



ENVS3241

Active Environments

Session 3, Special circumstance 2020

Department of Earth and Environmental Sciences

Contents

General Information	2
Learning Outcomes	2
Assessment Tasks	3
Delivery and Resources	6
Unit Schedule	7
Policies and Procedures	8
Changes from Previous Offering	10
COVID-safe plan	10
Fieldwork	11

Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face and online activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff

Convenor

Paul Hesse

paul.hesse@mq.edu.au

Contact via email

12WW 430 (level 4)

Credit points

10

Prerequisites

(130cp at 1000 level or above) and permission by special approval

Corequisites

Co-badged status

Unit description

This is a Session 3 unit that explores the active environments of the South Island of New Zealand. On an 11 day fieldtrip in December, landscape dynamics in tectonically, glacially and fluvially active landscapes are examined. The geomorphology and Quaternary evolution of the systems are contrasted with those of the Australian landmass examined in other units in Earth and Environmental Sciences courses.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Demonstrate field skills, including (a) describe and sketch soil and sediment sections in the field using standard methods, (b) take clear and comprehensive field notes using standard approaches, (c) survey topography (tape and clino), compute and plot data, (d) analyse hydrology using river styles and river planform description/ classification, measure and interpret dissolved, suspended and traction load of rivers, (e) identify hazards associated with mountain landscapes.

ULO2: Demonstrate your ability to 'Read the landscape' through morphodynamic

description and analyses, and through geomorphic mapping in GIS.

ULO3: Analyse numerical data using statistical tools.

ULO4: Demonstrate critical thinking in your reading of the literature and interpretation of your own data.

ULO5: Design a field research project including data gathering and interpret your own data.

ULO6: Communicate scientific information and concepts through oral, visual and written formats.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>A4 Handout</u>	10%	No	2/12/20
<u>Oral Presentation</u>	10%	No	2/12/20-9/12/20
<u>Field Report</u>	50%	No	12/12/20
<u>Field notebook</u>	30%	No	11/12/20

A4 Handout

Assessment Type ¹: Literature review

Indicative Time on Task ²: 15 hours

Due: **2/12/20**

Weighting: **10%**

Each student will explain and illustrate a topic using no more than one (1) A4 sheet of paper (using both sides, and listing any references you cite). You should have read and cited at least 3 primary, peer-reviewed sources. Assessment will be on the clarity and quality (accuracy, relevance, currency, organisation) of the 1-sheet handout.

On successful completion you will be able to:

- Demonstrate critical thinking in your reading of the literature and interpretation of your own data.
- Communicate scientific information and concepts through oral, visual and written formats.

Oral Presentation

Assessment Type ¹: Presentation

Indicative Time on Task ²: 2 hours

Due: **2/12/20-9/12/20**

Weighting: **10%**

Each student will also give a 5 minute oral presentation on their topic, in the field and using only their 1 sheet (single or double-sided) handout and the landscape as resources. This will occur at intervals throughout the first four days of the trip. Assessment will be on the clarity and quality (coherence, audibility, use of resources, ability to answer questions) of the oral presentation. This will be *peer-assessed* (i.e. you will grade, and be graded by, your classmates). Your grade will be adjusted according to how many peer marks you return (i.e. full marks if you mark all your peers; half marks if you mark only 50% of your peers).

On successful completion you will be able to:

- Demonstrate your ability to 'Read the landscape' through morphodynamic description and analyses, and through geomorphic mapping in GIS.
- Demonstrate critical thinking in your reading of the literature and interpretation of your own data.
- Communicate scientific information and concepts through oral, visual and written formats.

Field Report

Assessment Type ¹: Report

Indicative Time on Task ²: 25 hours

Due: **12/12/20**

Weighting: **50%**

Using the data collected during your fieldtrip, prepare an individual scientific report or conference-style presentation on your project. You will use the group data collected in the field and made available on the fieldtrip. You should treat the numerical data in a statistical manner to see whether or not your interpretations of the data are justifiable. This assignment will incorporate reference to relevant available literature and your field data to form a detailed understanding of that environment. All reports will be assessed on the evidence of accurate data gathering, accurate interpretation, critical analysis in relation to literature, clarity and suitability of the design of the project, insight of geomorphic interpretations of the data and clarity, structure and accuracy of the presentation.

