



A Research-Driven Marketing Strategy and Regenerative Packaging System

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Introduction: Inspiration and Early Ideation

The foundation of this project began with two long-standing personal interests of mine: hiking and sustainable practices. I cannot say that I am the most seasoned hiker, as I have spent my twenty-one years living primarily in Texas and Florida, but over the past four years, I have visited the Great Smoky Mountains three times, hiked and camped throughout areas of the East Coast, and am planning a trip to Glacier National Park this coming summer. Experiences like these have shaped how I interact with the environment and have strengthened my appreciation for the preservation of protected landscapes. As a graphic designer, I often find myself closely inspecting packaging design, particularly in national park visitor stores when I can. Packaging that incorporates innovative or sustainable materials draws me in immediately, from plantable flower packaging to bamboo trekking poles. These design approaches sparked a curiosity about how sustainability can be communicated not only through messaging, but through the materials behind a product itself. Through these observations, I have become increasingly interested in sustainable practices within outdoor retail environments, particularly in hiking snack products, and more broadly in the role design plays in shaping consumer behavior and influencing environmental impact.

However, while visiting parks and outdoor destinations, one contradiction repeatedly stood out to me. National parks exist to preserve natural environments, yet the sustenance that supports hikers often relies heavily on its disposable quality. Food containers and plastic wrappers are common within concessions and even park stores. These materials are convenient, but contribute to waste that lingers in environments meant to remain protected, especially when no proper waste receptacles exist along most trails.

During the early stages of brainstorming for my capstone project, I wanted to explore how design could help address this contradiction. Rather than focusing only on visual branding, I wanted to explore the broader role that brand design, packaging design, and marketing strategy could play in encouraging more sustainable systems. The goal was not only to create a compelling brand identity, but also to imagine a new way that packaging could interact with the environments in which it exists.

Influence of Circular Design and *Cradle to Cradle*

A major influence on the project was the book *Cradle to Cradle: Remaking the Way We Make Things* by William McDonough and Michael Braungart. This book critiques the way modern industrial systems approach sustainability. Rather than designing products to be part of natural cycles, most products are created with linear lifecycles: they are produced, used, and eventually discarded as waste.

One of the most important concepts that inspired me in *Cradle to Cradle* is the critique of “less bad” sustainability. The authors argue that many environmental initiatives attempt to simply reduce damage rather than rethink the system itself for the sake of convenience. Take recycling for example, it’s often treated as the primary solution to waste. While recycling *can* reduce *some* environmental harm, it does not fundamentally eliminate the problem of materials being stuck in this endless cycle of production to discarding to overall creating more of an environmental burden.

This idea challenged how I initially thought about sustainability. If the best outcome of a product is simply that it does “less harm”, then the system itself is flawed. McDonough and Braungart advocate for design systems where materials become nutrients within either *biological*

or technical cycles. In biological cycles, materials safely return to the earth and support natural ecosystems, which is exactly the direction I went in with EcoSpore.

Mycelium and Regenerative Material Inspiration

While researching materials that might support a truly circular design model, I became interested in the potential of mycelium-based packaging, which my capstone mentor, Professor Lodi, brought to my attention via The Dieline. Mycelium is the root structure of fungi and can be grown into solid forms by combining it with agricultural by-products. During growth, the mycelium acts as a natural binding agent, creating a strong but biodegradable material (Ecovative).

Companies such as Ecovative have already developed mycelium packaging systems that can replace foam packaging inserts, and their website is where I spent most of my time ideating, along with other mushroom packaging manufacturers such as Magical Mushroom Co. and The Mend. These materials are compostable and can decompose 100% naturally in the ground.

But still I ran into this issue of “less bad” sustainability. How could I create something that actively *gives back* to the environment? And so, the introduction of live spores in the packaging takes it one step further than compostability. Instead of simply decomposing, the material could theoretically retain biological viability and actively support new local fungi growth after disposal. This concept led to the core idea behind EcoSpore.

Project Overview

EcoSpore is a conceptual brand that uses mycelium-based packaging that retains biological viability. The packaging is infused with live spores that remain dormant under normal storage conditions but can activate once returned to natural soil environments. The goal of the project is to replace single-use plastic packaging within national parks with a regenerative

alternative. Instead of becoming permanent waste, the flagship product, Trailhead Mix, is designed to safely return to the earth and contribute to ecosystem growth.

The capstone combines several components:

- A complete marketing plan outlining positioning, pricing, promotion, distribution strategies, and more
- Packaging design prototypes exploring materials, form, and user experience
- A visual brand identity system, including logo design, typography, and color palette

Ultimately, the project demonstrates how thoughtful design and strategic marketing can encourage more sustainable consumer behaviors.

