

The NSERC PermafrostNet Project Summary Guide



Photo credit: Derek Cronmiller

v 1.0

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1. About the Project Summaries

NSERC PermafrostNet has a mandate to share the discoveries and findings made in the research projects it funds.

Project Summaries communicate next practice and are an important network output. They make progress in research and next practice broadly visible and accessible.

This guide is intended to help you draft project summaries, using the word template and provides summary additional information and links to help you collect and present the information you will require.

Project summaries should be written in English, and they will be translated into French and local languages, where appropriate and useful. If you are fluent in French, you may submit both English and French versions of your Project Summary.

The design of the Project Summaries has been guided by the Knowledge Mobilization and Communication Committee (informed by people at NWT Geological Survey, Aurora Research Institute, and Wilfrid Laurier University's Yellowknife Office), Stephan Gruber, Nick Brown and a focus group of graduate students. The tools, designs and guidance for the project summaries are currently being iteratively developed and feedback that may improve them is welcomed.

2. Content

All the Project Summaries are designed to fit on to two pages. Network projects may create more than one summary, but they should be distinct summaries. The project summaries should be able to stand alone as discrete resources i.e., the summary should provide enough information for the reader to understand the key points of your project.

Below are a list of items to be included in your project summary, with guidance and suggestions on the content:

Page 1

- **Title**
 - The title should clearly and simply state the key finding presented in the summary. You may produce more than one summary document for your project, therefore ensure the title is specific to the finding covered in the two-page summary.
 - The title should be in simple accessible language, avoiding acronyms, and technical terms.
 - **20 words.**
- **Authors**

- The authors should be listed in paper style in terms of their order and their affiliations should be listed.
- Authors should include yourself, your supervisors and anyone else involved in the project, who has also helped write the summary. You do not need to include members of NSERC PermafrostNet, or collaborators unless they have been involved in writing the summary, you can include them later.
- **20 words**
- **Keywords**
 - Please refer to the cryosphere glossary at NSIDC for permafrost and other cryosphere keywords. <https://nsidc.org/learn/cryosphere-glossary>
 - For other standardised keywords refer to the glossary in appendix 2 at the end of this guide.
 - **10 words**
- **Study location(s)**
 - The two-page summary will include a small map.
 - Further details on providing information for the map are provided in the next section of this guide.
 - Provide a 20-word narrative description of the location or region your study covered.
 - **20 words**

The **Next Practice** and **Research summary** form the most substantial content for the project summary. Below are guidelines on writing the content. These are guidelines to ensure that the required information is included and is presented in an easy to follow and consistent sequence. This guidance is not prescriptive, and as long as the information is included, stays within the word limits, and is clear and easy to follow then you can write the summary to suit your project.

- **Next practice** (no subheading shown)
 - One or two sentences that explain next practice – what we can now do or understand that we could not before e.g. “This research now enables us to”
 - One or two sentences that explain why that is important e.g. “This is important because”
 - One or two sentences that describe an example of how this research could be used and by whom e.g. “For example, ...”
- One figure or image: focus on application rather than research process, explain with a good caption. At least one figure is required, more figures if useful and feasible may be added.
 - **Max. 100 words.**
- **Research summary** (subheading)
 - One or two sentences that introduce the basic, general problem.
 - One or two sentences that explain the specific problem solved.
 - One sentence explaining what was done here.
 - One sentence explaining how it was done (methodology).
 - One to three sentences explaining the results.

- One or two sentences putting the results into context (New? Surprising? Incremental or ground-breaking?).
- One to three sentences that explain how the next practice described in the first sentence arises from the results.
- **Max. 150 words.**

Page 2

- **Taking action**

- This paragraph provides next steps to address issues caused by thawing permafrost.
- Provide specific information and actionable steps.
- Three to four sentences.
- **Max. 150 words**

- **Connections to other projects/techniques/etc.**

- This box describes connections to other projects and themes.
- Icons are provided to enable quick and easy identification of linked Themes.
- **Max. 50 words**



- **Partners, team members and support**

- One to three sentences describing how partners, additional team members such as Northern Research Assistants or technicians, partnership such as shared fieldwork etc. enabled this research.
- Add a personal touch as appropriate.