On successful completion you will be able to:

- Demonstrate field skills, including (a) describe and sketch soil and sediment sections in the field using standard methods, (b) take clear and comprehensive field notes using standard approaches, (c) survey topography (tape and clino), compute and plot data, (d) analyse hydrology using river styles and river planform description/classification, measure and interpret dissolved, suspended and traction load of rivers, (e) identify hazards associated with mountain landscapes.
- Demonstrate your ability to 'Read the landscape' through morphodynamic description and analyses, and through geomorphic mapping in GIS.
- Analyse numerical data using statistical tools.
- Demonstrate critical thinking in your reading of the literature and interpretation of your own data.
- Design a field research project including data gathering and interpret your own data.
- Communicate scientific information and concepts through oral, visual and written formats.

Field notebook

Assessment Type ¹: Field book

Indicative Time on Task ²: 20 hours

Due: **11/12/20**

Weighting: **30%**

You must submit your field notebook for assessment at the end of the fieldtrip. This field book should contain all your observations made throughout the trip, including your group research project. You will be assessed according to (1) completeness, (2) accuracy, (3) clarity and (4) understanding of both notes and diagrams.

On successful completion you will be able to:

- Demonstrate field skills, including (a) describe and sketch soil and sediment sections in the field using standard methods, (b) take clear and comprehensive field notes using standard approaches, (c) survey topography (tape and clino), compute and plot data, (d) analyse hydrology using river styles and river planform description/classification, measure and interpret dissolved, suspended and traction load of rivers, (e) identify hazards associated with mountain landscapes.

- Demonstrate your ability to 'Read the landscape' through morphodynamic description and analyses, and through geomorphic mapping in GIS.
 - Analyse numerical data using statistical tools.
 - Design a field research project including data gathering and interpret your own data.
 - Communicate scientific information and concepts through oral, visual and written formats.
-

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Aims of the fieldtrip:

(refer also to the learning outcomes)

Themes: How do bushfires affect soil erosion? How have long-term geomorphic processes given us the landscape we see today? How have glacial and periglacial processes affected alpine landscapes in Australia?

We want to introduce you to a range of geomorphic processes which occur over a range of timescales. However, we will concentrate on understanding the role of fire in the Australian landscape, particularly how it affects erosion processes. We will examine this at two sites: the Snowy Mts (at Guthega) and the South Coast (at Belowra). We will examine a range of factors which may affect fire severity, post-fire erosion, and recovery. You will write a report on this topic utilising results gathered on the fieldtrip.

We will also teach you a number of field skills, some of which you have had some introduction to and some which will be new to you. Some of these will be ones you missed out on in S1 this year and some are specific to this particular research problem.

The topics for the individual Oral Presentations and A4 Handouts are designed to give you background information on the topic, mostly within the first few days of the fieldtrip. The field book is where you record your own observations of the sites you visit throughout the trip. The research report will be your presentation of the results and analysis of the main question 'How do bushfires affect soil erosion?' in the format of a scientific report or presentation.

What is required to complete this unit satisfactorily?

Attendance: (fairly obvious) you have to turn up to complete the unit

Assignments: you must hand in/complete ALL the assessment tasks to complete the unit

Attitude: look, read, ask, discuss, debate, enjoy (it's an amazing landscape to be in)

Quality: your assessment items will be graded according to your achievement of the learning outcomes. We are looking for deep understanding as well as competence in particular skills of data collection, analysis, interpretation and presentation.

Honesty and sharing: you will often work in groups but all the assessment tasks are individual. Group data must be shared freely but presentation, writing up and interpretation are to be the efforts of each individual. Macquarie's procedures relating to **academic honesty** and **plagiarism** can be found at http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

Required and recommended readings

There are no set texts or readings. You must research the topic of your A4 handout and oral presentations using peer-reviewed scientific literature. On-line materials should also be peer-reviewed and fully references wherever possible.

You are asked to write your final report in the field. Bring the papers that you have found so we can pool them to create a mobile working library.

Technology used and required

We will be working in a remote environment – both remote from help and remote from Macquarie Uni – and this imposes some limitations on the technology we can use (i.e. what we can carry).

We will use mostly very simple technology in the field. **What you should buy and bring:** hand lens; camera; notebook; calculator; USB memory stick **What we will provide that you must carry:** augers, survey equipment, spades etc, tape measures, GPS, geological hammer, grain size card, safety equipment.

