Permafrost & Environmental Change (F8023A)

- Third-year geography option (open to BSc Geography, & BSc Geog, Sust Devt & CC)
- Autumn term 2026
- 30 credits
- No pre-requisites or co-requisites

Convenor & tutor

Prof. Julian Murton,
Chichester 1-148, e-mail:
j.b.murton@sussex.ac.uk

Source:International Permafrost Association, 1998.
Circumpolar Active-Layer Permafrost System (CAPS), version 1.0.

Permafrost & Environmental Change (F8023A)

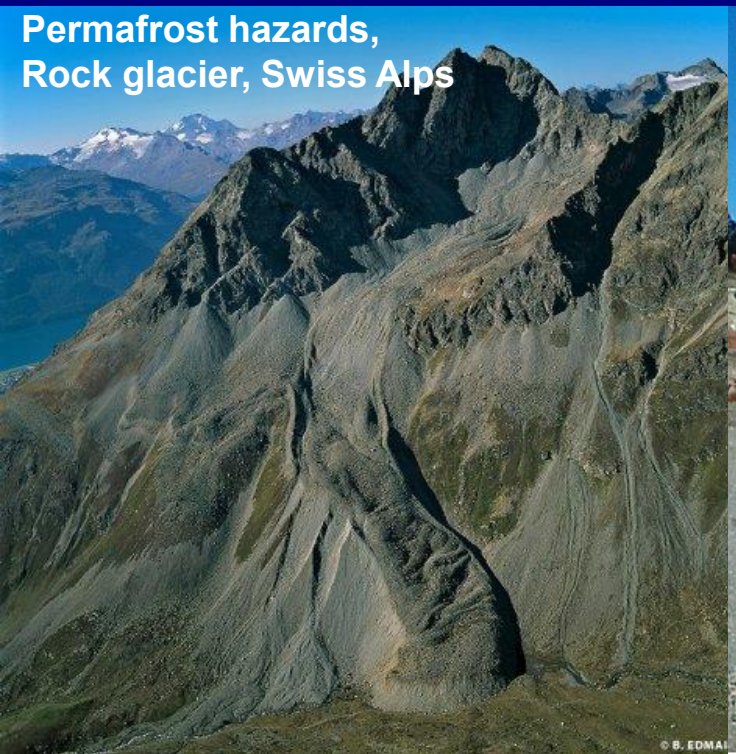
Summary:

Examines present and past permafrost regions from an interdisciplinary perspective, linking permafrost science with physical geography, geology, ecology, engineering & Quaternary science.

Aims:

(1) to provide a framework of knowledge and understanding of earth-surface processes and environmental change in permafrost regions;

(2) to consider problems and solutions of economic development and land management on modern permafrost terrain and past permafrost regions.



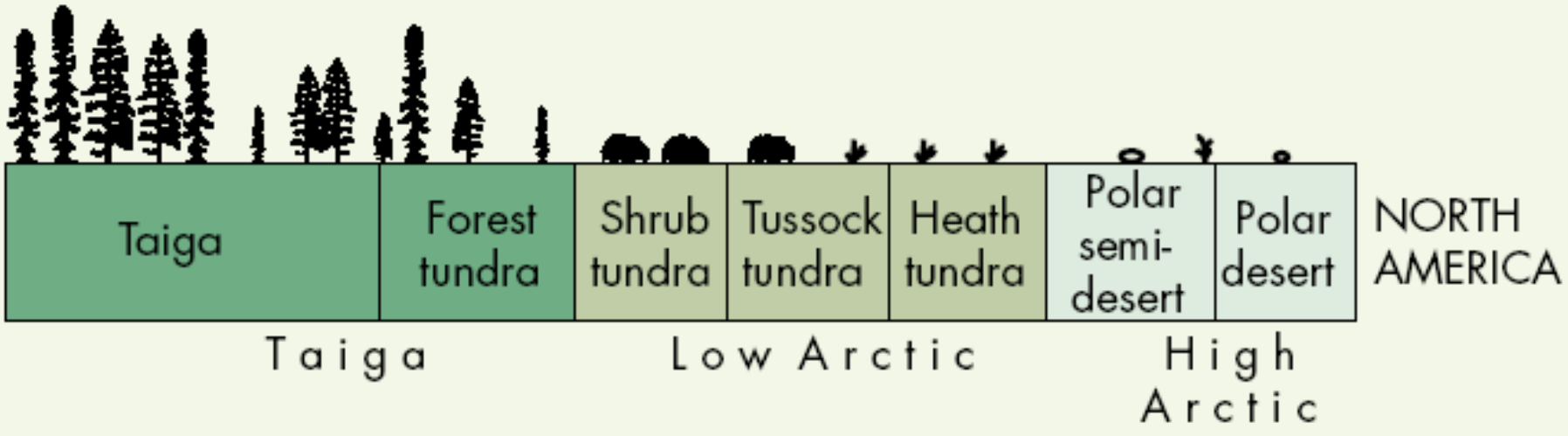
Permafrost hazards,
Rock glacier, Swiss Alps