Design Decisions

The visual language of EcoSpore is intentionally restrained, allowing the material and concept to be at the forefront of conversation. The color palette – composed of deep brown, beige, sage green, stone blue, and muted brick red – draws direct inspiration from naturally occurring mushroom tones, informed by the *Mushroom Color Atlas* (Beeler). The packaging itself emphasizes the organic texture inherently produced by mycelium, with coloration achieved through plant-based pigments to reinforce the authenticity of the material. Across social and print applications, a subtle texture overlay is incorporated to maintain visual consistency and further echo the natural irregularities of the product itself. This approach intentionally avoids the aesthetic of over-designed or “greenwashed” products. The branding system supports this through a focus on education, ensuring that users can easily understand both the function and lifecycle of the packaging. Typography selections were made with similar intention; the chosen

typefaces, Roca and Jalapeno, prioritize legibility within an educational context while maintaining a slightly playful, organic quality in display applications.

After establishing the conceptual and visual foundation of EcoSpore, the project expanded into a strategic marketing plan that supports both the product's functionality and its behavioral impact. Rather than simply presenting a product, this phase focused on how branding, positioning, and distribution could encourage adoption of a regenerative system within national parks.

Strategic positioning of EcoSpore

EcoSpore is intentionally positioned as a *regenerative* brand rather than simply sustainable. Instead of focusing on reducing harm, as I mentioned above, the project explores how packaging can actively contribute to ecosystems by returning to the earth and supporting new growth. This distinction differentiates EcoSpore within an increasingly saturated sustainability market.

The decision to place EcoSpore within U.S. national parks was driven by both value alignment and environmental control. These spaces already promote conservation, increasing the likelihood that users will engage with the Trailhead Mix packaging as intended. Limiting distribution to select parks and seasonal releases further reinforces the product's intentionality while supporting logistical feasibility and perceived value.

Target Market Rationale

The target market for EcoSpore is defined by values and behavior rather than demographics alone. Eco-centric consumers are more likely to act as early adopters of the product, as they are already inclined to read packaging, consider environmental impact, and

support small mission-driven brands. Because the success of the product relies on proper user interaction, behavior is absolutely critical.

Pricing Strategy

EcoSpore falls at a price point of \$14, reflecting both the cost of innovative materials and the added experiential value of the product. The pricing is reflective of competitor mycelium products that I listed above such as Magic Mushroom Company and Mushroom Packaging. This pricing strategy is based on the understanding that the target audience is willing to pay a premium for products that align with their values.

This price additionally accounts for several key factors, including the cost of the food product itself, labor associated with producing mycelium-based packaging, and the higher expense of regenerative materials compared to conventional plastics while still maintaining a 25-35% retail margin at the end of the day. This retail margin was informed through CPG margin benchmarks (NYU Stern), which analyzes average margins across the market. I worked to position EcoSpore within those premium ranges. While aligning with these industry standards, EcoSpore also occupies a space in the market that sustainability brands do not typically reach: recent post-grads and early-career professionals.

Distribution Strategy

Distribution is intentionally limited to select U.S. national parks, reinforcing EcoSpore's alignment with protected natural environments and positioning it as part of the visitor experience rather than a generic retail product. The initial launch is scheduled for June 2027, aligned with peak visitation, and will operate as a limited-time three-month release. This timeframe responds mostly to both biological constraints due to the products viability but also strategic positioning, framing EcoSpore as a premium, seasonal offering. The controlled park environment also

supports effective implementation of the return system through designated disposal areas, signage, and staff involvement, while placement is restricted to parks where mushroom species naturally occur to ensure ecological compatibility.

Operationally, distribution prioritizes material viability through temperature-controlled, insulated shipping and time-sensitive delivery with ULINE. This time-sensitive delivery is warranted because of the products' viable quality (LebanonTurf). Inventory is released in small, controlled cycles from June through September to maintain spore viability. Leading up to launch, a promotional rollout begins in Q1 and Q2 of the fiscal year, utilizing social media and print materials distributed through sustainable retailers such as REI, Patagonia, Eddie Bauer, Columbia...etc. This phased approach builds awareness.

Closing Remarks

EcoSpore represents the intersection of design, sustainability, and market-forward thinking, demonstrating how packaging can move beyond one use to become an active participant in environmental systems. Through a research-driven process grounded in circular design principles, this project challenges the notion that sustainability is simply about minimizing harm, instead proposing a model in which products are designed to contribute to their ecosystems. By integrating material innovation and a targeted marketing strategy, EcoSpore offers a compelling alternative to single-use packaging within national parks. Ultimately, this project reflects the potential of graphic design not only to communicate ideas, but to shape systems, influence behavior, and create meaningful environmental impact that is grown to give back!

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