

Permafrost & Environmental Change (F8023A)

- Third-year geography module (open to BSc Geography)
- Autumn term 2022
- 30 credits
- No pre-requisites or co-requisites

Convenor & tutor

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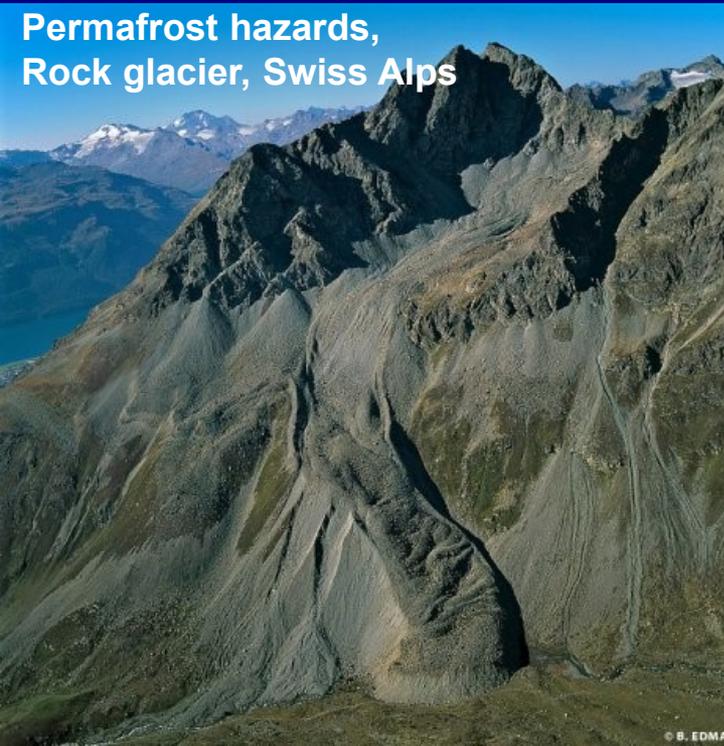
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Summary:

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

Aims:

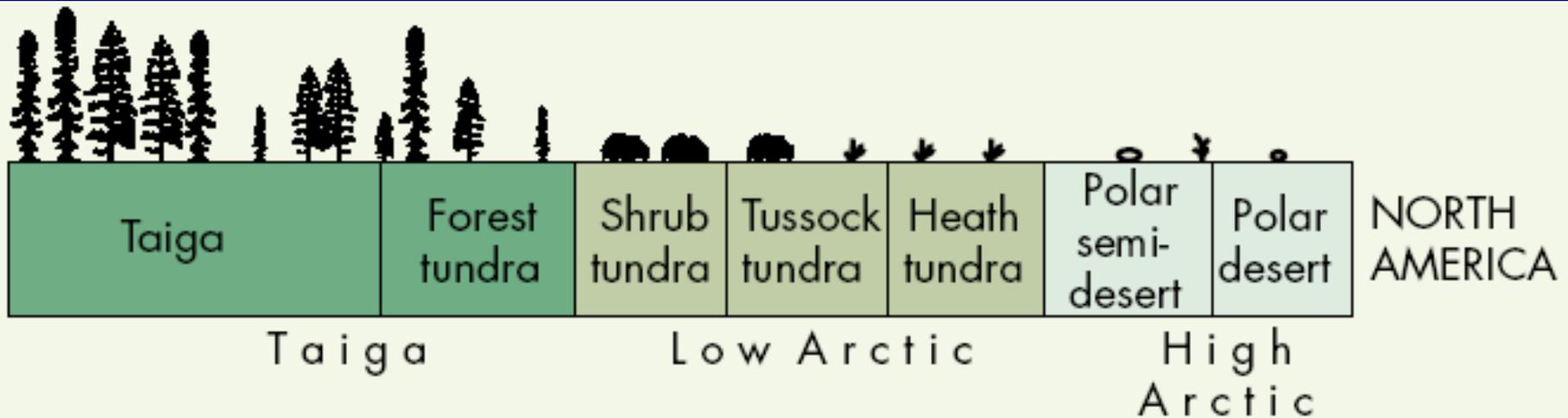
- (1) to provide a framework of knowledge and understanding of earth-surface processes and environmental change in permafrost regions;
- (2) to consider problems and solutions of economic development and land management on modern permafrost terrain and past permafrost regions.



