

The Importance of Monitoring



Getting more mileage out of restoration: the importance of monitoring.

When faced with a wide set of options, how do you figure out which one works the best? Imagine you're prepping for a long road trip, and you start thinking about whether you can save a few bucks by improving your gas mileage. There are a lot of recommendations out there for improving your mileage like cleaning your air filter, keeping your tires inflated, turning off the AC, or using a bed cover. A road trip is a great chance to try out one of these tricks, but to really tell whether it makes a difference, you'll need to take a couple measurements along the way.

Growing a new forest on a reclaimed seismic line or OSE site is the same in a lot of ways: you try out some new tools or techniques, then measure the response to see if it worked. The difference is that the responses are observed over much longer timescales, and the aim is to grow a forest – a much more challenging task than shaving a few dollars on your next fill up. Monitoring is a key component to ensuring successful restoration. Without it, we can't know what's working, or more importantly, what needs improvement.

Implementation Monitoring

There are two basic types of monitoring: implementation monitoring and effectiveness monitoring. The purpose of implementation monitoring is to make sure the restoration crews did what they were supposed to do.

Say you decide to use a bed cover to reduce drag on your truck, which will hopefully save you some fuel costs. Before embarking on your trip, it's important to make sure it's installed correctly, otherwise it wouldn't be a fair test of the product.

This is implementation monitoring. Without it, a treatment may be applied incorrectly, compromising the restoration effort and making it difficult to draw meaningful conclusions from the outcome. In the case of restoration, implementation monitoring may involve checking that the correct linear features were treated, that no movement trails for predators remain at the edges of the line, that mounds are made with the correct dimensions, or that seedlings have been planted in appropriate locations.

Effectiveness Monitoring

Effectiveness monitoring answers a different question: ultimately, how successful was the treatment?

Let's return to our gas mileage example. If you really wanted to know whether the bed cover was reducing drag, you would need to track your fuel consumption with and without the new cover. Without making any comparison, there's no way to know whether the new bed cover for your truck actually made a difference to the gas mileage.

When it comes to effectiveness monitoring of restoration, planners might compare seedling growth, survival, and health in a treated site compared to an untreated one. These comparisons happen over long timescales, due to the slow nature of tree growth. Trees can take several years to establish on a site and may run into issues even after initial success. Take [mounding](#) for example. If seedlings at a wet lowland site are planted on mounds which are too small, they may do ok initially. However, as their roots grow deeper and eventually dip below the water table, they will begin to drown and die off – a process that may not be apparent until several years have passed since treatment.

Monitoring is Necessary to Inform Improvements

Diligent monitoring is what reveals the outcome of restoration treatments and is what allows us to compare treatments with one another. In doing so, planners can apply those findings to future projects and innovate on what has been done before. As Michael Cody, land and biodiversity specialist for Cenovus Energy, explains,

“It’s tough to complete the improvement loop without first revealing the problem.”

As treatments progress, monitoring can also reveal whether restoration treatments have broader impacts on human use or wildlife, but good data collection protocols must be established from the beginning. Consistency and good study design are key. While monitoring can sometimes be a hassle, without it we won’t learn.

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