Affiliations:

- your university
- NSERC PermafrostNet
- Northern organizations.
- **Max. 100 words**

- **Acknowledgment, thanks and funding**

- Include a sentence thanking the community /territory who provided assistance.
- Include a sentence acknowledging the land and rights holders where this research was located.
- Include details of the funding that supported the project.
- “This work was supported by the Natural Sciences and Engineering Research Council of Canada (NSERC), NSERC PermafrostNet and [INCLUDE ADDITIONAL FUNDING HERE].”
- **Max 100 words**

- **References**

- Include papers, theses or links to other media and information such as data, code or video files that were published from this project.

- Where available, include a DOI or other persistent identifier for each reference.

Requirements

Word limits

The project summaries have a two-page space limit. To help you fit your project summary into two pages and cover the key points there are word limits for each section. Ensure that the total summary does not exceed 750 words.

- Title = 20 words
- Keywords = max 10 words
- Study locations = 20 words
- Next practice = 100 words
- Research summary = 150 words
- Taking action = 150 words
- Connections to other projects = 50 words
- Partners, team members and support= 100 words
- Acknowledgment, thanks and funding= 100 words
- References = 50 words

Considerations

The following considerations will make your project summaries accessible and as useful as possible.

- Use language that is understood broadly and appropriate for the most important target audiences.
- Aim for text that will still be useful in 20 years.
- Aim for being relevant broadly across the permafrost regions of Canada and beyond.
- Ensure the colours used in any images are accessible. You can read about accessible colours in [this blog post](#) and use [this tool to check colours](#) in your images.
- Provide additional information about the target audiences the Project Summary is relevant for. Audiences will be used to index the Project Summaries and help people find the right information.
- All links must use DOI or other persistent identifier (supplementary info, data, code must be published in journal, data repository, or with Library)
- Page numbers do not need to be added (when the collated book of project summaries is created page numbers will be added).

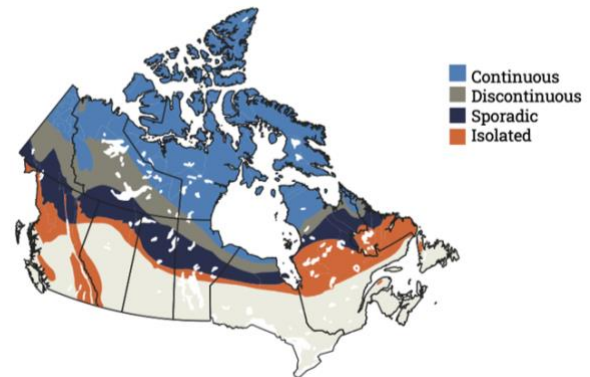
3. Maps

Each Project Summary will feature a map showing either where the research was carried out, or where it is relevant to. The map will feature in the top right of each Project Summary.

Depending on the research project the map will either cover Canada or show a more localised region. For studies that are not site specific an alternative shading palette on the map will indicate areas of relevance.

The map will display continuous, discontinuous, sporadic and isolated permafrost, as shown below.

- Study location(s)
 - We have a spreadsheet that collates all the study sites of the research projects. Make sure that you have provided up-to-date and accurate details for Nick Brown to create the maps.
 - Write 3 sentences/ 500 characters on the geographic scope of their project.
 - Study locations will be indicated with red dots.



4. Branding

The Project Summaries will provide a consistent appearance and style to enable them to be more accessible and provide clear cohesion as networked research. To aid in achieving this they should follow the network's branding guidelines.

The network brand guide can be [accessed here](#).

Fonts

The project summaries use the fonts **Roboto** and **Roboto Slab**. The [Roboto font package can be downloaded here](#) and the [Roboto Slab package can be downloaded here](#).

