

TUNDRA TRIALS AND TRIUMPHS

Collecting
data in the
Arctic



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TEXT BY MARY ANNE YOUNG, OALA

Another day of fieldwork in Nunavut begins at 5am, with the screaming of a helicopter overhead, wind whipping at the walls of my shelter. I sigh, and get ready for the day ahead—long johns, down jacket, rain gear, and a bug net, plus binoculars, a satellite phone, SPOT device, field guides, and data sheets. My co-worker and our Inuit guide meet me at the helipad, and we are flown to our first field site of the day. After we confirm our day's plans with the pilot and he leaves with a thumbs-up, we are once again left on the tundra with only the mosquitos for company.

My work days do not typically begin in such a dramatic fashion. At Dougan & Associates, our projects (primarily ecological consulting) focus on Southern Ontario, a landscape vastly different from the Arctic tundra. However, since 2014 we have been collecting vegetation and wildlife baseline data for a mining project in the Kivalliq region of

Nunavut. Along with specialists in other fields such as water quality, archaeology, fisheries biology, and toxicology, our work is being used to guide design and management decisions to avoid and mitigate impacts from this project on the complex northern ecosystem. As the project manager, I worked with my team to devise a multi-year field program to document the abundance and distribution of key “valued ecosystem components” for the project’s 280 km² regional study area—predatory mammals, ungulates, small mammals, raptors, upland breeding birds, and vegetation. Walking the entire study area is not practical, so we developed survey methods to study key species and habitats, then extrapolate to the landscape scale using regional land classification mapping developed by the Government of Nunavut.

We carefully plan our methods in advance of the fieldwork, as we have a limited time frame to collect all the data we need for our



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Mary Anne Young's co-worker Dylan White uses the high ground of an esker to survey the location for a monitoring plot.

IMAGE/

Mary Anne Young

02/

Snowbed willow (*Salix herbacea*) is one of the smallest woody plants in the Arctic.

IMAGE/

Mary Anne Young

03/

Micro-botany in the tundra

IMAGE/

Mary Anne Young



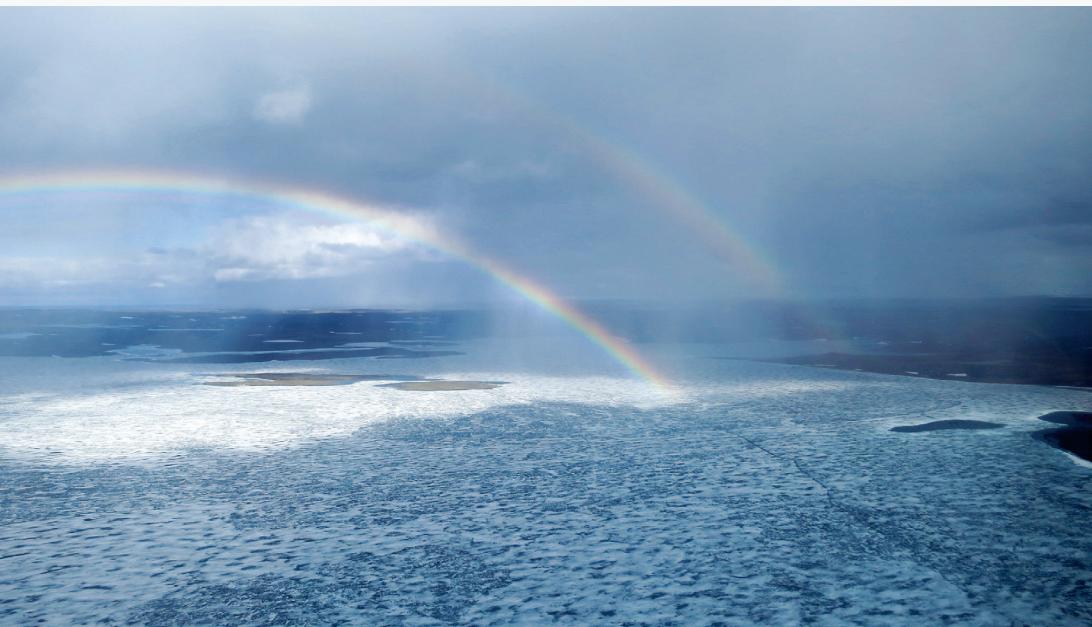
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while it was raining sideways. In the middle of summer! Needless to say, our equipment included layers of clothing, bug nets, and sturdy rain boots.

The idiosyncratic logistical hurdles of working in the North range from having to plan your field gear months in advance in order to have it shipped to the site, to losing days of potential fieldwork time to fog delays, which ground the helicopters we rely on to take us to and from our data collection sites.



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reports. However, in remote areas, uncertainty abounds, and work in the North has its own distinct set of challenges, idiosyncrasies, and unexpected delights. From the ever-changing weather, to the logistical hurdles of working at a mine site, to learning a completely new set of flora and fauna, these kinds of projects offer a wide variety of learning opportunities.

Regardless of the season, the Arctic environment can be merciless, even in summer. The permafrost, not far underfoot, is impermeable to water, which makes the tundra full of breeding opportunities for insects—and humans are the slowest, juiciest prey out there. Warm, still days bring out the voracious mosquitos. Imagine the worst mosquito swarming that you've ever experienced, then multiply it by three. Or five. Or ten! Each morning we would hope for wind, until the days we ended up working in 50 km/hr winds, in 10 degrees (Celsius) temperatures,



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Mary Anne Young takes a selfie, in bug-protection gear, on a warm, calm day on the tundra when the mosquitos are out in full force.

IMAGE/ Mary Anne Young

05/ Double rainbow photographed from the daily “taxi service”—a helicopter

IMAGE/ Mary Anne Young

06/ Curious Sik Sik (Arctic ground squirrel)

IMAGE/ Dylan White

07/ Barren-ground caribou

IMAGE/ Dylan White



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Having the opportunity to learn the flora of a completely different landscape than what I'm familiar with has been an amazing opportunity. The plants are tiny and have adaptations such as dense hairs and leathery leaves for the high winds and low precipitation of the tundra. They flower fleetingly, but magnificently. Often, I would start out identifying plants while standing, then move to my knees, then end up lying on my stomach to get a close enough look. Despite my focus on vegetation, working on the tundra also allowed me to have some amazing wildlife encounters: the ever-curious Sik Sik (Arctic ground squirrel) peeking out of their burrows and chattering. Herds of caribou wandering past. Glancing up after picking our way around a rocky lake to see a wolverine not far off, keeping a close eye on our crew's progress. The tundra may be vast, but it is far from barren. It has been an honour to experience it.

As our baseline characterization project wraps up, I look back fondly on my memories of fieldwork on the tundra and hope for more opportunities for projects in remote areas. What better way is there to skip rush hour than by catching a ride on a helicopter?

BIO/ MARY ANNE YOUNG, OALA, IS A LANDSCAPE ARCHITECT, ECOLOGIST, AND ARBORIST AT DOUGAN & ASSOCIATES ECOLOGICAL CONSULTING AND DESIGN IN GUELPH, ONTARIO. HER DESIGN WORK INCLUDES WETLAND RESTORATION, FOREST EDGE MANAGEMENT, WILDLIFE HABITAT ENHANCEMENT, INVASIVE SPECIES MANAGEMENT, AND OTHER ECOLOGICAL RESTORATION DESIGNS.