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Topics

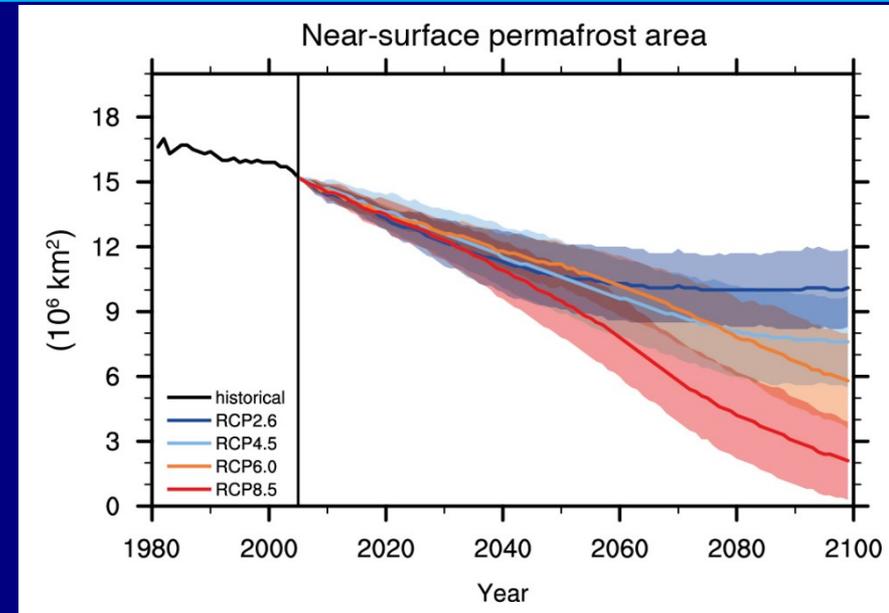
- Week 1: Introduction
- Week 2: Permafrost
- Week 3: Microclimate & ground thermal regime
- Week 4: Active layer & soil freezing
- Week 5: Ground ice & hydrology
- Week 6: Periglacial geomorphology
- Week 7: Permafrost geomorphology
- Week 8: Carbon, permafrost & climate
- Week 9: Permafrost geohazards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



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Teaching and learning methods

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



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
- **Distance exam (DEX):** 2 hours in 24-hour period, assessment period 1, 40% weighting

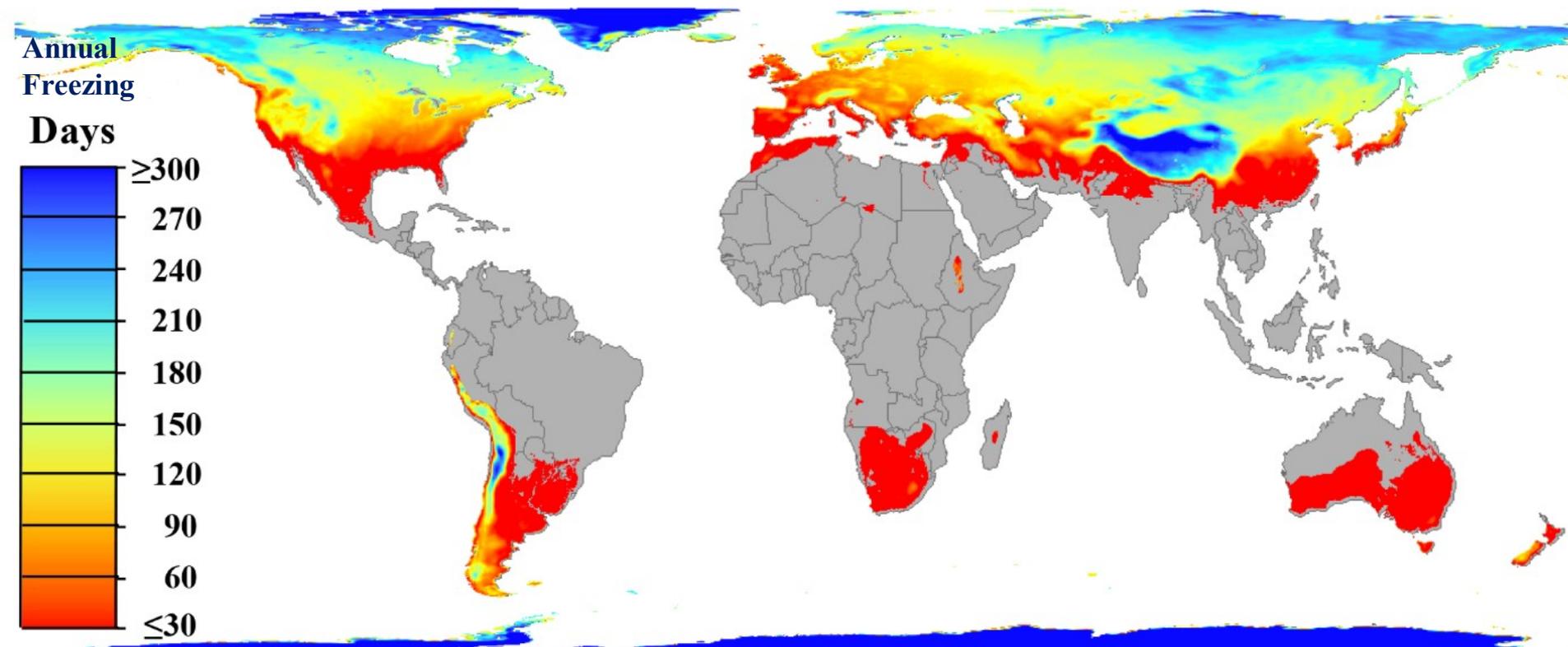
Week	1	2	3	4	5	6	7	8	9	10	11	Ass. Per. 1
Lectures	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr	2 x 2 hr						
Practicals		1 x 1 hr		1 x 1 hr			1 x 1 hr		1 x 1 hr			
Assessment						PRB (30%)					REP (30%)	DEX (40%)

