



From Potential to Precision

Introducing **Biochar 3.0**: where beneficial
reuse meets lab-validated performance.

Executive Summary

Myno Carbon is redefining environmental clean-up with Biochar 3.0. Myno's precision-engineered biochars cover a wide range of applications, including contaminant sorption, bioremediation, and soil regeneration. Unlike legacy approaches, Myno's solution is carbon-negative, scalable, and backed by third-party laboratory and field testing. Supported by scientific rigor and measurable outcomes, Myno is building a future where land restoration, carbon removal, and economic value align. More than a material upgrade, this is a mindset shift from damage control to ecological regeneration.

The future of land recovery starts here.

A Material Reimagined:

From Biochar 1.0 to 3.0

Biochar 3.0: Nature's template has been enhanced by science. Myno Carbon builds on the benefits of basic biochar by engineering contaminant-specific enhancements to deliver faster recovery, better regenerative impact, and more productive land restoration.

Biochar has long been celebrated for its agronomic benefits. Derived from the pyrolysis of biomass, it is a highly porous form of carbon capable of improving soil structure, retaining nutrients, and enhancing beneficial microbial abundance and diversity. At Myno Carbon, our biochars are derived from sustainably sourced wood waste and pyrolyzed for precision. This provides a high permanence fraction that locks carbon into soil for millennia while improving soil health and increasing drawdown. It reduces acidity and metal contamination by buffering pH and enhancing reactive surface area for chemical binding, including heavy metals of concern (such as Pb, Cd, and Hg). Myno's engineered biochars accelerate the biodegradation of hydrocarbons and reduce the bioavailability of PFAS (pre- and polyfluoroalkyl substances).

We refer to this evolution as Biochar 3.0.

Biochar 1.0

Ancient Wisdom

Origin: Amazonian Terra Preta soils

Function: Improved soil fertility via microbial stimulation

Takeaway: Proof that carbon in soil catalyzes life

Biochar 2.0

Industrial Byproduct

Origin: Modern production from biomass power plants

Function: Seen as low-value, "hippy" product for agriculture/composting

Takeaway: Scaled production, but limited control and credibility

Biochar 3.0

Myno's Innovation

Engineered for Impact

Origin: Controlled pyrolysis & inputs with lab-tested performance

Function: Tailored for specific contaminants with dual-action performance

Takeaway: Faster clean up & carbon removal. This is no longer just biochar – it's tested & performance-driven remediation.

A Material Reimagined:

From Biochar 1.0 to 3.0

Biochars 3.0, as pioneered by Myno Carbon, represents a radical leap forward. It is no longer a passive additive. Myno produces precision-engineered biochar products, designed for specific use cases in environmental remediation, with carefully controlled properties including surface area, pH, porosity, particle size, biochar charge, and microbial compatibility. Products can be delivered in dry form to target AC replacement for opportunities in tailings management or watersheds. Myno's biochar products can also be delivered in liquid form and optimized for in situ approaches. From stormwater filtration to hydrocarbon degradation to PFAS removal, we design for outcomes.

We design products with purpose.



**Micronized
Biochar**



**Granular
Biochar**



**Liquid Carbon
Pure**

The legacy of environmental contamination

Across North America, there are over 1300 national priority list (NPL) sites, as designated by the EPA (EPA, 2025). Heavy metal contamination, abandoned mining operations, chemical waste sites, and petroleum-polluted groundwater are present-day challenges that continue to endanger communities, ecosystems, and our climate. Despite the billions of dollars spent yearly on clean-up, many of these interventions remain temporary, unsustainable, or incomplete. The dominant tools used in environmental clean-up, such as activated carbon, chemical oxidizers, pump-and-treat, and thermal treatments, may offer short-term gains, but they were never designed to fully restore. And the costs, both financial and ecological, are mounting.

Advancing Land Recovery

In parallel with legacy pollution challenges, we are now facing a global crisis of soil degradation.

According to the UN, over 40% of the Earth's land surface is already classified as degraded, and more than half of all agricultural soils worldwide are in decline.

This matters profoundly. Degraded soils have reduced organic matter, compromised nutrient cycling, and weakened biodiversity. They are more prone to erosion, desertification, and drought. Critically, they lose their ability to retain water and sequester carbon, shifting from carbon sinks to carbon sources and accelerating the very climate instability we seek to slow.

