Caribou Habitat Restoration Fund - Project Monitoring Guidance

Context

To provide general guidance to new and existing proponents of the Caribou Habitat Restoration Fund (CHRF) on monitoring for functional and ecological caribou habitat restoration projects.

What is monitoring for restoration projects?

Assessing the conditions and changes or improvements that result from a treatment or action intended to achieve a specific objective.

> *In simplified terms: watch and check a situation carefully for a period of time in order to discover something about it.*

Why CHRF projects need monitoring

HCTF recognizes the need to conduct short-term and long-term monitoring of caribou habitat restoration works to confirm that restoration objectives are being met. Monitoring will take different forms depending on the objectives of the project.

- Implementation: Achieving project milestones on a measurable timeline. This includes setting a treatment baseline on which to compare future measurements. Monitoring delivery of the actions *(e.g. achieve 75% survival after 12 months of seedlings planted at 15 stems/m2).* Results should be measurable and assessable within 1-2 years of treatment.
- Accounting: HCTF has a fiscal responsibility to report on spending for restoration actions. This is a condition of the agreement to administer restoration funding.
- Return on Investment (ROI): Interested/engaged parties will need to report on performance. This will help improve the efficiency of program delivery by learning from experience.
- Establishment: To confirm that the desired state has been achieved or is forecast to do so with no additional treatment. It should be measurable and assessable 8-15 years after treatment.
- Effectiveness: Achieving program objectives. This is the ultimate goal, namely increased number of caribou, and will be measured by government over the long term.

Monitoring for ecological restoration vs. functional restoration

Ecosystem restoration is basically growing trees and associated vegetation towards an old seral stage. Measuring the tree growth trajectory in comparison to the growth expected for the site (series) may be adequate for many projects. For most projects, standard forestry metrics can be used for monitoring. Such metrics include species composition, stem density, basal area, tree height, horizontal complexity, and seedling survival.

Functional restoration is primarily changing predator or human behaviour on linear features. Treatment may include, but does not rely on, tree planting. Measuring the condition of the works (e.g. barrier height, berm integrity, vegetation condition) may be adequate for many projects. Monitoring conducted for either approach will typically rely on proven methods, and standards grounded in the best available science.

Infrequently, CHRF projects will include objectives to determine the effectiveness of a standard (e.g. CWD barriers >0.5m vs > 0.75m). These projects will require a more intense/sophisticated, statistically supported monitoring program. Such monitoring is not described here.

Project monitoring

CHRF projects will focus primarily on implementation monitoring. Were the treatment measures described in the proposal delivered on the site?

- A project (proposal) requires a simple monitoring system that collects basic information to evaluate if the project objective has been achieved (i.e. met success criteria/threshold).
- An effective monitoring program requires clear objectives that define success. Ideally, each objective should be supported by rationale linking the objective to potential long-term, positive effects on caribou habitat or caribou demography (note that monitoring of actual effects on caribou is not required for most projects). In doing so, objectives can be organized hierarchically where CHRF program objectives are linked to project objectives and treatment objectives (see example below). Also, a clear connection is needed between the project objectives and the monitoring data collected and analyzed. The objective must have a measurable change that has metrics (e.g. height of CWD barrier in metres) and success thresholds (e.g. >0.5 m tall) within a limited time frame (e.g. 1-3 years). Monitoring should be focused on the key elements needed to assess project implementation.
- Projects are expected to monitor the implementation of restoration works through the initial survival stage (1-3 years) and establish a format for longer-term monitoring program.

Monitoring programs for typical CHRF projects

- Monitoring evidence of human use (e.g. ATV tracks) may be effective at access control points. Cameras may have an application in these monitoring programs, but scheduled visual inspections may achieve similar results.
- Monitoring the condition of functional restoration treatment will be sufficient for most functional restoration projects.
- Monitoring ecological restoration treatment by assessing planting success.

Example

Program objective: enable self-sustaining herd by increasing caribou calf survival by reducing wolf predation rates

Project objective: eliminate travel advantage for wolves on seismic lines

Treatment objective: install travel movement barriers (berms) that limit wolf movement

Implementation objective: create raised berms composed of CWD and soil at least 0.5m tall which span the linear feature, installed every 50m of the treated feature

Implementation metric: average berm height

Implementation success threshold: 80% of berms at 50m intervals are >0.5m average height

Timing: late spring (June) of y1,3 post-treatment

Resources

Caribou Habitat Restoration Fund Project Monitoring Guidance For 2022-23
https://hctf.ca/wp-content/uploads/2021/09/CHRF_Monitoring_Guidance_Document_2022_23_cycle.pdf

Wildlife Camera Metadata Protocol, Standards for Components of British Columbia's Biodiversity No. 44., September 2019
https://hctf.ca/wp-content/uploads/2022/07/Wildlife-Camera-Metadata-Protocol.pdf