

The Department of Anthropology and Archaeology and The Association of Consulting Archaeologists Present

Archaeology Beyond the Academy

Multispectral Photogrammetry of Cultural Landscapes on the Northern Plains from Unmanned Aerial Vehicle Platforms, or the 100 m Tall Archaeologist with X-ray Vision

Butch Amundson, Stantec Consulting Ltd.



Photo courtesy Philippe Roulston, Stantec Consulting Ltd.

As early adopters of technology, especially for creating accurate maps, archaeologists have been using Unmanned Aerial Vehicles (UAVs) to discover and record archaeological features, landscapes and excavations since they became commercially available. This project tested the use of visual (RGB), near-infrared (NIR) and thermal sensors mounted on UAV platforms (fixed wing and multi-rotor) to discover and record archaeological features in their landscape context with georeferenced, high resolution imagery of two landscapes on the Northern Plains that contain a variety of cultural features, including stones circles, boulder alignments, stone cairns and medicine wheels.

We created digital layers to compare with the results of conventional archaeological survey, in cooperation with an ongoing archaeological survey in the vicinity of the forks of the South Saskatchewan and Red Deer Rivers in southwestern Saskatchewan. We applied both Object Based Image Analysis (OBIA) and desktop visual examination of the imagery captured in this project in order to determine whether interpretation results were similar to conventional survey and whether conventional survey and UAV-based multispectral imagery recognized different features.

<https://ideas.stantec.com/creativity-innovation-program/eye-in-the-sky-the-100-metre-tall-archaeologist-with-x-ray-vision>

Butch is a farm kid from east central Saskatchewan as well as an archaeologist and geologist with 38 years experience, including 32 consecutive years as a full-time, professional consultant, in all phases of archaeological impact assessment and mitigation, traditional knowledge studies, Indigenous and public engagement, environmental site assessments, palaeontological assessment, and environmental geology. Butch's engagement and traditional knowledge work has included many development sectors from British Columbia to northern Ontario, with a concentration on the Prairie Provinces. Butch is a teacher and mentor as well as a public speaker who has given keynote addresses to dozens of organizational gatherings. He lives in Saskatoon with Debbie, his partner of 42 years. They have a son and a daughter and Butch is patiently waiting to add "Grandpa" to his qualifications. In his life beyond archaeology (there is such a thing) Butch enjoys training for and competing in marathons and triathlons, making music with The House Band and working on art projects, including his garden.



4:00 – 5:30 pm
Thursday March 22, 2018
Room: ES 859
Earth Sciences Building

