Teachers are stretched thin, maintenance falls over during holidays, and budgets are tight. The best ideas can fall apart under the weight of logistical challenges.

That's what made the wicking bed solution so compelling. It solved a lot of the problems we didn't know how to answer: reducing watering to just every few weeks, keeping plants alive over summer, and eliminating the need for irrigation systems or ongoing upkeep.

A Living Classroom

With a bit of support and a lot of student drive, we turned unused areas of our school into wicking gardens. Students helped plan the layout, fill the beds with soil, mapped sun exposure, tracked water usage, and monitored plant growth. We also integrated in-ground worm farms into the beds and began collecting food waste to feed them, creating a simple but effective closed-loop system.

The project quickly became more than a garden. It was a place where systems thinking came to life, where theoretical concepts from Geography were visible and tangible. It created genuine engagement, not just for the students who were already switched on, but especially for those who normally drifted through the classroom.

From Side Project to New Path

That school project also sparked something for me personally. I built a similar system at home, combining WaterUps wicking systems with an in-ground worm farm.

I called the idea WickWorming, and turned it into a small side project, launching it through a crowdfunding campaign. I was still teaching full-time, but WickWorming gave me a creative outlet to explore sustainable design, marketing, and community education in a different way.

Not long after, my young family and I made the decision to relocate from Sydney to Newcastle. It meant leaving the school I had been teaching at, and after 14 years in education, I was at a crossroads.

I could start fresh at a new school, or I could follow the journey I'd already started with WickWorming and explore what new opportunities might look like outside the classroom.

The appeal of doing something both meaningful and challenging was strong. Having already worked closely with WaterUps through WickWorming and in a school context, I reached out to them and asked if there was space for someone like me, someone who deeply understood how their systems could be embedded in education, and who wanted to bring a passion project with them.

Thankfully, they said yes.

Making Funding Part of the Learning

Once I stepped into my role at WaterUps, I kept thinking about the students who had driven that original project and how much they had gained from being trusted to lead something real. The learning didn't just happen in the garden; it happened in the planning, the teamwork, and the community engagement.

That's what led me to reconnect with Ready Fund Go (RFG) which was the environmentally focused crowdfunding platform I used to launch WickWorming. Together, we developed Ready Fund Grow, a crowdfunding platform tailored to schools, where students can lead the planning, promotion, and funding of sustainability projects. It's not just a way to raise money for garden infrastructure it can be a learning tool in itself.

For many schools, funding is the biggest hurdle. Traditional fundraising can be exhausting, and grants aren't always accessible. RFG removes those barriers, while also becoming part of the curriculum.

It's not about turning schools and students in to marketers. It's about giving students a framework to see how ideas become reality, and how community support can be mobilised for something with shared value. Campaigns can be reward-based (offering WaterUps products, student-made items, or produce), or donation-driven, depending on the school's preference.

And the learning is real, cross-curricular, hands-on, and deeply empowering.

Geography Teachers: Why This Matters

As Geography educators, we teach systems. We teach interconnection. We teach cause and consequence. But so often, these ideas can feel abstract to students — especially when confined to whiteboards and worksheets.

Bringing these concepts into the schoolyard changes everything.

Wicking beds allow students to explore sustainability through doing: from soil and water systems to food

production, waste cycles, and climate adaptation. They foster inquiry and agency while addressing logistical barriers like watering, holiday maintenance, and funding.

Projects like these align with core syllabus outcomes in units such as Sustainable Biomes, Environmental Change and Management, and Interconnections, while also supporting real-world skill development.

Lessons and Reflections

What I've learned through all of this as a teacher, and now in a different role, is that meaningful sustainability projects don't come from a top-down plan. They come from questions. From students being invited to take the lead. From teachers being willing to step back, offer structure, and then let the learning unfold.

For those considering a similar approach, a few suggestions:

- Start with your students. Let their questions shape the inquiry.
- Begin small. One bed, one class, one patch of unused space is enough.
- Embed it in your units. Treat the garden as a fieldwork site, not an extra.
- Let students lead. Ownership creates momentum and meaning.
- Think long-term. Choose systems that survive the school calendar and integrate naturally into teaching.

Projects like these remind us that Geography is a subject best learned through doing. When students can see, measure, grow, and reflect, the learning sticks.

For more detail, see: Ready Fund Grow https://readyfundgrow.com.au/

If you're interested in seeing how other schools are using wicking systems or student-led crowdfunding as part of their Geography programs, I'm always happy to share insights or swap ideas.

oliver.white@waterups.com.au

En-ROADS Simulation: Exploring Climate Change Solutions

Louise Swanson, The Harbour School Sydney

En-ROADS is a climate change simulation that allows users to explore how different policies and actions could address temperature increase by 2100.

It has been designed by Climate Interactive and MIT Sloan and is based on the Intergovernmental Panel on Climate Change (IPCC) AR6 Physical Science Summary for Policymakers (2021) report. It is regularly updated and tweaked to incorporate the latest research.

En-ROADS can be accessed here: https://www.climateinteractive.org/en-roads/

Figure 1: The En-ROADS simulator provides a user-friendly interface that allows students to easily access basic functionality.

Introductory activities and basics

Simulation: Basic level – Exploring policy changes on Global Temperature increases

At the simplest level, students can explore how changes in six key policy areas: Energy Supply, Transport, Buildings and Industry, Growth, Carbon Dioxide Removal, and Other Sources of Greenhouse Gas can impact on aspects of climate change. Students can make changes along each of the sliders on the simulator home page, and the consequences of those changes are displayed in the two main graphs displayed at the top of the page: Global Sources of Primary Energy, and consequently Global Temperature Change.

In the first phases of exploring the En-ROADS simulation, students can work in small groups with a focus on a policy theme. Students can undertake research to investigate the theme and its impact on climate change, providing an overview for the class as an introduction. In their policy groups, students can explore how changes to policy in their policy area can positively impact on projected Temperature increase by 2100. Students can simply move the slider along the scales to see the impact on the corresponding graphs.

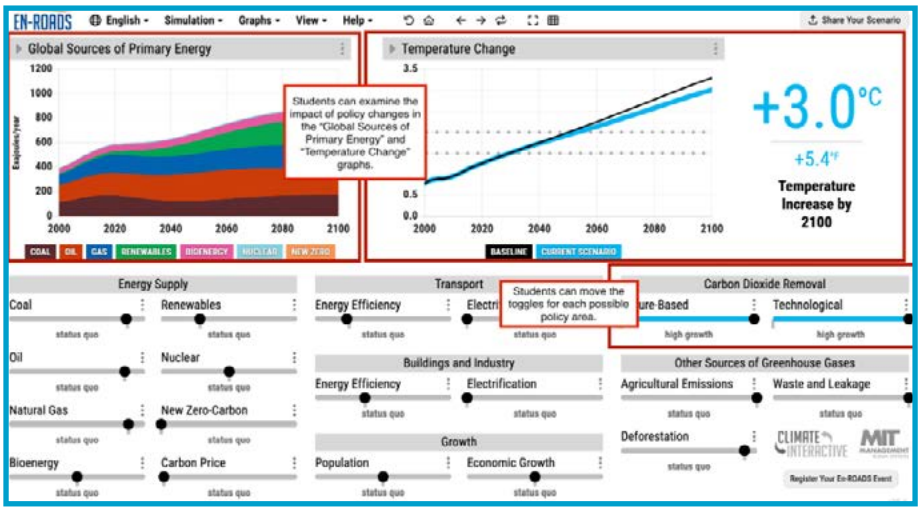


Figure 2: In the example above, the levels of carbon dioxide removal for both Nature-based removal and Technological removal have been increased to the highest level. This results in an overall decline in Temperature increase by 2100 by 1% (increase is at 3.2 degrees celsius rather than 3.3).

Class activity 1: Policy Theme Group work

Climate change research

In groups of no more than 4, investigate a policy theme selected from

- Energy supply,
- Transport,
- Buildings and Industry,
- Growth,
- Carbon dioxide removal, or
- Other sources of greenhouse gas (agricultural emissions, waste and leakage, and deforestation).