Title: Roboto Slab bold 12 point.
Headings: Roboto Slab bold 12 point
Paragraphs: Roboto 11 point
Captions: Roboto Slab light 11 point

Colours

The network has four brand colours. The summaries will use standard black text. Where colour is required try to use the brand colours. The brand colour Hex codes, CMYK and RGB values are provided below, and further details are available in the branding guide.

Name Blue	Name Green	Name Orange	Name Navy
Hex Code #488DC2	Hex Code #726E60	Hex Code #CF5C36	Hex Code #1C2541
CMYK 62% 27% 0% 23%	CMYK 0% 3% 15% 55%	CMYK 0% 55% 73% 18%	CMYK 56% 43% 0% 74%
RGB 72-141-194	RGB 114-110-96	RGB 207-92-54	RGB 28-37-65

Logos

The network logo will feature in the bottom left of both pages of the Project Summary when produced as stand-alone documents.

5. Submissions

Submit the following to the Director of Operations:

1. A draft project summary using the Word template.
2. The summary text as a separate plain text file.
3. The local languages that the Project Summary should be translated into.
4. Location details for the map.
 - a. Check the spreadsheet of study locations and provide location details about your study sites.
 - b. Additionally, write 3 sentences/ 500 characters to explain the geographic scope of your project.
5. Any publications or theses associated with the project.
6. Images and/or photos as separate files.
7. Details of the source and/or copyright of any images.
8. Details of any information that has not been finalized e.g., a publication.

6. Editorial process

Producing the project summaries will have a number of editorial steps. These are detailed below in two main stages the **draft** and the **publication** cycles.

If the graduate student, or post-doctoral fellow has left the project and is unable to carry out the steps allocated to them the project supervisor (investigator) should carry out the steps e.g., drafting initial content.

Summary of Editorial steps

1. Draft written by project students or post-doctoral fellow.
2. Reviewed and edited by project supervisor, and other members of the team.
3. Draft text, images, study sites, languages and additional information submitted to NSERC PermafrostNet Director of Operations.
4. Map created by NSERC PermafrostNet Data Scientist.
5. Draft reviewed and copy edited by NSERC PermafrostNet Director of Operations and or Knowledge Mobilization specialist.
6. Draft reviewed and edited by NSERC PermafrostNet Scientific Director and/or Theme leads.
7. Project Summary translated.
8. DOI obtained by NSERC PermafrostNet Data Scientist.
9. Design and typesetting.
10. Final proofread by Scientific Director/Theme leads/project supervisor.
11. Publication.

Draft Cycle

The **Draft Cycle** is led by the key researcher (usually the graduate student or post-doctoral fellow) when results are taking shape and publication is anticipated.

1. Prepare draft, following the guidelines in this document.
2. Identify local languages for translation.
3. Share draft with (i) researchers and partners involved or affected, (ii) all network investigators, and (iii) the Director of Operations asking for comments. Include a deadline for responses (usually two weeks), specific questions if needed, and the reminder: *"This is work in progress shared inside our network. Please treat it as confidential until published"*.
4. After receiving comments and feedback, revise draft into final draft, add final results and links, identify links/references that are not yet final and who will be responsible for providing final information, and consult with team members and theme leads.
5. Confirm that all authors, team members and theme leads agree with content revisions. Include a deadline for responses (usually two weeks).
6. Send final draft to Director of Operations and Scientific Director. Note relevant issues that may remain contentious, and who raised them.

Publication cycle

The **Publication Cycle** is led by the Director of Operations and begins when receiving the final draft of a project summary.

1. The Director of Operations will carry out copy editing (reviewing and correcting the text for grammar, spelling, punctuation, consistency, readability, accessibility and style) and review the content for other issues e.g., copyright/creative commons licensing, links etc.,
2. The Director of Operations will identify and track non-final information or links.
3. The Scientific Director reviews content.
4. A Knowledge Mobilization expert will check the content is broadly understandable.
5. Professional translation.
6. The Data Scientist will obtain a DOI for the Project Summary.
7. Professional proof reading.
8. Typesetting and design for each language.
9. Final proof reading (by lead researcher, theme leads, scientific director).
10. The Project Summary will be uploaded to the NSERC PermafrostNet website and a long-term storage location.
11. The Project summary will be collated with other Project Summaries in the final compendium file.
12. Disseminated via news article on web site, newsletter, social media, emphasize existing communication channels of partners and other relevant organizations.