If you have a **laptop computer** you will find it useful for producing your report. Some are available for loan from Department of Earth and Environmental Sciences. If you need to borrow one of these laptops, please contact Paul and arrange for pickup before the field trip. Remember that ArcGIS only runs on Windows. If you have a Mac you can (potentially) partition your hard drive and install windows (at cost) on one side (using bootcamp to switch between operating systems), enabling you to install ArcGIS.

For your pre-field A4 report you are expected to undertake research using on-line research databases and electronic journals and other resources. Internet will be limited or unavailable in the field.

Unit Schedule

Timetable and Itinerary

Pre-field meeting (date TBD): We will hold a field safety induction session before the fieldtrip. We

have also continued to work on improving GIS skills. This includes a day of safety induction, orientation and mapping on campus before the fieldtrip and a separate software installation clinic for those who need it. The map data will help orient you to the field area and the GIS skills will be useful to you when you are doing your research project and report in the field.

Wed 2nd Dec: Sydney to Kosciuszko (Guthega).

Thurs 3rd Dec: Blue Lake – Kosciuszko loop walk, glacial geomorphology

Fri 4th Dec: Guthega, impacts of burning on alpine vegetation and erosion

Sat 5th Dec: Drive to Belowra via Bega; supermarket shop and refuel in Bega

6th – 8th Dec: Work on field projects in Belowra area (upper Tuross River).

Wed 9th Dec: Drive to Kioloa; supermarket shop and refuel in Moruya

Thurs 10th Dec: Around Kioloa/Murramarang, stabilization of foredunes

Fri 11th Dec: Write up field report.

Sat 12th Dec: Hand in report, return to Sydney

Notes:

Day 1 (2nd Dec): Meet at Macquarie University 7am. Drive via M2/M7/M5 to Sutton Forest Rest Area, then to Lake George, Canberra, Numeralla, Cooma, Jindabyne, Guthega. We will be working on the way (oral presentations; note-taking) so you must be prepared for these activities.

Day 11 (12th Dec): You must submit your field report by 9am, then clean up and check out by 10 am and you are free to return to Sydney at your own pace.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you

need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

The main change is from New Zealand to Australia. Consequently, some of the themes have also changed. For example, we will look only briefly at glacial landscapes but we will concentrate on the impact of fire on erosion processes.

In light of events in S1, we will also spend time teaching key field skills not covered this year.

We have retained all the assessment tasks but the A4 handout/oral presentation has changed slightly to concentrate on key papers (and then expand on them). The field report is on a defined topic, rather than one determined by each group.

COVID-safe plan

COVID-safe plan:

The University has given permission for this fieldtrip to take place according to strict conditions to limit your exposure to COVID from other members of the group and members of the public, as well as to limit the potential for you to pass COVID to anyone else.

By participating in this fieldtrip you agree to abide by these conditions

General principles:

1. travel in private cars with max 2 people (sanitiser provided);
2. fieldwork in groups of 4 (max), sanitiser provided, equipment stays with group;
3. accommodation according to work groups in self-catering apartments or camping;
4. large group (teaching) settings – all work groups to be distanced from each other, wear masks;
5. public situations – all members to wear masks, use sanitiser, maintain distancing and minimise contact and duration. Gloves to be worn where contact may be involved (e.g. refuelling).

COVID-Safe Emergency Response Plan

Scenario 1: a member of the field party develops COVID symptoms

Response: immediately isolate member from group. Contact local medical authorities for advice (which may include testing), and/or Coronavirus Health Information Line 1800 020 081 (general information), and/or Healthdirect Hotline 1800 022 222 (registered nurse). Terminate trip and

prepare for return to Sydney – maintaining strict isolation and hygiene.

Scenario 2: a cluster is identified in the field area

Response: reduce (already minimal) contact with non-group individuals unless absolutely essential (emergency medical, food, fuel). Contact local police and/or Coronavirus Health Information Line 1800 020 081 (general information) for travel advice and prepare to leave if advised.

Scenario 3: an area goes into lockdown, travel restrictions change.

Response: contact local police and/or Coronavirus Health Information Line 1800 020 081 (general information) for travel advice and prepare to leave if advised. Observe all police directives.