Research how different policies, initiatives and case studies around the world attempt to address climate change.

Provide a brief presentation and one-page summary of the policy theme for your class.

Basic En-ROADS Simulation

In your group, provide a summary of suggested policy changes in your selected policy area that could have positive impacts on climate change projections.

Class Collation

As a class, collate a range of different policy changes that could reduce the impacts of climate change.

Extended response

Explain how a range of policy themes related to climate change mitigation could impact on the rate and magnitude of change.

Simulation: Intermediate level

Once students have mastered the basic components of En-ROADS, they can move onto more complex interrelationships that can be explored within the simulation.

A range of additional climate change-related measurements and impacts of policy change can be explored including predictions related to Impacts (Atmospheric measurement, Extreme Weather, Health and the Economy, Oceans); Ecosystems and Biodiversity; Greenhouse Gas Emissions; Carbon Dioxide Emissions; Primary Energy Demand – both totals and types; Final Energy Consumption – both totals and types; Land, Forestry and Food; Carbon Dioxide Removals; Population and GDP; Financial; History.

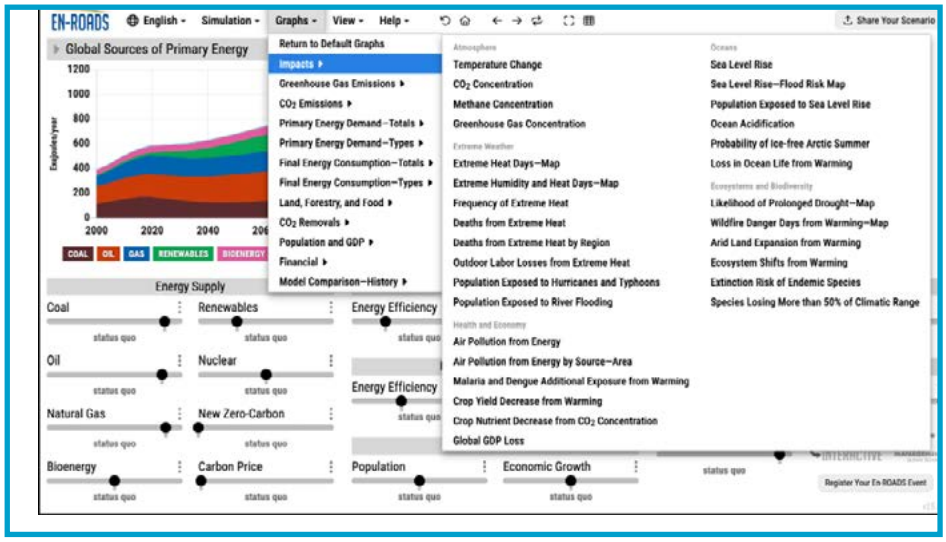


Figure 3: Students can access a multitude of impacts of policy changes in the Graphs drop down by selecting from a range of options.

Class activity 2: Policy Theme Group work

Students investigate the impact of implementing a range of different policy changes across the six policy areas, and explore the various impacts and correlations that can be explored in the Graphs drop down menu.

Create a scenario to address climate change – Individual task

Students create a scenario to address global climate change by using the sliders to implement a range of policies. The aim of the scenario is to achieve 2 degrees celsius or less global temperature increase.

1. Create a one-page overview of the scenario you have created to address climate change.
2. Describe the most effective climate change policies you implemented to create your scenario. What policies were most effective in reducing temperature increase?
3. Choose the three most effective policies you implemented in your scenario. What will the social, economic and environmental impacts of the policies be? Do you think these will be acceptable to society as a whole? What challenges might community leaders face in implementing these policies?

The En-ROADS climate change simulation –Extension

The En-ROADS website includes two longer tasks for school students that could be used over several weeks to explore climate change solutions. These are available on the En-ROADs website:

https://www.climateinteractive.org/guided-assignment/

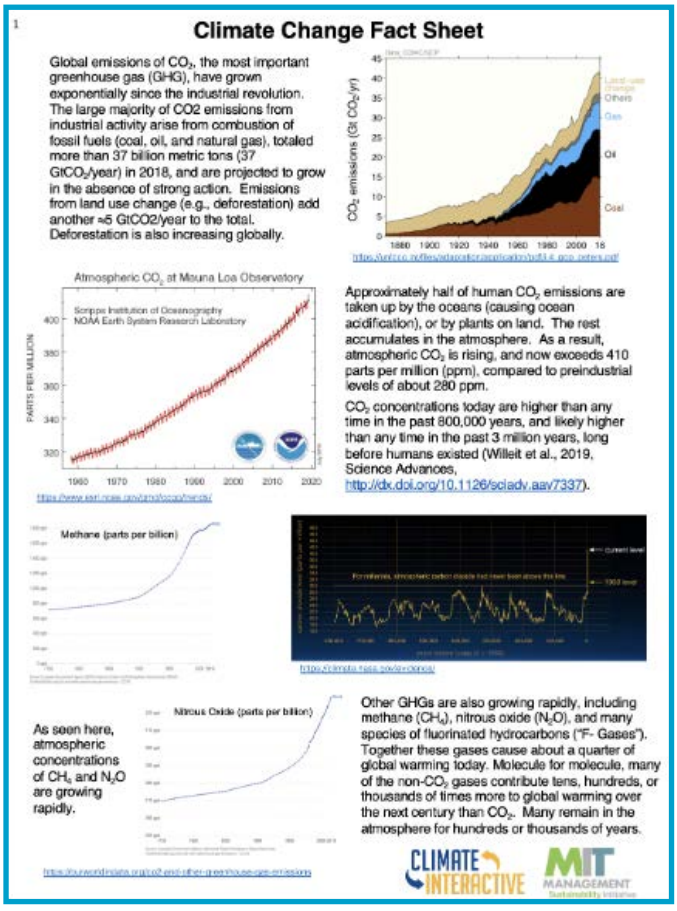
Assumptions

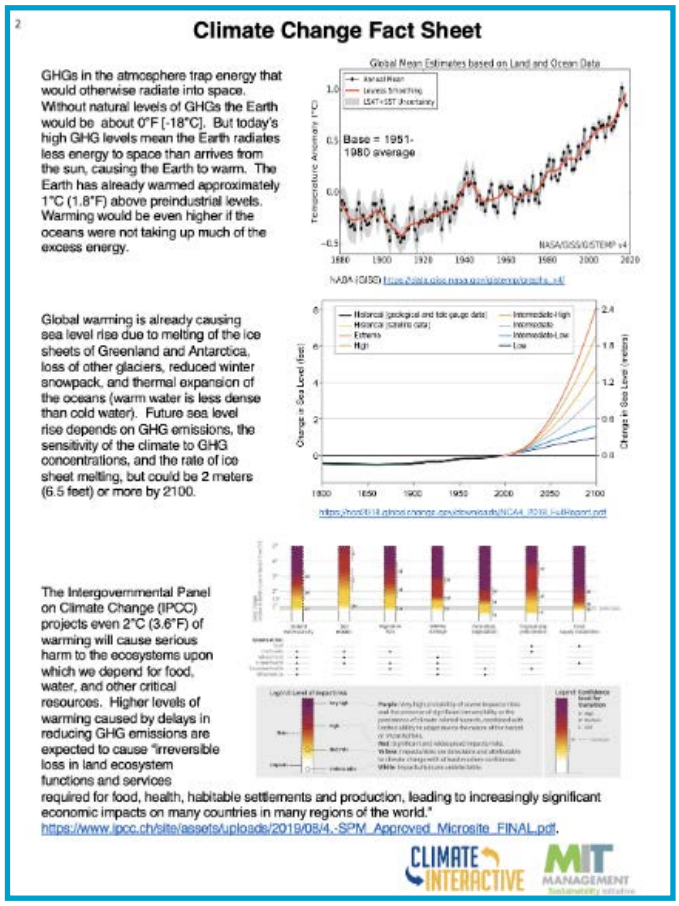
In addition to longer, more detailed tasks, students can explore other aspects of the simulation. The En-ROADS simulation is based on a series of assumptions related to Earth's systems, the economy, energy, carbon capture and removal. In the initial stages of exploring the simulation, to simplify the simulation, it would be advised to leave the assumptions as they have been pre-set.

