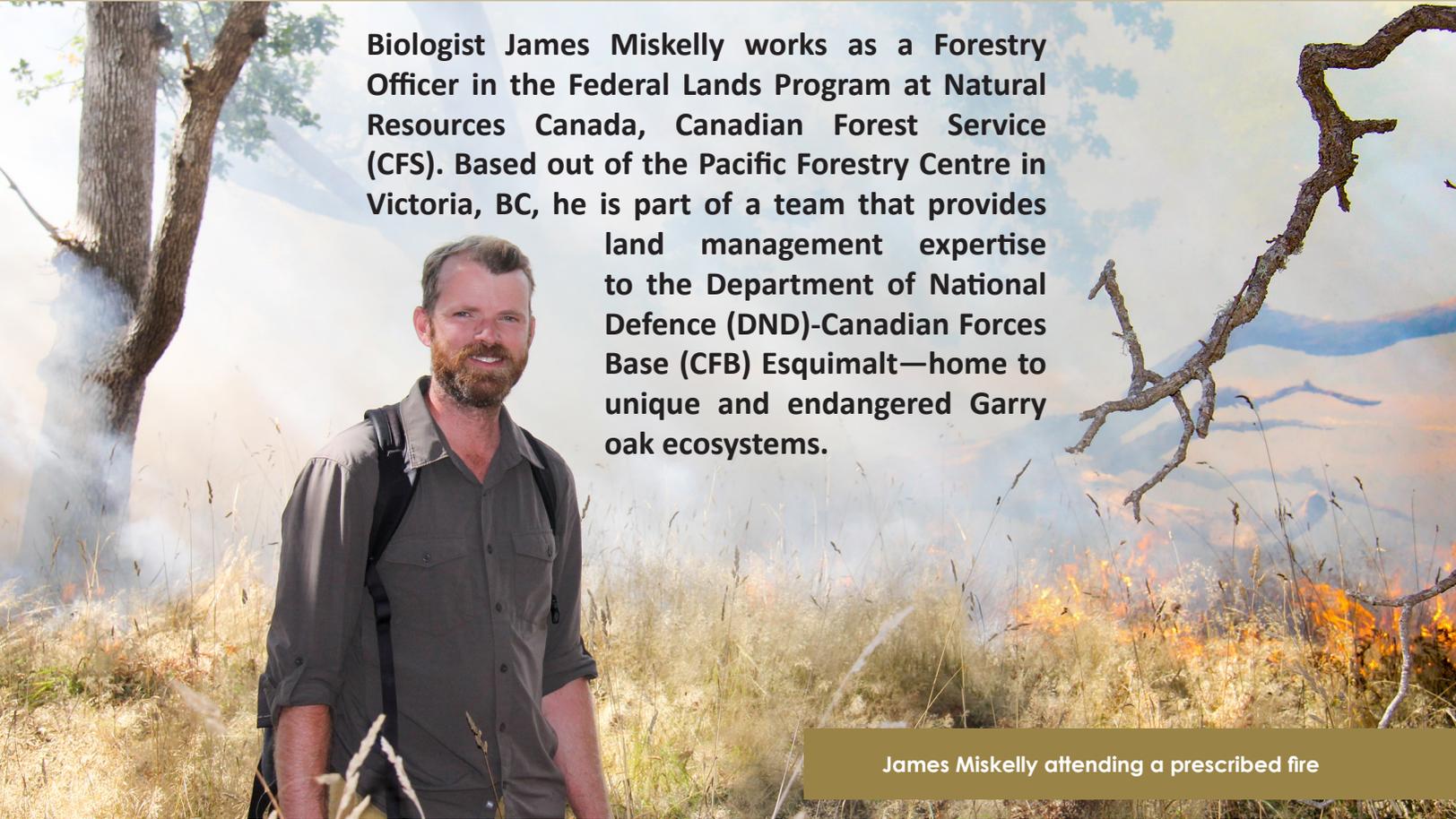


SCIENTIST PROFILE

The Pacific Forestry Centre

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PROTECTING THE LAST INTACT GARRY OAK ECOSYSTEMS



Biologist James Miskelly works as a Forestry Officer in the Federal Lands Program at Natural Resources Canada, Canadian Forest Service (CFS). Based out of the Pacific Forestry Centre in Victoria, BC, he is part of a team that provides land management expertise to the Department of National Defence (DND)-Canadian Forces Base (CFB) Esquimalt—home to unique and endangered Garry oak ecosystems.