Healthy soils are foundational to planetary balance. They store two to three times more carbon than the atmosphere, forming the single largest terrestrial carbon sink. When soils degrade, they release CO₂; when soils are restored, they sequester it.

At Myno Carbon, we believe that restoring soil health is essential for supporting productive agriculture, protecting local ecosystems, and ensuring safe land use for future generations. Our approach goes beyond removing pollutants as we focus on rebuilding the biological richness and structural integrity of soils. This accelerates revegetation, improves land usability, and helps growers and landowners achieve better long-term outcomes.

Engineered for Greater Impact

Petroleum Hydrocarbon Example

Central to our approach is the concept of synergistic co-benefits. A combination of benefits such as increased water holding capacity, high cation exchange capacity (CEC), and expanded specific surface area work together to provide a microhabitat that promotes microorganism reproduction and abundance while allowing for the co-location of the contaminants and degrading microbes. Specific to petroleum hydrocarbons, Myno's biochar simultaneously absorbs contaminants and stimulates microbial populations that degrade these pollutants in place. This synergy shortens recovery timelines while enhancing long-term soil aggregate stability and improving downstream impacts on groundwater, plant health, and ecosystem recovery.

The microscopic structures present in the biochar support microbial communities that drive in-situ petroleum hydrocarbon biodegradation. Rather than just sorbing petroleum hydrocarbon pollutants, Myno's biochar helps break them down at the source — accelerating restoration and leaving behind healthier ecosystems. This dual-function approach, adsorption plus biostimulation, sets us apart in delivering both immediate remediation impact and lasting ecological benefit.

Unlike traditional activated carbon, which is fossil-derived, our biochars are produced from clean wood waste and contribute to carbon removal, with each tonne typically reducing greenhouse gases by 2.08 tonnes of CO² equivalents.



Science as Strategy:

The role of analytical testing

Scientific rigor underpins everything we do. Sorption isotherm testing, column leachate testing, chemical analysis, and qualitative (e.g., scanning electron microscopy [SEM]) and quantitative data (e.g., pore width, cumulative pore volume, pH/pHPZC, CEC) play a vital role in our product development process to determine contaminant affinity and biochar capacity, and overall product efficacies for immobilizing and/or supporting the biodegradation of targeted environmental contaminants. By understanding the pore size profiles, surface charges, and chemical functional groups, whether it's binding gasoline range organics, BTEX compounds, other hydrophobic organic contaminants, PFAS, or heavy metals, we can refine our formulations. Laboratory and field testing help us tailor solutions for specific contaminants and environmental conditions while building an empirical foundation to engage clients, regulators, investors, environmental engineering consultants, and landowners with evidence-based solutions. Biochars may also be mixed with other amendments or additives to achieve the greatest array of synergistic co-benefits in the field.



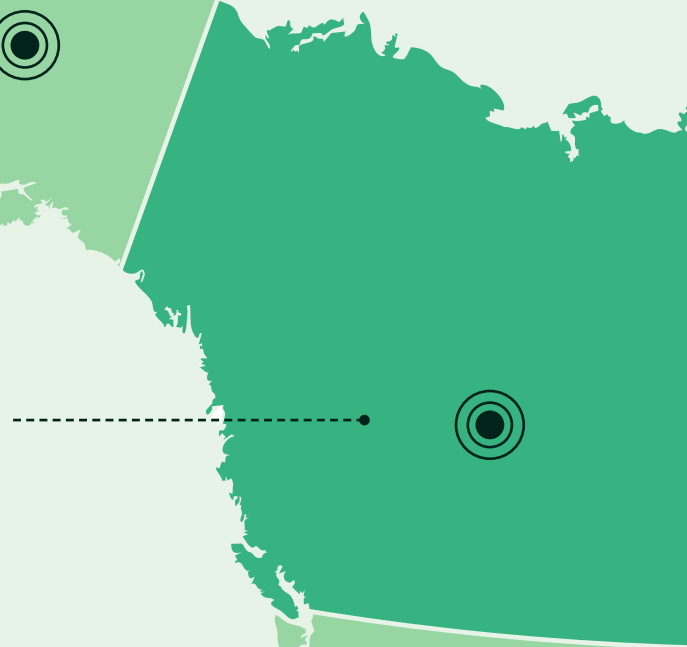
Trials to Transformation

Myno Carbon is actively turning vision into verified impact with significant laboratory and field research already underway to demonstrate measurable results that set a new industry standard.

