

YUKON
EXPLORATION
& GEOLOGY
2016

Edited by

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Yukon Geological Survey

Energy, Mines and Resources

Government of Yukon

Published under the authority of the Department of Energy, Mines and Resources, Government of Yukon <http://www.emr.gov.yk.ca>.

Printed in Whitehorse, Yukon, 2017.

Publié avec l'autorisation du Ministère de l'Énergie, des Mines et des Ressources du gouvernement du Yukon, <http://www.emr.gov.yk.ca>.

Imprimé à Whitehorse (Yukon) en 2017.

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ISSN 1718-8326

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In referring to this publication, please use the following citation:

Yukon Geological Survey, 2017. Yukon Exploration and Geology 2016, K.E. MacFarlane and L.H. Weston (eds.), 2017. Yukon Geological Survey, 242 p.

Front cover photograph: Geologists investigating placer settings on Burwash Creek. Photo by Syd van Loon.

PREFACE

Yukon Exploration and Geology (YEG) papers and the Yukon Exploration and Geology Overview continue to be the main publications of the Yukon Geological Survey (Energy, Mines and Resources, Government of Yukon). Individual YEG papers, with colour images, are available in digital format only and can be downloaded from our website. The YEG Overview is available in a digital format; we continue to do a limited colour print run.

YEG 2016 contains up-to-date information on mining and mineral exploration activity, studies by industry and results of recent geological field studies. Information in this volume comes from prospectors, exploration and government geologists, mining companies and students who are willing to contribute to public geoscience for the benefit of the scientific community, general public and mineral and petroleum industries of Yukon. Their work is appreciated.

Leyla Weston joined me this year for the YEG marathon. I am not entirely convinced that Leyla knew that her extra duties as acting YGS Outreach Geologist would include YEGging, but she's done this before and I thank her for helping with the technical papers. Many of the papers submitted have been authored or reviewed by colleagues at the Yukon Geological Survey - thank you for being involved and making production of this publication easier.

Sherry Tyrner of the Queen's Printer ensured that the printing process went smoothly.

We welcome any input or suggestions that you may have to improve future YEG publications. Please contact me at (867) 667-8519, or by e-mail at karen.macfarlane@gov.yk.ca.



Karen MacFarlane

IN MEMORIAM



CHARLIE ROOTS

(1956-2016)

Charlie Roots, a research scientist with the Geological Survey of Canada (GSC), passed away on June 28, 2016, five years after being diagnosed with amyotrophic lateral sclerosis (ALS).

Charlie's interest in, and love of the natural world was kindled at a young age by his father, the late Fred Roots (who recently passed away in October 2016), and godfather, the late John Wheeler (1924-2015) – both legendary scientists with the GSC. Charlie first studied geology at Dartmouth College for his BSc, and then at Carleton University for his MSc and PhD. After completing his PhD in the Ogilvie Mountains of Yukon, he joined the GSC in 1988 and started what would be a distinguished research career, mapping Yukon's geology and seeking to understand the tectonic history recorded in the rocks.

He moved to Whitehorse in the spring of 1992 to join the team that ascended Mount Logan under the auspices of the Royal Canadian Geographical Society. This expedition had both historic and scientific significance: it celebrated three anniversaries of national importance to our country – Canada's 125th anniversary, the Geological Survey of Canada's 150th anniversary, and the 50th anniversary of the Alaska Highway – and it marked the first use of GPS instruments to measure the height of Mount Logan. Charlie was a key member of the team, and is remembered by his fellow climbers as a tireless worker and reliable friend.

Upon completion of the Logan Expedition, Charlie joined the newly-formed mapping team established in Whitehorse under the Canada-Yukon Mineral Development Agreement. This group was the nucleus for what was to become the Yukon Geological Survey, and although Charlie was employed by the federal survey, he was considered by YGS, and many in Yukon government, as "one of us".



Charlie dedicated his career to mapping and understanding the geology of northern Canada, focusing primarily on Yukon but extending his work to other parts of the north. Over his career he authored or co-authored more than 70 publications, including geologic maps, reports and scientific papers. The fundamental knowledge that he generated has contributed to our understanding of Cordilleran geology and its resource endowment; his work has also served as a foundation for new research into the breakup of Rodinia, global glaciation, and the evolution of northwestern Laurentia.

Charlie was passionate and knowledgeable about many aspects of Earth Science and was enthusiastic about sharing his knowledge with Yukoners. He gave many public lectures, led geological walking tours, and collaborated on a number of publications that describe Yukon's dynamic and evolving landscapes (including the GSC's GeoScape series of posters and the book 'Ecoregions of the Yukon Territory'). He also mentored many student assistants and younger colleagues who joined the survey after him, sharing his knowledge and indulging their ideas and enthusiasm. Over the length of his career he collaborated with numerous university researchers and their graduate students, modestly deferring credit for new ideas to his younger protégés. Charlie's interests and enthusiasm resonated with several Yukon artists, leading to collaborative activities in places such as Tombstone Park.

Throughout his career, his wife Mary Ann, a well-loved Montessori school teacher and dance instructor, was a cherished partner and avid participant in some of Charlie's professional projects. She was working as a GSC camp cook when they met in their early years in Yukon; she participated in the Dome Road race with the geologists; and she is referenced numerous times in his field notes from the Logan Expedition. Charlie, Mary Ann and their children Galena and Logan hosted many visiting scientists in their home over the years and were actively engaged in the community in sports, arts and education.

Notwithstanding his scientific contributions, what Charlie is most likely to be remembered for is his character, which embodied enthusiasm, unbiased curiosity, modesty, and a contagious sense of fun. Those who worked in the field with Charlie will remember his capacity and enthusiasm for epic traverses and hard work. As a party chief, he would regularly be the first up to get ready for the day and the last to bed as he spent the late evening on his diary. He cheerfully took on the least desirable jobs around camp and an unkind or discouraging word was almost unknown. Over the last five years, in the face of his increasingly debilitating illness, Charlie came to terms with his fate to become a beacon of courage and strength. He maintained his positive attitude to the end as he purposefully wrapped up his projects by publishing several maps and papers using a voice-controlled computer. His colleagues and friends were fortunate to have been able to celebrate his life and say goodbye at the gatherings that he held for them, and at those that were held for him. He will be missed by everyone who knew him.





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