Periglacial geohazards,
M25 Motorway stabilisation, near Junction 6

Permafrost & Environmental Change (F8023A)

Topics

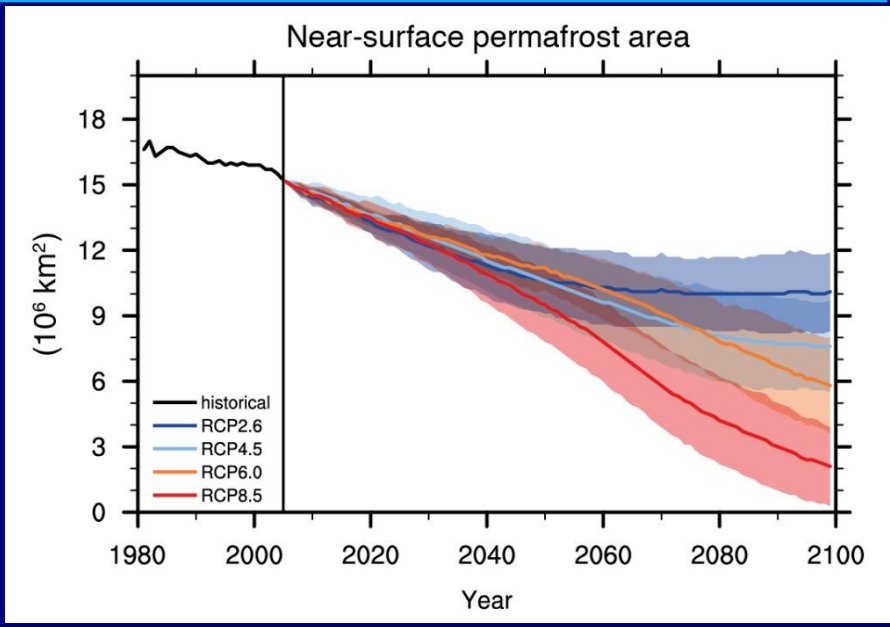
- Week 1: Introduction
- Week 2: Permafrost
- Week 3: Microclimate & ground thermal regime
- Week 4: Active layer & soil freezing
- Week 5: Ground ice & hydrology
- Week 6: Periglacial geomorphology
- Week 7: Permafrost geomorphology
- Week 8: Carbon, permafrost & climate
- Week 9: Permafrost geohazards & engineering
- Week 10: Pleistocene permafrost & periglacial environments
- Week 11: Periglaciation & periglacial geohazards



Permafrost & Environmental Change (F8023A)

Teaching and learning methods

- **Lectures**: x 22, each 2 hours, with a break in the middle
- **Practicals**: x 4, each 1 hour, in Teaching Lab



Assessment

- **Problem set (PRB)**: 2000 words, combining practicals 1 and 2, due week 6, 30% weighting
- **Report (REP)**: 2000 words, combining practicals 3 and 4, due week 11, 30% weighting
- **Unseen exam**: 2 hours, assessment period 1, 40% weighting

Week	1	2	3	4	5	6	7	8	9	10	11	Ass. Per. 1
Lectures	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	
Practicals		1 x 1 hr		1 x 1 hr			1 x 1 hr		1 x 1 hr			
Assessment						PRB (30%)					REP (30%)	EXAM (40%)

