Nature Tech x Voluntary Biodiversity Markets.

1. Voluntary Biodiversity Markets Face Critical Barriers to Scale.

Voluntary biodiversity markets are still at an early stage, with demand mostly opportunistic and most transactions happening on a small, pilot scale. Key building blocks—like a clear business case for buyers and confidence in the quality and availability of biodiversity credits—are not yet fully in place.

Challenges fall into three main areas.

1. **Demand:** Companies struggle with unclear claims guidance, difficulty setting actionable biodiversity targets, and uncertainty about how to determine credit volumes. A compelling business case for biodiversity credits is often missing.

2. **Supply:** High project costs, inefficient monitoring, and the lack of scalable technologies for biodiversity tracking hinder the generation of high-integrity credits at scale.

3. **Certification:** The absence of common principles, standardized methodologies, and transparent monitoring systems undermines trust, making it harder to establish credibility and comparability across projects.

Nature tech provides solutions to these challenges through the 5M framework: **Market Pressures** align policies and business goals with biodiversity; **Measurement & Monitoring** track ecosystem health and manage risks; **Modeling** turns data into actionable insights; **Material Change** enables tangible ecosystem interventions; and **Monetization** connects finance to conservation by linking biodiversity outcomes to economic systems. Together, these functions drive demand, build trust, and enable scalable, high-quality supply and certification.

2. Nature Tech Can Drive Demand for Biodiversity Credits.

Nature tech can provide tools for **Market Pressures,** helping companies align biodiversity goals with regulatory and societal expectations, and for **Monetization,** creating financial systems that connect biodiversity credits to conservation outcomes and make them accessible. These tools address key demand-side challenges by helping companies build clear business cases for biodiversity credits and integrate them into corporate strategies.

Here's a couple of examples -

Setting and Reporting on Biodiversity Targets: Platforms like **NatCap Research** map supply chains and identify biodiversity hotspots and ecosystem dependencies, such as soil health or water availability. By offering actionable, data-driven insights, these tools help companies set and report against targets aligned with frameworks like the Taskforce on Nature-related Financial Disclosures (TNFD) and Science-Based Targets for Nature (SBTN). Some targets and strategies might include the use of biodiversity credits.

Connecting Buyers to Projects: Platforms like Regen Network use Web3 technologies to connect buyers to projects. By creating eco-credits verified and traded on the Regen Registry, and deploying payments via blockchain, **Regen Network** increases the accessibility of credits to buyers.

3. Nature Tech Can Scale the Supply of High-Integrity Credits.

On the supply side, **Material Change** and **Modeling solutions** help to reduce costs and improve project design. These innovations help to scale high-quality biodiversity projects by improving economic viability.

For example -

Reducing project costs with automation and biotechnology: Companies like **Dendra Systems** are transforming large-scale ecosystem restoration with drones equipped for seed dispersal. These drones can cover vast areas rapidly, deploying seeds that are pre-treated or genetically optimized to thrive in challenging environments. This innovative approach minimizes labor-intensive planting costs and significantly improves project success rates, making large-scale habitat restoration more efficient and cost-effective.

Improving project design with analytics: Platforms like **Cultivo** complement these efforts by optimizing project design through geospatial data and analytics. By identifying ideal sites for biodiversity projects, these platforms improve critical aspects of planning, such as site selection. This data-driven approach increases success rates and enhances economic viability, ensuring that developers and investors achieve their goals with greater precision and fewer resources.

4. Nature Tech Can Build Trust Through Credible Certification.

Certification relies on robust **Measurement & Monitoring** and clear, standardized frameworks. Nature tech enhances credibility by providing the tools needed for accurate tracking and validation.

For example, eDNA technology, used by **NatureMetrics** helps set accurate biodiversity baselines by detecting traces of genetic material left by species in water, soil, or air. This precise, non-invasive method ensures biodiversity credits are based on measurable improvements, tracking changes in species and ecosystem health over time.

Enhancing Transparency and Trust: Digital platforms like **Terraware** offer real-time tracking and reporting, engaging stakeholders and ensuring data transparency. Responsible data management also respects the rights of Indigenous Peoples and Local Communities (IPs and LCs), fostering trust and inclusivity.

5. The Self-Reinforcing Cycle of Nature Tech in Biodiversity Markets.

Nature tech doesn't just address isolated challenges—it creates a self-reinforcing cycle that can drives market growth. For example - reliable monitoring systems build trust in biodiversity credits, making them more credible and increasing demand. As demand grows, it attracts investment, which helps develop

better nature tech tools. These advanced tools make it easier to create and track high-quality biodiversity credits, ensuring transparency and consistency.

By addressing the interconnected challenges of demand, supply, and certification, nature tech can transforms voluntary biodiversity markets into a scalable, trusted, and impactful mechanism for global conservation.