GNWT more prepared for wildfires

Government research partnership with academics creates greater understanding of impacts

By Brett McQuarrey

Scientists, academics and members from multiple government departments, agencies and territorial, convened in Yellowknife on March 6 to discuss the outcome of a wildfire research partnership.

The results are the sum of the “thousands of hours” of collaborative research between the Department of Environment and Natural Resources (ENR), multiple universities and National Aeronautics and Space Administration (NASA).

Those results have provided the GNWT and territorial fire operations more precise tools to monitor fires and make better decisions should a large fire season happen again.

Early on, ENR attracted research partners in Canadian and American academia and NASA, who were beginning the Arctic Boreal Vulnerability Expedition (ABVE).

NASA funded scientists got boots on the ground in an agreed statement which informed the airborne campaign ABVE in 2017.

“We tend to focus on the unique perspective you get from satellites looking down on the land, using sensors or other instruments to look down from airborne campaigns,” said Chip Miller, deputy science lead at NASA’s jet propulsion laboratory in Pasadena.

Miller also said the products used can now detect a fire as small as a hectare in “about 24 hours.”

Richard Olsen, manager of fire operations with the GNWT, said they have gained access to monitoring and sensor products used to monitor fires with more precision to make more informed decisions.

“The biggest change I’ve seen is their use of remote sensing and the inclusion of that in monitoring and decision making,” Olsen said.

“There are at least six different products we’ve incorporated into our programs and we’re getting to the point where we can discover fires in a relatively short period of time.”

In addition to the technology being used, the information that has been produced as a result of the research will help decision makers predict how these fires act and the impact it has on the landscape.

“The improvements in modelling and the idea about how we can try to understand that if a fire occurs on this landscape, we can project what it’s going to potentially do and what the impact will be,” Olsen said. “From an operation perspective too, we’re focused on what the fire may do. A big part is the response of the forest after, which may play into what the subsequent fire behaviour might be down the road.”

The devastating fires of 2016 caused extensive damage to the “popular” and “prominent” downtown business, negatively impacting the community as a result.

We were working before the fires were really out,” said Applejohn. “We started in November 2014 to try and put together a workshop to address the research partnership and to look at the actual and potential impacts of the wildfires.”

According to Wilfred Laurier University’s Jennifer Baitzer, the research really shines in showing hot spots of change in the ecosystem such as changes to lichen growth, foraging qualities or changes to root growth.

“We’re in a much better situation now to make predictions about those hot spots of change and we can pass that off to the management community, so they can make appropriate decisions about how to manage some of those non-traditional resources,” said Baitzer.

Without the research, we can’t make those decisions and I think we’ve had a critical pass off of some of this knowledge. We now have the ability to exchange that knowledge.

Miller also pointed out that these types of assets are taken for granted or not prioritized. “What we’re talking about is ecosystem services,” said Miller. “Those typically are not monetized. They are just taken for granted. Everyone assumes the land will continue to provide them, they have very high value and need to be protected and considered not just pieces of infrastructure.”

As the first four years of research is reflected on, Applejohn says it’s remarkable how fruitful the partnership has been and looks forward to the next research cycle.

“We’re really here to look at what the results of those research programs mean for us as a government, us as residents in this territory and how we move ahead,” said Applejohn.

“We’ve finished one research cycle here, we’re really interested in looking to the future and how we can work collaboratively to be as successful in the next four years as we have in the last four years.”