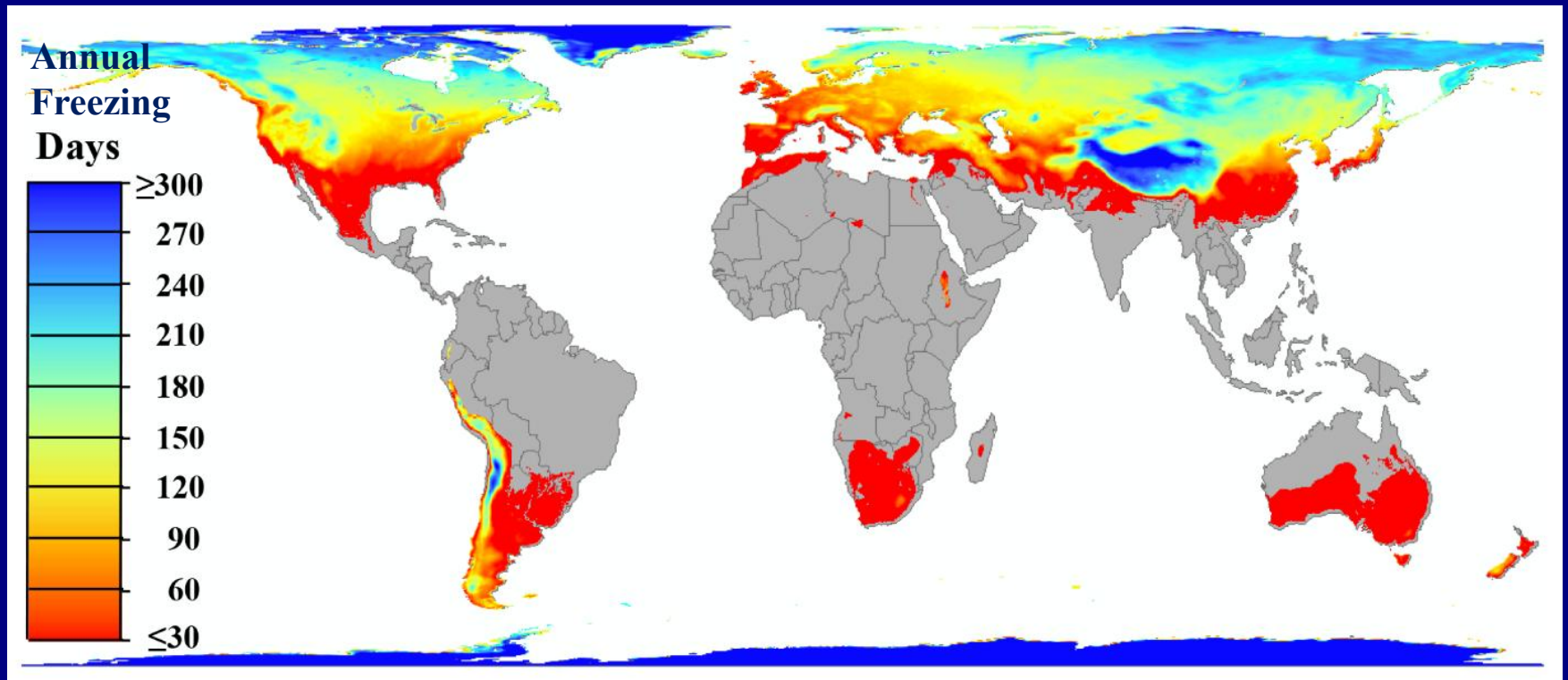
Permafrost & Environmental Change (F8023A)

Transferable skills

- **Data processing**
- **Data analysis**
- **Mapping / GIS**
- **Remote sensing**
- **Report writing**

⇨ Good for:

- Final-year project
- CV
- Careers in environmental consultancy & land management
- Applications for MSc courses



Permafrost & Environmental Change (F8023A)

Selling points

- **Small-group teaching:** usually <20 students
- **Research-led** content benefits from focus on internationally leading research
- **Interdisciplinary** approach encourages lateral thinking and mental flexibility