When students become more familiar with the simulation, they can change the settings in the Assumptions menu to see how these assumptions impact on the effectiveness of climate change solutions. A small number of the examples of assumptions that can be changed are levels of ocean mixing, carbon cycle ocean uptake, increase in forest fires, contribution to sea level rise from ice sheet melt from Antarctica or Greenland, time taken to build energy plants, and change in growth rate of afforested and reforested land. There are over 50 different assumptions that can be modified and explored.

En-ROADS Supporting Resources

The En-ROADS website contains a range of supporting resources that teachers can use to support student learning while taking part in a simulation. These include both PowerPoint presentations and handouts, that support learning about the concept of climate change in general, case studies and benefits of different combinations of climate change solutions working together to multiply impact.





Figures 4 and 5: Examples of handouts about the concept of climate change on the En-ROADS website.

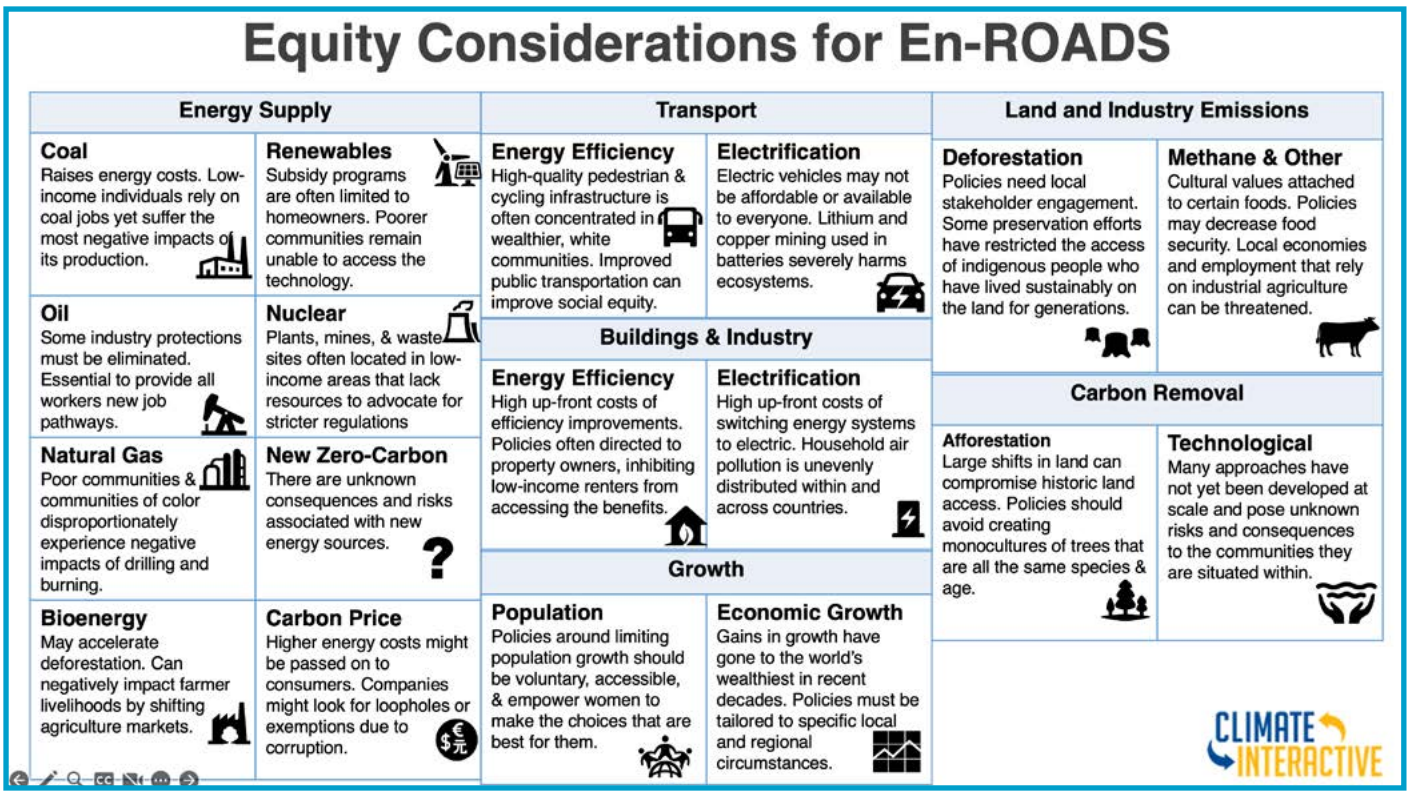
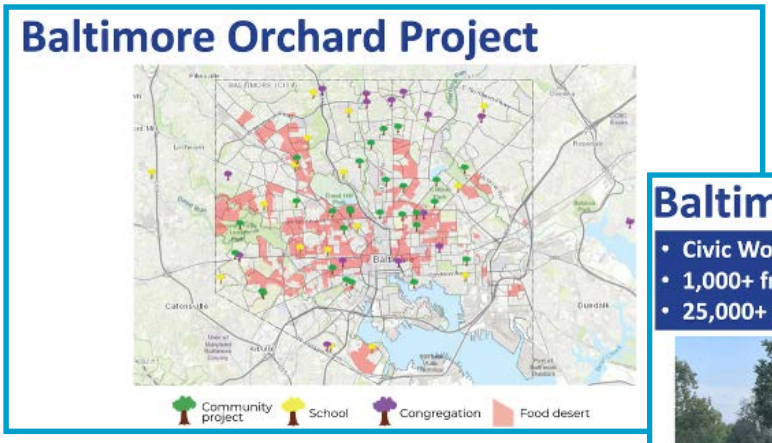


Figure 6: Resources provided on the En-ROADS website provide information about factors that need to be considered when making decisions about climate change solutions.



Figures 7 and 8: Presentation slides are provided on the En-ROADS website including case studies.

Syllabus Links

The En-ROADS simulation provides an excellent, practical student-centred learning activity for students to engage in Study 3: Climate Change, of the Human-Environments Interaction for Preliminary Geography.

GTANSW&ACT Geoscience Australia Professional Learning Day

Symonston, Canberra, ACT, 12 December 2024

The event was specifically designed for teachers of Geography from the ACT and NSW. It aimed to enhance teacher's professional skills through a series of workshops, presentations, and interactive sessions.

Participants had the opportunity to engage with experts in the field and to collaborate with peers. The day promised to be an enriching experience, fostering professional growth and a deeper understanding of what Geoscience Australia provides, and the day didn't disappoint.

Sessions included a presentation by Mardi O'Neil on coastal geomorphology and Ken Dale on flood vulnerability and mitigation. Additionally, hands-on workshops utilised the Digital Atlas of Australia and DEA navigation software to view changes to landcover and coastal features, as well as the impact of flood and bushfire hazards in Australia over time.

As the major national and regional earthquake monitoring centre for Australia and the region, participants were also given a tour of the Earthquake Monitoring Centre, showcasing live feeds from hundreds of monitoring stations around the world. This tour provided an insightful glimpse into the real-time monitoring and analysis of seismic activity, highlighting the critical role Geoscience Australia plays in disaster preparedness and response. Attendees gained a deeper appreciation for the sophisticated technology and international collaboration involved in tracking and understanding earthquake phenomena.

A special thank you goes to Shona and Dominic from the Education team for their expertise and time in coordinating the speakers. Their efforts ensured that the sessions were both informative and engaging. Additionally, we extend our gratitude to Sav and the team in the Café, who provided a wonderful selection of menu items for lunch, contributing to the day's overall success.

Finally, I would like to thank those teachers who participated in the Professional Learning Day, coming from various regions including the ACT, Sydney, Young, and the South Coast. A special mention also to the six staff members from the Finigan School of Distance Education. Your participation and enthusiasm greatly enriched the event, fostering a collaborative and dynamic learning environment.