7. Compendium of Project Summaries

The Project Summaries will be collated in a book and combined with information about the network and themes. This booklet will be produced with links to Project Summaries in other local languages.

Part 1: Network and partnership

- Message from the Scientific Director (1 page)
- Message from the Chair of the Board (1 page)
- The network (to be written by the Director of Operations)
 - Key numbers and facts
 - Brief history
 - Governance
 - Funders, institutions, partners
- Permafrost in Canada (4-page synthesis)
- Considerations for building and applying permafrost knowledge in Canada.

Part 2: Network research

- Themes: Challenges, network innovation, next challenges to tackle (2 page each)
 - Characterization of permafrost
 - Monitoring of permafrost change
 - Prediction of permafrost change
 - Hazards and impacts associated with permafrost thaw
 - Adaptation to permafrost thaw.
- Project summaries (2 pages each)
- Index by target audience

- Index by keyword
- Index by author

Considerations

- Six Project Summaries will be produced for network review and discussion at the 2023 AGM in Victoria, BC.
- These six Project Summaries will be compiled into a special edition of Frozen Ground. The content will be provided to the IPA in January 2025, while the special edition will be distributed at ICOP in June 2024.
- Deadline for last project to be included in published version 1
- The **Compendium Editorial Cycle** will be led by Director of Operations so that it is available in June 2025.
- The compendium will have a stable DOI.
- The compendium will have full-page numbering.
- The final compendium will be produced digitally and printed for distribution (e.g., <https://www.northprint.ca/product-page/booklets-perfect-bind>).

Appendix 1: Responsibilities and Timelines

Role	Responsibility / Output	Timeline
Graduate student / post-doctoral fellow	Draft content, provide study locations, local languages for translation, links, and images. Share draft with researchers, partners involved or affected, all network investigators, and DoO. Provide details on outstanding info e.g., pending publications. Confirm that all authors, team members and theme leads agree with content revisions. Details relevant issues that may remain contentious, and who raised them. Send revised draft to DoO.	Ideally before leaving network. Deadline for revised drafts for Frozen Ground (1 st edition). Friday 13 October 2023.
Project supervisor	Proof reading i.e., reviewing draft and revised content (or drafting content).	Within two weeks of receiving drafts from the Graduate student / post-doctoral fellow
All network investigators	Reviewing first draft.	Within two weeks of receiving drafts from the Graduate student / post-doctoral fellow
Theme Leads	Reviewing revised draft and final proof reading.	Within two weeks of receiving drafts from the Graduate student / post-doctoral fellow
Scientific Director	Review of revised draft and final proof reading.	Within two weeks of receiving drafts from the Graduate student / post-doctoral fellow
PermafrostNet Director of Operations (DoO)	Map locations spreadsheet, proof reading, track non-final information. Manage the overall production of Project Summaries and Compendium.	Ongoing
PermafrostNet Data Scientist	Maps, DOIs.	Within two weeks of receiving map locations and translated final draft Project Summary.
Collaborators and partners	Reviewing draft and revised content for accuracy.	Within two weeks of receiving drafts from the Graduate student / post-doctoral fellow
Knowledge Mobilization expert	Copy-editing final draft.	Within two weeks of receiving final draft.
Translation company	Translation into French and local languages.	Within two weeks of receiving copy-edited draft.
Professional Proofreader	Proofreading the final draft after translation.	Within two weeks of receiving translated draft.
Typesetter	Design and typesetting after professional proof reading	Within two weeks of receiving copy-edited draft.
IPA	Design and typesetting for publication in Frozen Ground special edition.	Within 2 months weeks of receiving final content.

