

Caribou Habitat Restoration Methods Workshop, June 2, 2022. “What we Heard” and other Guidance

On behalf of the workshop organizers, we want to thank the participants, both who attended at UNBC or on ZOOM, for their contributions to the discussion on operational habitat restoration practices. We have captured a few/number of the key points that arose and received some discussion. It is not intended to be minutes from the session, but a basis to build forward. HCTF will likely post a guidance document derived from the outcomes of the workshop on its Caribou Habitat Restoration Program website.

There are **2 types of habitat disturbance**: polygon based, where the main impacts are from lost habitat (eg. ground lichen or old forests) and creation of early seral vegetation that contributes to apparent competition and spatial overlap with predators; and linear based, where the main impacts are from increased penetration into caribou habitat and hunting speed for predators, and displacement by human activity (eg. Snowmobile use). This limits the refugia for caribou.

While habitat restoration can occur along a continuum, here are **2 types of restoration**: ecological where the objective is to return a disturbed site to its pre-disturbance condition, primarily by planting vegetation usually over a long period (challenged by things like soil compaction and hydrogeological conditions); and functional where the objective is to address a competitive advantage for a predator arising from the disturbance (challenged by flattening out with time and return of predators).

Prior to conducting a habitat restoration project, it is important to invest heavily in the background work. This **preparatory work includes**:

- Engaging with local caribou biologists and/or managers to enable an understanding of existing restoration activity and permitting and authorizing requirements;
- Deciding on a clear objective for the project to guide works. The caribou habitat restoration program has a limited number of objectives: reducing wolf use of linear features; eliminating human use of linear features; and, accelerating transition of a disturbed site to a matured forested state. The final project objective will be influenced by non-caribou factors including Indigenous interests, economic factors, and societal consideration;
- Examining any available strategic plans (eg. Medzih Action Plan, Tactical Restoration Plans, ABMI Meso-watershed Ranking tool) to identify locations with high priority for treatment; and,
- Developing a Communication and Outreach Plan that outlines requirements to engage or consult with First Nations communities, tenure holders, local recreation groups, etc.

The diversity of sites and situations that are suitable for caribou habitat restoration makes it very challenging to develop a set of treatment prescriptions that could be used for broad application. Science, traditional knowledge, and experience should help our understanding of effective tools and techniques. This knowledge will help us decide

which techniques are likely to be the most effective at a particular site. A clear objective for the restoration will guide the type and intensity of treatment used.

While **refining the treatment prescription**, proponents should consider:

- Using multiple methods to confirm the suitability of a site for treatment (eg. Remote sensing, photo interpretation, site visits in several seasons);
- Recognizing the most valuable/effective location to eliminate predator and human impacts is at points of entry to caribou habitat, linear feature intersections, and pinch points;
- Being flexible to accommodate un-foreseen consequences while remaining consistent with the project objective;
- Scaling equipment types and methods up or down depending on Site access, seasonal challenges or other local site-specific factors;
- Anchoring treatments to existing topographic or vegetative features;
- “Overbuilding” the restoration feature so that it is “intimidating” in terms of methods applied (eg. berms + CWD spreading + seeding planting), intensity of use (eg. higher stocking of seedlings), and multiple iterations of the feature within sight of each other;
- Barriers should extend into adjacent undisturbed habitat to help eliminate being able to “walk around” the barrier;
- Avoiding use of vegetation that is palatable to moose, deer or elk.
- An understanding of the longevity of whole trees used as barriers. It is recommended to use a combination of trees that are felled, hinged, bent from the root ball and “wind throw” mimics. As the site permits, try to use a variety of tree species, but of a larger size;
- Testing the treatment to determine if it achieves objective (eg. have a snowmobile try to breach a barrier);
- Situating restoration features near intact or contiguous areas of high value habitat to build larger block of undisturbed habitat; and,
- Install information and safety signage at the start of the treatment and at key transit locations (eg. Ferry terminals, entry points from highways).

Be aware that there are **several key issues that add to the complexity and effort** required to deliver caribou habitat restoration projects. These include, but are not limited to:

- Capacity limitation of administrative officials, equipment and skilled operators. Growth of the “Restoration Economy” may help address this issue;
- Competing values and priorities on what areas and/or herds are high priority or biologically or culturally significant;
- Capacity limitations for local communities such as First Nations to deliver restoration projects in a timely manner and manage projects start to finish. Also capacity limitations on training programs and in the field of caribou habitat restoration practice.
- The administrative burden to get approval for works including forest health and wildfire concerns. Work is underway to address permitting and consultation requirements;
- Consolidated data storage and retrieval is inadequate. A restoration tracking tool is underdevelopment that may be available fall 2022;

- Lack of a definition on what is “restored”. This gap results in uncertainty on the intensity of treatment needed to meet ecological or administrative/legal tests;
- Role played by fire as a natural agent of restoration versus a risk factor in habitat loss;
- “Restoration Economy”, and perhaps a Restoration Community of Practice, is poorly developed resulting in lost opportunities,
- Long term monitoring of the duration and effectiveness of works is often disjointed from implementing the restoration feature. By deploying more consistent treatments, that are accurately described with data stored in a central and accessible locale may improve the efficiency of future monitoring.

Please find attached the slideshow presentations from the June 2, 2022, workshop. Slides have been provided by presenters for distribution to workshop attendees only. Please seek permission directly from the slide author for further distribution.