GTA NSW & ACT look forward to hosting similar events in the future and continuing to support the professional development of Geography teachers across the ACT and region. The following list of resources have been made available from the day for you to explore and include in your classrooms; enjoy! GoGeo!

Michael da Roza
GTANSW&ACT Vice-President and ACT Representative

Resources for you to explore in your classrooms

General Geology and Geography resources

- Shaping a Nation – free digital PDF download
- How-to guide for DEA maps and GA portal - videos

Coastal Geomorphology and DEA coastlines, Waterbodies, and landcover

- DEA maps portal
- Analysing landscape changes over time – classroom inquiry activity
- Bathymetry of Australia - video
- The Australian Coast – teacher guide and student activities

Flood vulnerability and mitigation, DEA flooding and bushfire examples

- Natural hazards – classroom inquiry activity
- DEA hotspots

Earthquakes

- Understanding the National Earthquake Alerts Centre – video
- Earthquake monitoring – video
- Earthquakes@GA
- Geoscience Australia Data Discovery portal – 3D earthquakes
- Analysis of Earthquake data – teacher guide and student activities

Digital Atlas of Australia

- Create a map on the Digital Atlas of Australia

DOCUMENTARY: LIQUID HEART: Restoring the Australian Alps

Watch out for the public release of this documentary later in 2025 or look for a showing near you on the Liquid Heart website https://www.liquidheart.com.au/

by Lorraine Chaffer
GTA NSW

I had the pleasure of attending the premiere viewing of Liquid Heart at the Shine Dome in Canberra on July 29th. It is a beautifully-filmed story about the need to preserve the natural processes that create the source of water vital for ecosystems and human use. Produced and filmed by Stephen Curtain, the film draws on the expertise and passion of First Nations peoples for their country and ecologists committed to its preservation.

A screen capture from the preview of the film on the Documentary Australia and Liquid Heart websites.

A mix of historical and contemporary content the documentary, filmed mainly within Kosciuszko National Park, does not dwell on either human impacts or restoration efforts but touches on both in a patchwork of interconnected stories. It does not touch on the issue of brumbies but rather post-grazing restoration work.

I particularly enjoyed the deeper explanations of geographical processes underpinning the functioning and value of alpine wetlands and insights into alpine biodiversity. The takeaway message is the value of Australia's alpine ecosystems and the ongoing need for restoration and preservation. In warming and drying climates, the "water tower" role of alpine environments, locally and globally is particularly significant.

For stage 6 teachers I recommend viewing after teaching the syllabus content – to analyse what the film offers in the way of a deeper understanding of an often underappreciated natural environment.

SYLLABUS LINKS

- STAGE 6 Ecosystems and Global Biodiversity (Alpine)
- STAGE 5 Environmental change and management

Mount Kosciuszko, Australian High Country

About

Join us as we explore regeneration across the Australian Alps with a focus on the New South Wales mountains in the post-grazing era. This documentary brings together First Nations people, scientists and practitioners to reflect on their shared understanding of the natural processes of mountain ecology, especially the power of water. The enduring soil erosion arising from almost a century of grazing is finally addressed by the NSW Soil Conservation Service and over a period of 60 years, the mountain ecological processes are partially restored.

These alpine mountains are imperilled due to increasing demands of climate change, habitat loss due to fire and human impacts. In this film we seek to understand the journey to regenerate the Australian Alps, informing land managers, decision-makers and local communities of the importance of continuous custodianship of these precious and unique, natural water-towers. The future of the mountains is the future of our water.

We seek to inspire many generations across the multitude of individuals and groups of people who enjoy the Australian mountains: First Nations, scientists, ecologists, environmental activists, fishermen and women, artists, poets and writers, and recreational users including skiers, mountain bikers and hikers.

We are all a part of the story of the mountains.

LIQUID HEART: Restoring the Australian Alps

Synopsis

Come on an immersive journey into The Australian Alps. Join First Nations Story Teller Shane Herrington and key Mountain Ecologists and Scientists, Alec Costin, Ken Green, Walter Jehne and others to tell their shared story of Caring for Country – Mountain Ecology. Their continuous commitment to regeneration of country is as a result of shared understanding of the natural, balanced regulation of soil, water, biodiversity, landscape and climate. Restoring the Australian Alps comes when the natural environment and especially, key mountain catchments are under increasing threats of climate change and human impacts. In shared knowledge there is hope for practical actions to restore, recover and regenerate our mountain landscapes.

Story

This story starts with First Nations Custodian Shane Herrington sharing connectedness with the NSW Snowy Mountains. Soon, the late Dr Alec Costin and his colleagues across the generations, inspire audiences with their in-depth knowledge of the Australian Alps. Tasked with maximising the catchment capacity of the mountains for the building of the Snowy Scheme via the infant NSW Soil Conservation Service, Alec becomes immersed in mountain ecology and its restoration. The story engages passionate ecologists, their voices clear describing the miniature and greater vision for conservation and regeneration of the mountains. Joining Dr Costin are Associate Professor Ken Green, Gen Wright, Professor Hope, Dr Walter Jehne and some of our youngest ecologists, equally enthralled with conserving nature; the alpine environments. This story surrounds the audience with the sounds, sights & feelings of the Australian High Country, building the community of millions of Australians who love the mountains.

Issue Summary

The journey to regenerate the NSW Alps in the post-grazing era. This story brings together First Nations People and scientists to reflect on their shared understanding of the natural processes of mountain ecology, especially the power of water. The enduring soil erosion arising from almost a century of grazing is addressed by the NSW Soil Conservation Service and over a period of 60 years, the mountain ecological processes are partially restored.

Impact Vision

Restoring Kosciuszko seeks to observe key mountain landscapes after over a century of grazing damage and other human impacts. This documentary brings together First Nations knowledge and science to understand the journey to regenerate the Australian Alps, to inform land managers, decision-makers and local communities towards continuous custodianship of these precious and unique, natural water-towers. Restoring Kosciuszko is an immersive all-seasons film experience that seeks to inspire many generations across the multitude of individuals and groups of people who enjoy the Australian mountains: First Nations, scientists, ecologists, environmental activists, fishermen and women, artists, poets and writers, recreational users including skiers, mountain bikers and hikers. We are all a part of the story of the mountains. Our mountains are imperilled due to increasing demands of climate change, habitat loss due to fire and human impacts. The natural future of the mountains is our water future.

Outcomes

1. Increased awareness of the natural systems of the Snowy Mountains – their ecology.
2. Understanding the shared Custodianship by First Nations Peoples, Science and the Community to restore Mountain landscapes.
3. Partner with universities towards continuous learning, monitoring and restoration processes.
4. Partner with land management agencies for practical protection and physical repair.
5. Partner with key user groups to share knowledge and inspiration including Snowy Hydro, Perisher Valley, Thredbo, Snowy River Shire Council, Destination NSW. Inspire greater commitment for financial and practical investment in mountain reparation.
6. Encourage and entice the greater community to respect and protect the mountain destinations through "tread lightly, leave no trace" principles, articulated through a natural love for these beautiful environments.
7. Foster through sharing, new generations of Custodians and especially, young First Nations people and environmental scientists.

This article was sourced from the Documentary Australia website.
https://documentaryaustralia.com.au/project/liquid-heart-restoring-the-australian-alps/

A Large City Outside of Australia –

Shenzhen, the little-known Silicon Valley of China

by Robin Murray-Leslie, Geography Educator

Shenzhen has transformed from a fishing village to high-rise megalopolis in 40 years. ingfengwu/Getty

Introduction

Shenzhen, once a modest fishing village on the southern coast of China, has transformed into a global megacity, the Silicon Valley of China, in just four decades.

