

# Studying grizzly bears' picnic

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Sean Coogan holds a sample of alpine sweetvetch.

Armed with a coffee grinder and a lot of questions, a University of Alberta graduate student is uncovering the mysteries of a humble root that is vital to grizzly bear survival.

By analyzing the qualities of a plant called alpine sweetvetch, master's student Sean Coogan hopes to increase insight into bear behaviours and better define the timing and locations of critical habitat, which will ultimately help guide population recovery for a species that is at risk in Alberta.

“Knowing what these bears are going to be eating and where is really important to understanding their behaviour, since they are driven by food,” said Coogan, a student in the U of A’s Department of Renewable Resources.

The mountain plant, pink when in bloom, is high in protein and low in

fibre in the spring and fall, making it nutritious and easily digestible. By determining when alpine sweetvetch is at its nutritional peak, Coogan can then predict what and where the bears are going to be feeding, which gives insight into their overall habits.

Coogan's research, supervised by professor Scott Nielsen in his lab, is part of a larger provincial study that is exploring how many grizzlies Alberta can sustain, with the goal of developing a provincial recovery target. Listed by the province as a threatened species, there are thought to be fewer than 700 grizzlies currently in Alberta.

The alpine sweetvetch root is a critical part of the grizzly diet in west-central Alberta, but little research has been conducted on the plant itself, Coogan noted. "A lot of people don't know that grizzlies also eat plants, and rely on this root when they come out of hibernation, when there's not a lot of food around." Female grizzlies, being smaller than males, can even subsist entirely on the root and other plants such as grasses, legumes, berries and dandelions in the spring and fall when food supplies are low, without having to hunt for meat, he added. And the root allows females with cubs to survive in otherwise poor quality habitat, which may make them less prone to aggressive behaviours by males, said Coogan.

Using a coffee grinder, Coogan has been churning the dried root—117 samples of it— into a fine powder, studying how the nutrition of the plant, which is also edible to humans, varies in space and time and how [grizzly bears](#) are taking advantage of that. Since the root is at its best before it transfers stored energy into above-ground growth, the bears have been following what Coogan calls a "brown wave" in the same way that ungulates like deer and moose are known to follow a green wave of vegetation.

By surfing this brown wave, the bears are able to prolong the period they

are able to forage on high quality food, which in turn, strengthens the animal's nutrition and health. This is particularly important in years with poor spring conditions and/or poor berry crops, Coogan said.

The findings can also have implications for other root foragers in the animal kingdom, such as arctic grizzly bears, wild boars and primates.

Provided by University of Alberta

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