James Miskelly attending a prescribed fire

Photo by Vanessa Greebe

CFB Esquimalt is comprised of 21 properties in coastal British Columbia that total approximately 5,000 hectares. The land supports considerable biodiversity, including species-at-risk. Miskelly applies his knowledge of ecosystem restoration in the field rather than a laboratory. “The work that we do in the Federal Lands Program isn’t research,” explains Miskelly. “We assist other Federal land owners with management of natural resources.” With expertise

in species at risk, invasive species, GIS, and ecosystem management, his team is working with the Department of National Defence to restore and protect Garry oak ecosystems on federal land.

BC’s natural Garry oak ecosystems are threatened by land conversion for agricultural, residential and industrial development. Less than five percent remain in a near-natural condition, and they too

are threatened. Habitat loss, fragmentation, encroachment of woody species (as a consequence of fire suppression), and invasion by exotic species, has led to the designation of more than 100 species of plants and animals that live in Garry oak ecosystems as “at risk” by the Government of BC.

Miskelly’s passion for these endangered ecosystems was piqued by an article he read as a youth, and later drove his decision to study at the University of Victoria, in close proximity to the woodlands

and meadows he is protecting today. “Through the work that we do with Canadian Forces Base Esquimalt, the Pacific Forestry Centre has emerged a leader in management of Garry oak ecosystems and associated species at risk and invasive species,” says Miskelly, “we are engaged in some of the largest stewardship projects in these ecosystems in BC”.

The Federal Lands Program employs active management techniques—such as prescribed fire and seed addition—on a larger scale than any other local land manager. Proud of their success, Miskelly says, “the sites that we work in include the only remaining fragments of Garry oak ecosystem that still support a full complement of large animals, providing a setting to observe the full range of expression of habitats and interactions associated with the natural landscapes of the Victoria area”.

Garry oak ecosystems evolved with frequent, low-intensity fires that favored fire-resistant oaks and a diverse suite of plants and animals that live only in open, sunny habitats. These ecosystems have been profoundly disrupted by fire exclusion and the introduction of non-native shrubs and other plants. Management interventions such as thinning and prescribed fire can reduce the abundance of non-native shrubs, maintain open canopies, and support the plants and animals that live nowhere else in Canada. Additional



Garry oak ecosystem

Photo by Shyanne Smith, Garry oak ecosystems recovery team



A controlled burn at Rocky Point near Esquimalt, BC. This series shows the landscape before, during and after the prescribed fire.

Photos by Vanessa Greebe

benefits include reduction of wildfire risk, transfer of carbon stores from mostly above ground to mostly below ground, and improvements in training conditions for the military users of these sites.

Be it at work or as a volunteer, Miskelly says, “the best thing that I get to do is see projects through from prescription through implementation to result”. In the Garry oak ecosystems, he adds, “we see the richness of the habitat increase from year to year and witness the return or resurgence of the wild plants and animals that depend on these healthy ecosystems”.

His success is measured by the satisfaction of the partners he works with and the changes they see on the ground. “We know we’re successful as land managers when we see improvements in ecological conditions, including reductions in invasive species and increases in species at risk and their habitats.”



Garry oak meadow flowers

Photo by Satinflower Nurseries

Pacific Forestry Centre

www.nrcan.gc.ca/science-data/research-centres-labs/forestry-research-centres/pacific-forestry-centre/13489