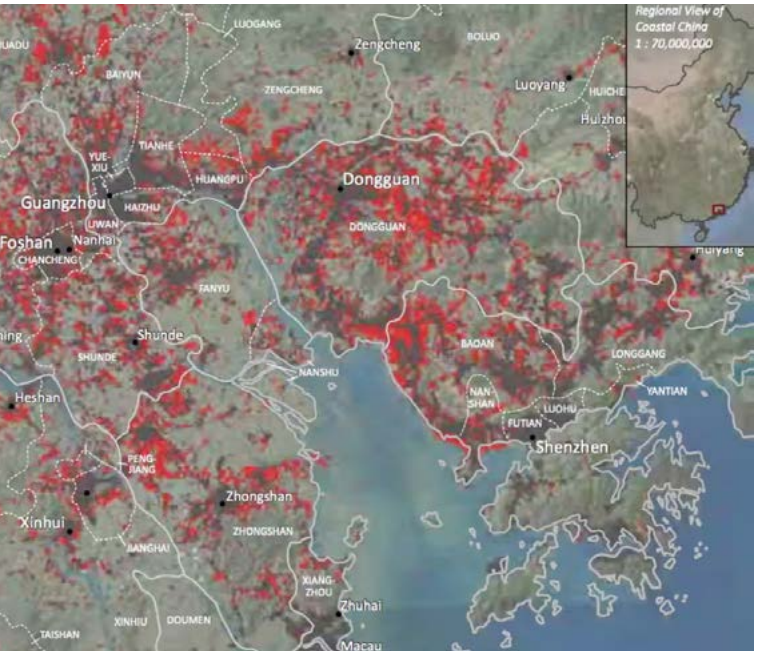
As someone who has walked its bustling streets, navigated its high-tech transport systems, and witnessed its relentless pace of development, I find Shenzhen a compelling case study in urban geography. This article explores Shenzhen's spatial and demographic characteristics, the geographical processes that shaped it, and the challenges it faces as a rapidly evolving urban centre.

Character and Spatial Dimensions of Shenzhen

Shenzhen's urban landscape is a striking juxtaposition of gleaming skyscrapers and dense urban villages. The city spans 1,991 km² and is home to approximately 13.5 million residents. Located at 22°N latitude in the Pearl River Delta, it forms part of the world's largest urban region along with Hong Kong, Guangzhou, Macau, and Zhongshan. This geographic positioning has profoundly influenced its spatial and economic dynamics.

Shenzhen experiences a humid subtropical climate, characterised by very mild winters and hot, humid, and rainy summers. Annual rainfall averages around 1,950 mm, with the wettest months occurring from May to September. Daytime summer temperatures often reach 32°C, while winter highs hover around 20°C, making the city relatively warm year-round.

Urban design in Shenzhen reflects a commitment to sustainability and smart urbanism. Green spaces are integrated into residential and commercial zones, and infrastructure is built with advanced technologies that support efficient transport, energy use, and urban management.

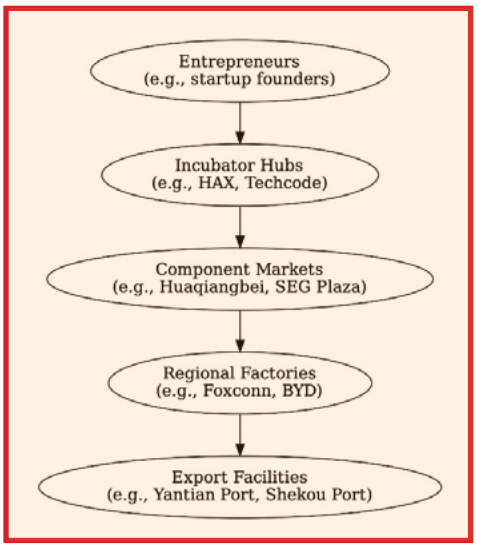


Pearl River Conurbation: Shenzhen is a central node in the Pearl River Delta, a region known for its strong industrial base, especially in electronics, IT, and petrochemicals. Whilst Shenzhen may be the hi-tech hub, the cities surrounding it specialise in component manufacturing. University of Wisconsin-Madison/World Bank

Processes

Historical Development and Economic Transformation

The turning point in Shenzhen's history came in 1980, when it was designated as China's first Special Economic Zone (SEZ). This policy shift, part of Deng Xiaoping Peng's reform and opening-up strategy, attracted foreign investment and catalysed rapid industrialisation. Initially a manufacturing hub, Shenzhen has evolved into a high-tech powerhouse, hosting global giants such as Huawei, Tencent, and DJI. The city offers a complete end-to-end ecosystem for tech innovation, including incubator hubs like Troublemaker Hub, component markets such as Huaqiangbei, manufacturing centres in nearby cities like Dongguan and Foshan, and export infrastructure through ports like Mawan, Chiwan, and Yantian. From a GDP of 0.15 billion yuan in 1980, Shenzhen's economy has surged to over 2.77 trillion yuan, a testament to its extraordinary growth.



End to end tech ecosystem: Shenzhen has been called the "world's factory," "the new Silicon Valley," and the "maker's dream city," and it has a complete ecosystem that contains everything needed for all stages of electronics production all in one place. This has turned the city into a staging ground for large high-tech companies, rising startups, and independent innovators from all over the world looking to get their products made as efficiently as possible. Author's own diagram.

Demographic Trends and Social Dynamics

Shenzhen's population is predominantly migrant-based, with 63% of residents originating from other parts of China. This influx—over 8.93 million migrants—has created a young, skilled, and highly motivated workforce, driving innovation and economic dynamism. However, this demographic shift has also introduced challenges in housing, employment, and social integration. The city's rapid expansion has outpaced its ability to provide equitable access to services, leading to pockets of inequality and tension.

Geographical Processes and Regional Linkages

Shenzhen's development is shaped by several key geographical processes: economic liberalisation through SEZ policies, urbanisation driven by internal migration, technological innovation supported by regional infrastructure, and global trade facilitated by its strategic location and port capacity (handling over 30 millionTEUs or twenty-foot equivalent units in 2023). The Qianhai Cooperation Zone, where I lived in my former school, exemplifies Shenzhen's role in fostering international business and regional integration, linking it to Hong Kong and the broader Greater Bay Area.

PRC Special Economic Zones (SEZ): In 1979, Shenzhen was designated as China's first Special Economic Zone (SEZ) by Deng Xiao Peng. This status granted the city trade and investment privileges without central government approval.Tax incentives to attract foreign enterprises and autonomy in economic policy, encouraging innovation and entrepreneurship. BBC.

Smart City Challenges and Responses

Challenges of Living in Shenzhen

Despite its achievements, Shenzhen faces significant urban challenges: water stress due to drought conditions, air pollution despite electric public transport, noise pollution from constant construction, extreme heat during summers, and social integration issues due to the large migrant population. During my time in Shenzhen, I often marvelled at the efficiency of its metro system and the ubiquity of mobile apps. Yet, I also experienced the intense heat, the haze of pollution, and the relentless pace of construction—a reminder that rapid development comes with trade-offs.

Responses to Challenges and Opportunities for Sustainability

Shenzhen has responded to its urban challenges with innovative and sustainable planning: park networks and waterfront redevelopments, green corridors promoting walkability, eco-friendly metro systems, and climate-adaptive green spaces. For example, the Shenzhen Bay Park, stretching over 13 km, integrates green infrastructure with public recreation. The city's metro system, one of the world's largest, spans over 500 km and is powered entirely by electricity, contributing to reduced urban emissions.

Urban Population and Public Safety

Shenzhen has embraced AI-powered surveillance and predictive analytics to manage public safety in real time. By analysing pedestrian and vehicle patterns, the city proactively prevents incidents and improves emergency response. The "Smart Eye" system, deployed in districts like Futian, has helped reduce street crime by over 30% in monitored areas. This model has influenced cities like New York and Tokyo, showcasing Shenzhen's leadership in smart policing.

Enhancing Community Governance

Digital platforms such as the Community Home Network and Palm App empower residents to participate in local decision-making. These tools foster civic engagement and transform Shenzhen into a people-first city, enhancing social sustainability. As of 2024, over 3 million residents actively use these platforms to report issues, vote on community projects, and access local services.

Optimising Senior Care Services

With a rapidly aging population, Shenzhen has integrated AI-driven healthcare to support independent living. Telehealth services and health monitoring reduce hospital visits and improve quality of life. The Shenzhen Smart Elderly Care Platform connects over 500 care institutions and provides real-time health tracking for more than 100,000 seniors, offering a model for cities like Seoul and Milan.