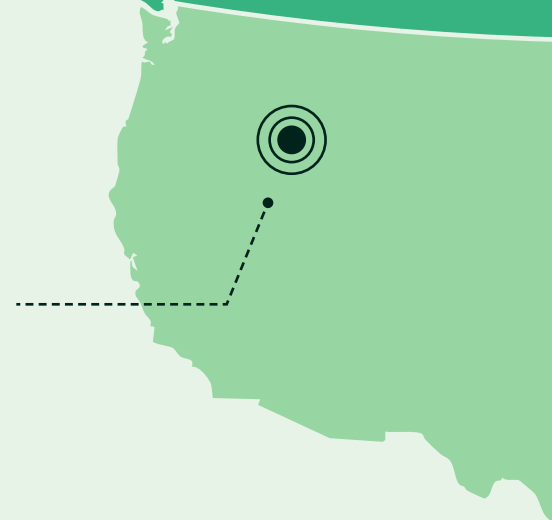
In **Alaska**, a large environmental engineering consultancy is testing one of our biochar products at a petroleum-spill site to validate both sorption and enhanced microbial biodegradation rates.



In **Alberta, Canada**, a multi-year trial with a major oil company integrates our liquid micronized biochar into landfarming systems. Data are currently being collected and based on published literature data, we anticipate improved moisture retention and a measurable biostimulation effect that promotes faster and significant hydrocarbon sorption and degradation.



In **Washington State**, biochar-amended compost developed by Myno is part of a pollinator habitat improvement trial for the Washington Department of Transportation and is performing much better than regular compost based on initial qualitative comparisons of wildflower blooms. Quantitative data are currently being collected.



In addition to our work with environmental engineering firms, we are also supporting researchers at major US universities that are testing several different Myno biochar products to calibrate their efficacy in sorbing and supporting the biodegradation of petroleum hydrocarbons and the potential for use as a replacement for peat to carry contaminant-specific microbes.

The Market is Moving

As the soil and climate crises become increasingly interconnected, industries are also charting a new course. In oil & gas and mining, there's a growing shift toward sustainable, integrated site clean-up practices. An independent review (Mazzurco-Miritana et al., 2025) highlights reduced costs and performance benefits of pairing clean-up technologies with organic soil amendments, such as biochar and bioremediation, to restore hydrocarbon- and metal-affected soils.

Additionally, each of the EPA's 10 regional offices implements a greener clean-up policy tailored to local requirements. The EPA and state agencies have further developed a green clean-up framework and principles that focus on five core elements associated with a clean-up project's environmental footprint.

The market is moving to greener solutions. Myno Carbon's biochar is rising to meet this moment.



A New Model for Regeneration

Our Biochar 3.0 solutions make land reclamation more profitable by reducing clean-up costs and unlocking new carbon offset revenue streams. The approach improves the social license to operate and provides a sustainable investment for the increasing amounts of capital that seek such opportunities.

The Invitation

This is the heart of our invitation. Myno Carbon is more than a renewable carbon innovator – we are delivering improved land recovery and regeneration outcomes, with a commitment to partner with organizations to create environmental and economic value. Whether addressing complex pollutants or restoring soil health for future land use, Myno works side by side with clients to accelerate recovery, reduce costs, and restore long-term land value. Together, we help you to regenerate.

This is more than a manifesto. It is a call to action.

About

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The journey that brought us here started with deep frustration at how slowly the world has moved to address pollution and climate change. Our CEO and co-founder, Thor Kallestad, began his career in environmental remediation before spending years in the oil and gas industry. He realized that true change would only come when economic, environmental, and technical realities aligned. Myno Carbon was created to accelerate that alignment. Our mission is as ambitious as it is necessary: to profitably reduce greenhouse gases at a scale to meaningfully impact climate change. Over the course of our journey, we've come to see clearly that one of the most effective ways to achieve our mission is to use engineered biochar to help clients, industries, and ecosystems remove toxic contaminants while sequestering carbon.

To get there, we are building a network of Carbon Removal Facilities (CRFs) that transform waste biomass into high-performance biochar and renewable energy. These facilities are designed not only to scale climate impact but to enable multiple new and sustainable remediation solutions.

The distance between damage and regeneration is bridged by bold, science-led action. This manifesto is just the beginning.

For media inquiries, partnerships, or pilot opportunities, contact:

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