Appendix 2: Glossary

For permafrost and other cryosphere terms refer to the cryosphere glossary at NSIDC for keywords - <https://nsidc.org/learn/cryosphere-glossary>

Your project may have key terms not found in the NSIDC cryosphere glossary. Below are a list of standardized words you can also use:

- Adaptation
- Airborne Electromagnetic (AEM)
- Borehole
- Carbon
- CLASSIC
- Climate services
- Communities
- Computed Tomography (CT)
- CPERS
- Data
- Database
- Deformation
- Digital Elevation Model (DEM)
- Drainage
- Earth System Model (ESM)
- Electrical Resistivity Tomography (ERT)
- Embankments
- Engineering
- Environment
- Erosion
- Flooding
- Forward Modelling
- Foto detection and ranging (Fodar)
- GEographic Object-Based Image Analysis (GEOBIA)
- Geochemistry
- Geohazards
- Geotechnical
- Ground Ice Potential Map (GRIP)
- Ground Temperature
- Hazards
- Hudson Bay Railway
- High-Performance Computing (HPC)
- Infrastructure
- Interferometric Synthetic Aperture Radar (InSAR)
- Interoperability
- Landslides
- Light Detection and Ranging (LiDAR)
- Logistics
- Machine Learning
- Mapping
- Mercury
- Methylmercury
- Minerals
- Mining
- Mitigation
- Modelling
- Monitoring
- Mountains
- Plant functional type (PFT)
- Permafrost Information Network of Ground Observations (PINGO)
- Permafrost services
- Plateau
- Polar Desert
- Remote Sensing
- Remotely Piloted Aircraft Systems (RPAS)
- Remotely Piloted Aircraft Systems-Structure-from-Motion (RPAS-SfM)
- Settlement
- Simulation
- Subsidence
- Survey
- Synthetic aperture radar (SAR)
- Temporal convolutional neural network (TempCNN)
- Terrain
- Transportation
- Unmanned Aerial Vehicle (UAV)
- Water Quality

Appendix 3: Project summary checklist

- Study locations
- Local Languages
- Authors with affiliations
- Keywords
- Images and details of source / copyright of image.
- Captions for images
- Next practices
- Research summary
- Next steps
- Next step icons
- Connections text
- Connections icons
- Regional synthesis
- Partners text
- Acknowledgements and thanks
- Affiliations
- References
- Funding
- DOI or other persistent identifiers used for supplementary info, data or code.
must be published in journal, data repository, or with Library.
- Details of information not finalized and who is responsible.
- Meets word counts
- Correct fonts and sizes for text
- NSERC PermafrostNet logo

Appendix 4: Guides to best practice in Knowledge Mobilization, Ethical Research and Science Communication.

1. [NSERC PermafrostNet Science Communication Toolbox for Researchers](#)
2. Engineers Canada/Ingénieurs Canada. A guide to acknowledging First Peoples and traditional land: Land acknowledgements for staff and volunteers. Indigenous Advisory Committee. January 2021. [Available online here](#).
3. Cooke SJ, Gallagher AJ, Sopinka NM, Nguyen VM, Skubel RA (2017) Considerations for effective science communication. *Facets* 2:233-248
4. Somerville RC, Hassol SJ (2012) Communicating the science of climate change. *Physics Today* 64(10) :48-53
5. "Can you explain a hard idea using only the ten hundred most used words?", The up-goer five text editor: <https://splasho.com/upgoer5/>
6. The FAIR principles and research data management <https://ecampusontario.pressbooks.pub/canadardm/chapter/fair/>
7. [A history of water and ice : a field guide to permafrost and environmental change in the Yellowknife area, Northwest Territories](#) / S.A. Wolfe and S.V. Kokelj.

Appendix 5: Dissemination

- NSERC PermafrostNet website
- NSERC PermafrostNet MailChimp
- NSERC PermafrostNet social media
- Emailed to partners
- Printed copies distributed to communities by researchers
- Carleton University newsroom
- Carleton University Library
- Printed copies at events e.g. ICOP, AGMs, ArcticNet ASM, PCN AGM, CSPC
- ArcticKT portal