Driving Economic Transformation

Shenzhen continues to attract global investment and support local startups through its tech-friendly environment. In 2023, the city's GDP surpassed $500 billion USD, driven by innovation hubs like Shenzhen High-Tech Industrial Park and companies such as Huawei and BYD. This strategy has led to sustained GDP growth and positioned the city as a model for economic revitalisation through smart city initiatives.

Measurable Successes and Achievements

- Public Safety: Crime rates have dropped by 23%, and emergency response times have improved.
- Senior Care: 80% of elderly residents live independently; hospitalisations have decreased by 35%.
- Environmental Sustainability: Carbon footprint reduced by 19%; recycling rates increased by 27%.
- Citizen Engagement: 65% of residents use digital governance platforms; 92% user satisfaction.
- Economic Growth: 8.2% GDP growth in 2024, driven by innovation and global investment.

Conclusion

Shenzhen's story is one of extraordinary transformation, driven by deliberate policy, strategic location, and technological ambition. It offers rich insights into urban geography, economic development, and the challenges of managing a megacity. For geography educators and students, Shenzhen is not just a case study—it's a living laboratory of urban change and sustainability.

About the Author Robin Murray-Leslie is a Geography Teacher originally from Derbyshire, United Kingdom. His teaching journey has taken him across New Zealand, the People's Republic of China, and now Australia, where he currently teaches at Wenona School in North Sydney. Robin is especially grateful to his wonderful colleagues at Wenona for their support in helping him upskill in HSC Geography and acclimatise to his long-held ambition to live and teach in Australia.

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GTANSW & ACT Conference Scholarship Winner Report

The 2025 GTA NSW & ACT Conference invited teachers to think critically about the evolving role of Geography in an increasingly dynamic and complex world.

By Bronty Trease

Under the titles "Navigating Change" and "Geography for a Resilient Future," the conference was an essential forum to discuss how geographic thought equips students to respond to and redraw the uncertainties of global change. This message was woven throughout the two-day conference, embedded in practical workshops and complemented by such motivating keynote speeches as Costa from the ABC.

One of the central messages to come out of the conference was the revolutionary potential of change, not something to be dreaded, but a force for development and innovation. For the purposes of the new syllabus launch, this message resonated strongly.

As a beginning teacher and one of the few Geography-trained faculty members in my school, I was both empowered and validated by the experience. Rather than fearing my first new syllabus, I was prompted to think positively about its possibilities and how I might lead the integration effort at my school. This message was strongly reinforced in Fleur Farah's sessions. As a respresentative of NESA and a curriculum expert for HSIE, her session introduced me to the comprehensive support documents and provided practical guidance for curriculum implementation.

No less significant was attention to the worth of transformative fieldwork in human and physical geography environments. Workshops illustrated how place-centred learning, highly interactive, enables students to study in authentic ways about their environments — whether brief, localised study of nearby communities or extended visits to wetlands and other valued landscapes.

Fieldwork aids in developing an appreciation of spatial and temporal processes and also facilitates the ability of students to observe processes in action before their eyes in real time. In doing so, it enables active, engaged citizens who are more able to make sense of and react to problems in their immediate and wider world. By getting out of the classroom, not only do students learn about geographic skills but they also gain the ability to get involved with creating a stronger and more sustainable future.

What rang out loudest throughout the conference was a collective optimism: that Geography, taught with meaning and purpose, equips young people not to just survive change, but to drive it.

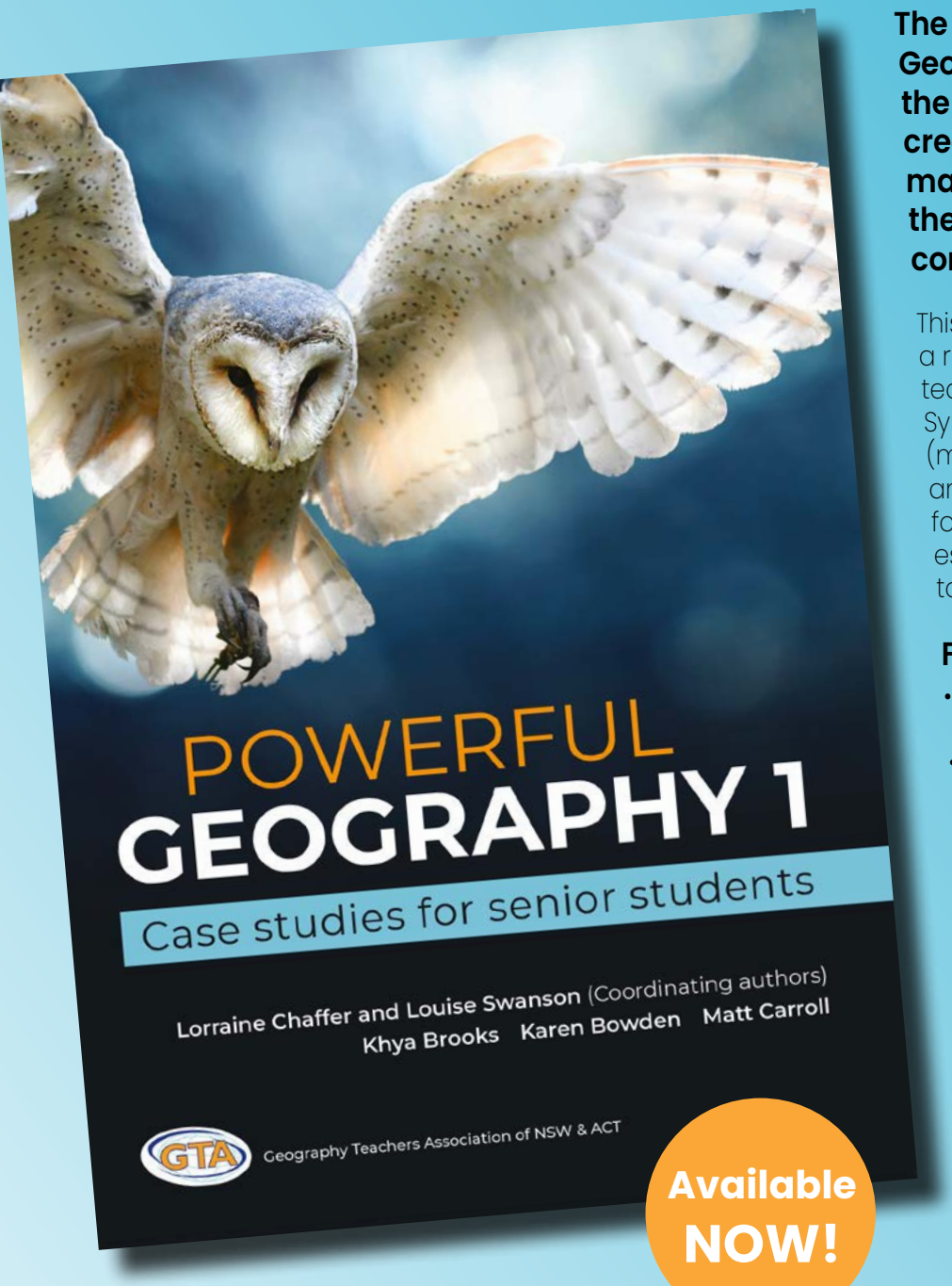
By developing curiosity, critical thinking, and empathy, geographic education creates a generation that sees change not as disturbance, but as opportunity. This was blatantly evident in the Blueminds: turning the tide on ecoanxiety workshop that centred on the strength of empowering our youth within our classrooms. Listening to their voice and knowing where they can take their course of navigating change far.

As educators, we are uniquely positioned to guide our students along this path — teaching them to ask questions appropriately, question premises, and envision futures that are just, resilient, and sustainable.

The 2025 GTA Conference both provided a timely reminder of Geography's power to inspire hope and action in a world of uncertainty, and reminded me why I chose to teach Geography in the first place.

Bronte is an early career teacher at Eden Marine HS and values Geography's "strong connection to real-world learning and how it fosters active, informed citizenship in students." She is teaching the first HSC Geography class since 2019.

