



# A classic reference work needs an update...

## Should these terms be added?

(comments and suggestions welcome)

Abrupt thaw  
Antisynthetic ice wedge  
Climate-driven permafrost  
Climate-driven, ecosystem-modified permafrost  
Climate-driven, ecosystem-protected permafrost  
Cryoconditioned  
Cryofacies  
Cryostratigraphy  
Cryostructures  
Ataxitic/Suspended  
Crustal  
Ice-poor  
Interstitial  
Layered  
Lenticular  
Massive  
Micro-lenticular  
Reticulate  
Debris island  
Ecosystem-driven permafrost  
Ecosystem-protected permafrost  
Electrical resistivity tomography  
Freezing characteristic curve  
Frost tube  
Frozen debris lobe  
Gas outburst crater  
Ice saturation index  
Intermediate layer  
Interstitial ice  
Lithalsa  
Megaslump  
Methane crater  
Mud ejection  
Near-surface permafrost  
Nival offset  
Offshore pingo  
One-sided freezing  
Permafrost carbon feedback  
Polar desert  
Plug  
Saturation ratio  
Surface offset  
Thermal disequilibrium  
Thermal offset  
Transient layer  
Transition zone  
Trumpet curve  
TTOP model  
Two-sided freezing  
Water track  
Yedoma deposit

## Revising and updating the *Glossary of Permafrost and Related Ground-Ice Terms* A CPA project

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### Background and Objectives

The CPA Permafrost Terminology Action Group (PTAG) was formed in 2021. The 13 members (see author list) come from academia, government and industry and include permafrost scientists and engineers at a range of career stages.

PTAG goals are:

1. To update the *Glossary of Permafrost and Related Ground-Ice Terms* to reflect current usage in the definitions, add new terms, and update the references. The updated version should be suitable for controlled vocabularies and ontologies.
2. To create an illustrated plain-language version of the most commonly used terms for education and outreach.

PTAG is committed to operating by consensus and communicating transparently with the broader community.

### Process

Each existing term and its definition is currently being reviewed in detail by at least two members of PTAG in relation to several criteria, including:

- Is it formulated as a term?
- Is the term unique?
- Is the term still in use or is there an alternative?
- Is the term thematically relevant to the *Glossary*?
- Is the definition and accompanying text clear and unambiguous?

Each term will subsequently be examined by every member of PTAG so that an informed consensus can be reached. Changes to existing terms will be traceable.

Potential new terms (see list to left) will be treated similarly.

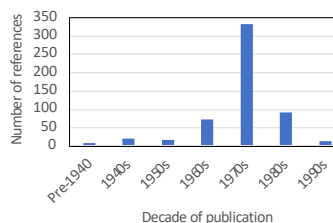
### Next steps

- PTAG will meet regularly over the next year in order to systematically work through the entries.
- Our goal is to complete an initial draft of revisions for comment in time for the CPA Annual Meeting in Dawson in fall 2022.
- Progress reports will be made at other relevant meetings to give the Canadian and international permafrost communities, as well as researchers in cognate fields, the opportunity for feedback.
- Publication of the revised *Glossary* and the plain-language version is planned for the Whitehorse ICOP in 2024.

### Current state of the *Glossary*



Word cloud of terms listed in the 1998 version.



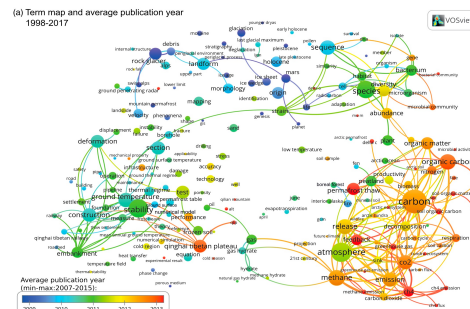
Decade of publication

Categorization of definitions in the 1998 version

| Subject/discipline | Number of entries |
|--------------------|-------------------|
| Permafrost         | 86                |
| Active layer       | 20                |
| Ground ice         | 38                |
| Thermokarst        | 19                |
| Talik              | 17                |
| Periglacial        | 98                |
| Engineering        | 41                |
| Geophysics         | 4                 |
| Natural science    | 69                |
| Hydrogeology       | 5                 |

Temporal distribution of references in the 2005 version. The peak in the 1970s reflects the 1988 publication date of the first version. One goal of PTAG is to update the references.

### Changes in the permafrost field



Bibliometric term map of permafrost science research, 1998-2017.  
From Sjöberg et al. (2020). Hot trends and impact in permafrost science. *PPP*, 31(4) 461-471. DOI: 10.1002/ppp.2047

The widespread interest in permafrost science and engineering is not always reflected in the terms defined in the *Glossary*. For example, terms such as *permafrost carbon feedback*, *abrupt thaw* and *near-surface permafrost*, are not currently listed.

### Conclusion

- Significant growth and broadening of permafrost science and engineering has occurred over the past 30 years. These changes need to be reflected in the *Glossary of Permafrost and Related Ground-Ice Terms*.
- New terms must be clearly defined and, where appropriate, older definitions should be amended to reflect current usage. References also need to be updated.
- The CPA Action Group is making good progress with these tasks. Publication is planned for 2024.

### We'd like to hear from you:

If you have comments or suggestions for additions or revisions to the *Glossary*, please contact the PTAG Chair by email at: alewkowi@uottawa.ca

Existing terms and potential illustrations for the future plain-language version of the *Glossary of Permafrost and Related Ground-Ice Terms*.