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Transferable skills

- Data processing
- Data analysis
- Report writing

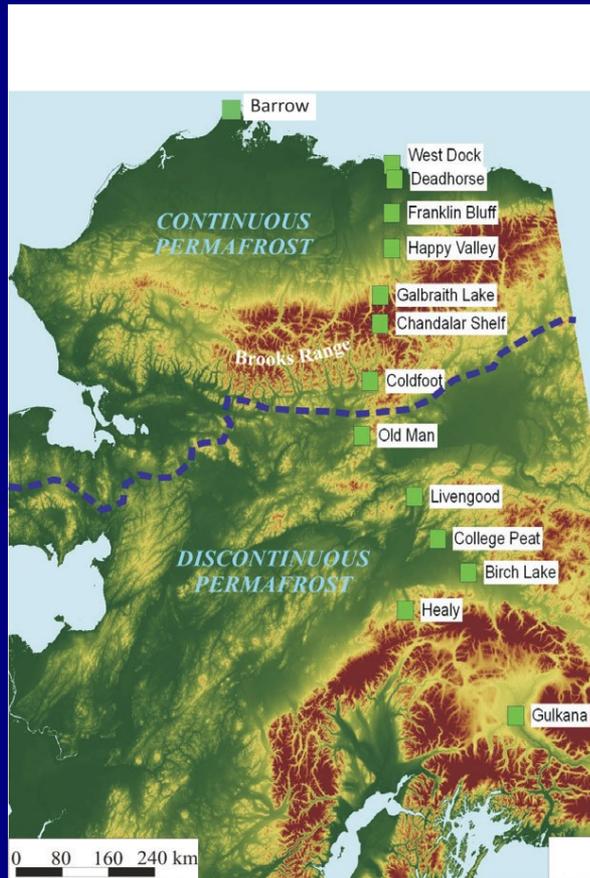
⇒ Good for CV, final-year project & applications for MSc courses or jobs in environmental / land management



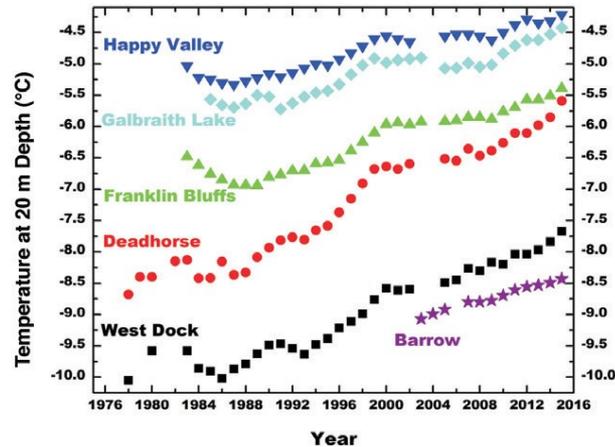
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Selling points

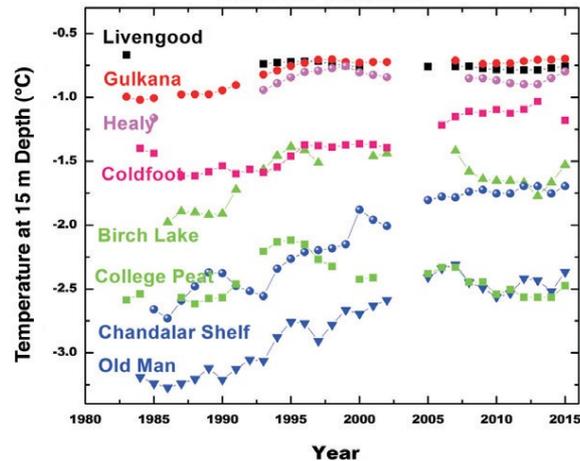
- **Small-group teaching:** usually <20 students
- **Research-led** content benefits from focus on internationally leading research
- **Interdisciplinary** approach encourages lateral thinking and mental flexibility



Northern Alaska



Interior Alaska



Annual Freezing