POWERFUL GEOGRAPHY 1



Available NOW!

The team of authors for Powerful Geography 1 are excited about the case studies they have created, the beautiful illustrations, many never seen before, and the inclusion of Visualise This, concept explainers.

This book offers teachers and students a range of case studies to support teaching the NESA Stage Geography Syllabus (2022). The use of GEO stories (micro studies), large case studies and a visual dictionary (Visualise This) for each Content Focus Area covers essential content knowledge, concepts, tools, and skills.

Featuring:

- Contemporary case studies for each Content Focus Area
- GEO stories – micro case studies to simulate discussion and differentiate learning.
- Visualise This – key concepts explained using illustrations
- Student Activities – Core knowledge, Application, Extension, Fieldwork & Skills.
- A Google Drive of support materials for purchasers includes teaching programs, PPT presentations,, worksheets, chapter summaries and other resources. The link is posted with the books.

Teacher support, video links and general comments about teaching the course https://powerfulgeography.weebly.com/

For more informaton, email admin@gtanswact.org.au or phone (02) 9052 6451

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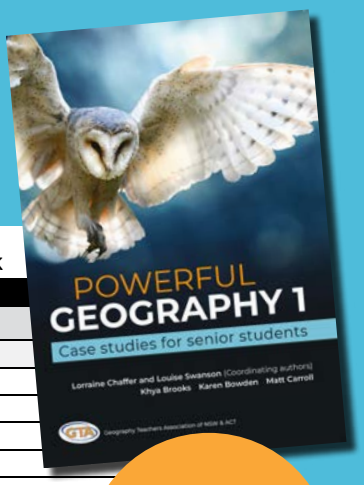
GTA Geography Teachers Association NSW & ACT

POWERFUL GEOGRAPHY 1: A Guide to Case Studies



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POWERFUL GEOGRAPHY 1: YEAR 11 *Potential Differentiation **Potential Fieldwork

CASE STUDY	Page	Where you can use this content
EARTH'S NATURAL SYSTEMS		
Small case studies / GEOstories		
Wildlife migrations	6	Wonder of nature, ecological systems
Forest elephants	11	Ecological systems *
Whales	15	Ecological systems *
Dust cycle	17	Geomorphic systems *
Iceberg alley	21	Atmosphere – hydrosphere systems
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Global atmospheric circulation	109	Congo rainforest / Lake Eyre Basin Option
Global ocean circulation	112	Antarctic and Patagonia / Arctic region Year 12- Coral Triangle & Great Southern Reef
Glacial and interglacial cycles	115	Patagonia and Boreal forests
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Fieldwork techniques – Physical	126	Any case study in which students do fieldwork, Venice
PEOPLE, PATTERNS AND PROCESSES		
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Environmental refugees*	136	Migration, Uganda
Global sand crisis*	141	Resource consumption and impacts / Singapore Year 12
Sea floor mining *	147	Earth's natural resources
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Major case studies		
Population and Resources Japan and Uganda Oil in Nigeria	160	Population & resource consumption Comparative study of two countries Factors influencing resource use, impacts.
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Madagascar: forests of hope mangrove *	291	Landuse & land cover change: Deforestation, reforestation
Morocco: Lost oases *	296	Landuse and land cover change:
Species migration *	303	Land cover change, Climate change
NSW National Park management **	308	Option topic: Natural hazards
Major case studies		
Lake Eyre Basin Region **	318	Option topic: Geographic region
The Arctic Region	358	Option topic: Geographic region
Climate change: Small island developing nations (SIDS)	400	Option topic: Climate change Land cover change
North coast floods 2022 (Digital) **		Option topic: A contemporary Hazard Stage 4 Water cycle- hazard.
Supporting concepts / Visualise This		
The Anthropocene	436	The Arctic region and SIDS
Land cover change **	439	The Arctic region, SIDS, North coast floods
Antarctica's doomsday glacier	444	Land cover change
THE GEOGRAPHICAL INVESTIGATION		
A modelled approach to undertaking the Geographical Investigation – using examples from a student SGP		

POWERFUL GEOGRAPHY 2

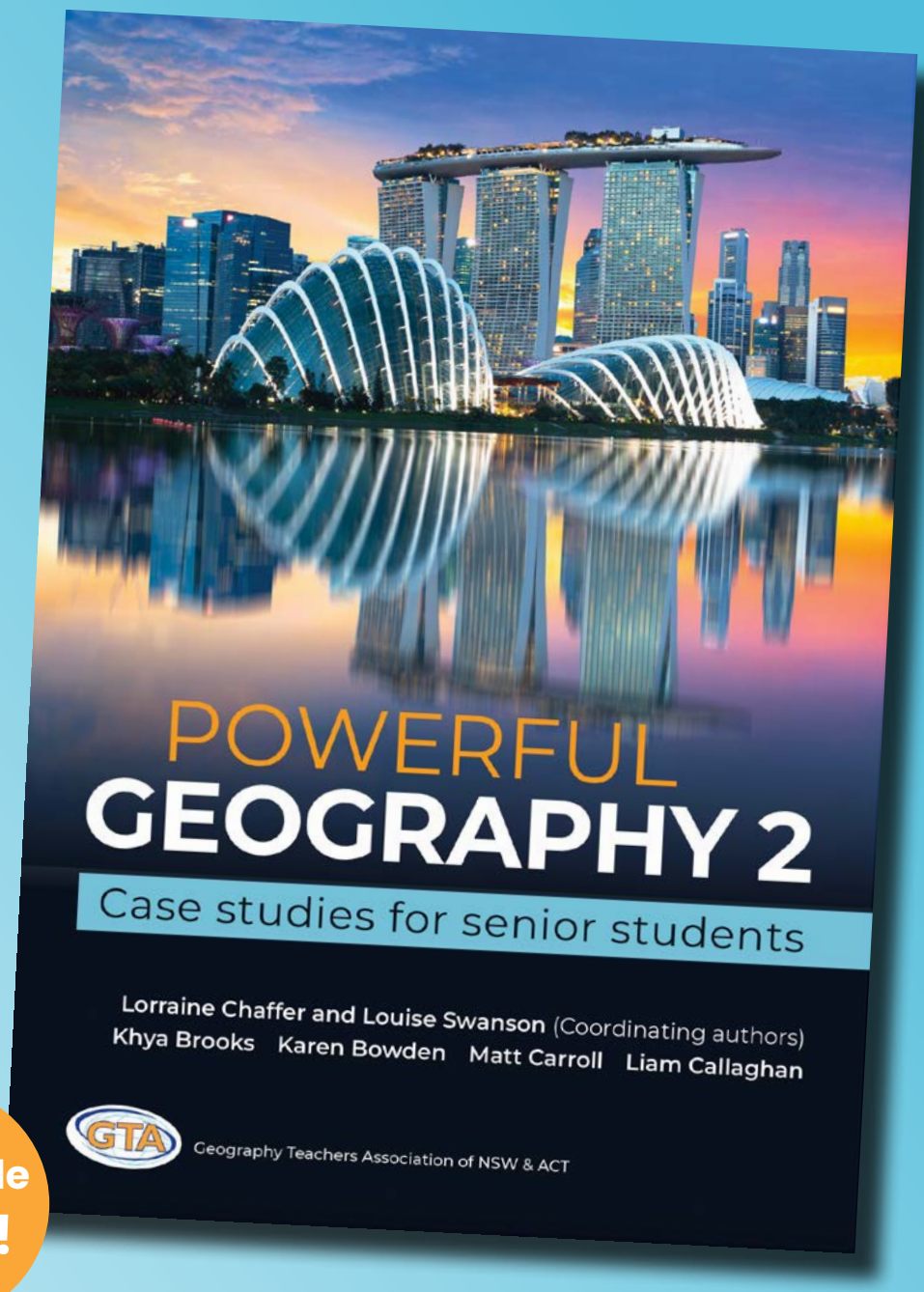
Powerful Geography 2's authors are excited about the new and extensively researched case studies they have created, and the supporting illustrative materials.