Emergency Health contacts:

From Guthega/Kosciuszko

Cooma Hospital, Bent St Cooma, 02 6455 3222 (62 km, 45 mins)

(Jindabyne Health One, 5 Thredbo Terrace, 02 6457 1221)

From Belowra

Bega, South East Regional Hospital, 4 Virginia Drive, 02 6491 9999 (91 km; 1:40 hrs)

From Kioloa

Milton Ulladulla Hospital, 104 Princes Highway, Milton, 02 4454 9100 (38 km; 35 mins)

Fieldwork

Cost

Accommodation (paid to University before the trip): \$200 – 300 (tbc)

Food – covered by you. There are cooking facilities available (and no opportunity to eat out).

Transport – private vehicle (2 people per car): we'll organise car pooling and you can share the costs

Kosci NP entry – payable on entry to Park if you don't have a pass already (\$17 per vehicle per day x 3 days).

Accommodation

We have booked all accommodation for the fieldtrip. You will be asked to pay the final amount (once confirmed) to the University (online).

We have exclusive use of the venues, which is part of the COVID-safe strategy approved by the University. Guthega and Belowra are quite isolated. You will not be able to eat out or go shopping at any of these locations (as part of the University-approved conditions).

Guthega (3 nights) – Australian Ski Club Guthega Lodge. Twin rooms. Shared kitchen.

Belowra (4 nights) – Camping. You will need a tent, sleeping bag, some cooking gear (more

detail later). There will be a pit toilet. No showers. We will be able to swim in the river.

Kioloa (3 nights) – Kioloa Beach Holiday Cabins. 3 people per cabin. Own kitchen, shared bathrooms.

Personal field equipment required

Each student should bring the following aids/comforts on each field trip:

- sturdy shoes ('no visible skin below the ankles')- sandals, thongs, or high heels are for après-field activities
- an extra pair of shoes for getting wet in rivers
- water bottle (full, of course!)
- wet weather gear – a waterproof jacket with a hood and waterproof pants
- hat (with a wide brim, front and back) and sunscreen
- field note book and pencils (see note below)
- calculator, hand lens
- camera; binoculars (if you have them)
- your lunch, drinks & snacks for the day - we do not stop at shops!!!
- a back pack to store it all in
- any medications you may need. We cannot provide you ANY medications (even paracetamol).
- Camping equipment (more later)

Other personal items

cooking/eating – we will have cooking facilities at Guthega and Kioloa. You will need cooking equipment while camping.

towel/toiletries – bring these.

Fieldwork fundamentals

Weather: We never cancel fieldtrips for bad weather! You must be prepared to work in the rain with the appropriate clothing. Likewise you should always protect yourself from the sun and dehydration.

Transport: Because of COVID restrictions, transport must be by private vehicle, each carrying a maximum of 2 people. We will arrange car-pooling for those without cars and you should then arrange to share costs.

Cost: You must cover your own food costs and pay for your transport. Prior to the fieldtrip you will be advised of the estimated cost for accommodation. You must pay this amount before leaving on the fieldtrip.

Accommodation: Field accommodation is in cabins, twin hotel-type rooms and camping with communal kitchens, dining, bathroom/toilet and work areas. You should bring a towel and bedding for camping.

Safety in the field

Any student who has a disability or health condition that may limit their participation in field work or that could result in a medical emergency in the field should notify the unit convenor immediately. As a general guide to the level of physical fitness required, you should be able to walk 10 km over open undulating terrain in 2 hours. You must accept the fieldtrip invitation in Field Friendly before the fieldtrip and complete your contact and personal details there.

Each student must ensure his/her own safety at all times during field excursions.

- Do not undertake fieldwork alone. You must work with at least one other person.
- You must be adequately equipped to undertake fieldwork, including wet weather clothing, warm clothing, hat and sun protection, protective footwear (closed toe boots or shoes).
- You should bring a first aid kit if you have one (basic kits will be provided to each group) and any medications you require.
- Do not undertake any activity you feel to be unsafe. Discuss with the fieldtrip leader any concerns you have about particular tasks.
- Be watchful of the safety of your fellow students, if they become separated from the group or are at some other risk. Tell the fieldtrip leader as soon as you notice a potentially dangerous situation.

Accommodation and contacts

Satellite phone (held by Paul Hesse):

Guthega: Guthega Lodge, Australian Ski Club (no phone)

Belowra: 'Belowra', Belowra Rd via Nerrigundah, 2545 (landowner phone number available from Paul Hesse or Sarah Collison in emergencies only; otherwise or instead, use satellite phone).

Kioloa Beach Holiday Cabins, 35 Scerri Dr, Kioloa, 2539. 02 4457 1095, 0410 414230,