Contemporary case studies for each Year 12 Content Focus Area, GEOstories and Visualise This covers essential content knowledge, concepts, tools, and skills to support teaching the NESA Stage 6 (11-12) Geography Syllabus (2022).

The books were published in February 2025.

A Google Drive of support materials is available to all purchasers of PG2 and is emailed once an order is received. Teaching programs, PPT presentations, worksheets, topic summaries and other resources are available for each case study..

Teachers will continue to be supported via the Powerful Geography Year 12 Authors Blog where Teaching programs and relevant commentary and advice are being provided.



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Teacher support, video links and general comments about teaching the course https://powerfulgeography.weebly.com/

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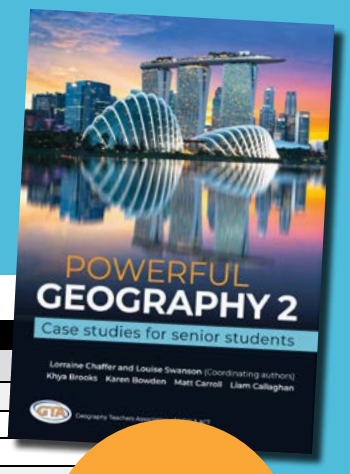
POWERFUL GEOGRAPHY 2: A Guide to Case Studies



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POWERFUL GEOGRAPHY 2: YEAR 12 *Potential Differentiation **Potential Fieldwork

CASE STUDY	Where you can use this content
GLOBAL SUSTAINABILITY (GS)	
Small case studies / GEOstories	
Avocado production in Mexico	Influences on economic activities
Benefit sharing Agreement: The San peoples	Marlinja, Salmon, Bananas
Major case studies	
Banana Industry **	Global economic activity
Salmon Aquaculture **	Global economic activity
Fashion **	Global economic activity
Supporting concepts / Visualise This	
Criteria for evaluating industry sustainability	Banana, Salmon, Fashion & Avocado studies
Pillars of sustainability	Banana / Salmon / Fashion & Avocado studies
A Circular economy	Salmon /Fashion studies
Sustainable Development Goals	Salmon / Benefit sharing.
Benefit sharing	The San peoples, Banana Industry, Marlinja (RUP)
ECOSYSTEMS and GLOBAL BIODIVERSITY (EGB)	
Small case studies / GEOstories	
The Okavango Delta *	Nature and complexity of biodiversity / ecological and human stresses / strategies for management Comparative management study for Florida Everglades
Two communities: Traditional Ecological knowledge *	Role of Indigenous peoples in ecosystem management / Coral Triangle
Major case studies. * Option for Fieldwork	
Great Southern Reef: Kelp Forest Ecosystem (GSR) ** Comparative management- South Korea	Ecosystem case study in Australia * Comparative management – South Korea
Coral Triangle: Coral Reef Ecosystem (CT) Comparative management study – GBR**	Ecosystem case study overseas Comparative management – Australia *
Florida Everglades: Wetland Ecosystem (FEW) Comparative management- Okavango Delta	Ecosystem case study overseas Comparative management – Africa **Features of freshwater wetlands
Kosciusko National Park: Alpine ecosystem. (KNP) ** Comparative management- Greater Himalaya NP	Ecosystem case study in Australia * Comparative management- India
Supporting concepts / Visualise This	
Traditional ecological Knowledge	Role of Indigenous peoples in ecosystem management / CT, GSR
Feedback loops	GSR, CT, KNP
Tipping points	GSR, CT, FEW, KNP.
Shifting baselines	GSR, CT, FEW, KNP
Rewilding	Global biodiversity / Lake Eyre Basin (Year 11)
RURAL and URBAN PLACES (RUP)	
Small case studies / GEOstories	
Ljubljana, Slovenia. - European Green Capital - The Bee Path project	Strategies for the sustainable management urban places One successful initiative or project.
Malinga, Northern Territory - Solar farm and battery project	Strategies for the sustainable management of rural Places (remote). One successful initiative or project.
Wagga * - Managing urban salinity in Lloyd.	Strategies for the sustainable management urban places. One successful initiative / project.
Major case studies	
Bellingen **	One place in a rural setting
Green Square **	One place within a larger urban settlement.
Singapore	One large city over 5 million people
Supporting concepts / Visualise This	
Urban settlement patterns	Marlinja / Bellingen **
Urban hierarchies and spheres of influence	Bellingen ** / Singapore

The Harbour School Sydney

Incursions

Living Seawalls

Stage 5 Marine and Aquaculture Elective & Stage 5 Geography
Students learn about the processes and ecological functioning of intertidal zones and the importance of natural environments in providing important microhabitats. They explore human modification to environments, including reclamation, and learn about how eco-engineering such as Living Seawalls help to provide microhabitats in built environments.

Great Southern Reef

Stage 5 Marine and Aquaculture Elective
Stage 5 & 6 Geography
Students learn about the Great Southern Reef, human impacts impacting the GSR, responses and strategies implemented, and how research and innovation contribute to the management of the GSR.

Ecosystem Restoration

Stage 6 Marine
Stage 5 Geography
Students learn about the human impacts on marine environments, the concept of ecosystem restoration and examples of ecosystem restoration in Sydney Harbour.

Geographical Investigation

Stage 6 Geography
Students are led through the initial stage of the Geographical Investigation. Students receive in overview of fieldwork techniques and are led through how to iterate ideas, plan an investigation and collect data.

Excursions

Check out The Harbour School Sydney website to read about available excursions:

- Environmental Change and Management
- Living Seawalls
- Geographical Investigation
- Kelp Forests
- Darling Harbour
- Iron Cove

THE HARBOUR SCHOOL SYDNEY

Visit www.theharbourschoolsydney.com

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Advice To Contributors

Geography Bulletin guidelines

1. Objective: The *Geography Bulletin* is the quarterly journal of The Geography Teachers' Association of NSW & ACT Inc. The role of the *Geography Bulletin* is to disseminate up-to-date geographical information and to widen access to new geographic teaching ideas, methods and content. Articles of interest to teachers and students of geography in both secondary and tertiary institutions are invited, and contributions of factually correct, informed analyses, and case studies suitable for use in secondary schools are particularly welcomed.

2. Content: Articles, not normally exceeding 5,000 words, should be submitted to the GTA NSW & ACT Office by email editor@gtanswact.org.au. Submissions can also be sent directly to the editor: Louise Swanson (editor@gtanswact.org.au). Articles are welcomed from tertiary and secondary teachers, students, business and government representatives. Articles may also be solicited from time to time. Articles submitted will be evaluated according to their ability to meet the objectives outlined above.

3. Format: Digital submission in Word format.

- Tables should be on separate pages, one per page, and figures should be clearly drawn, one per page, in black on opaque coloured background, suitable for reproduction.
- Photographs should be in high resolution digital format. An indication should be given in the text of approximate location of tables, figures and photographs.
- Every illustration needs a caption.
- Photographs, tables and illustrations sourced from the internet must acknowledge the source and have a URL link to the original context.

Note: Please try to limit the number of images per page to facilitate ease of reproduction by teachers.

Diagrams created using templates should be saved as an image for ease of incorporation into the Bulletin.

All assessment or skills tasks should have an introduction explaining links to syllabus content and outcomes. A Marking Guideline for this type of article is encouraged.

4. Title: The title should be short, yet clear and descriptive. The author's name should appear in full, together with a full title of position held and location of employment.

5. Covering Letter: As email with submitted articles. If the manuscript has been submitted to another journal, this should be stated clearly.

6. Photo of Contributor: Contributors may enclose a passport-type photograph and a brief biographical statement as part of their article.

7. References should follow the conventional author-date format:

Abbott, B. K. (1980) *The historical and geographical development of Muswellbrook* Newcastle: Hunter Valley Press.

Harrison, T. L. (1973a) *Railway to Jugiong* Adelaide: The Rosebud Press. (2nd Ed.)

8. Spelling should follow the Macquarie Dictionary, and Australian place names should follow the Geographical Place Names Board for the appropriate state.

Refereeing

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