

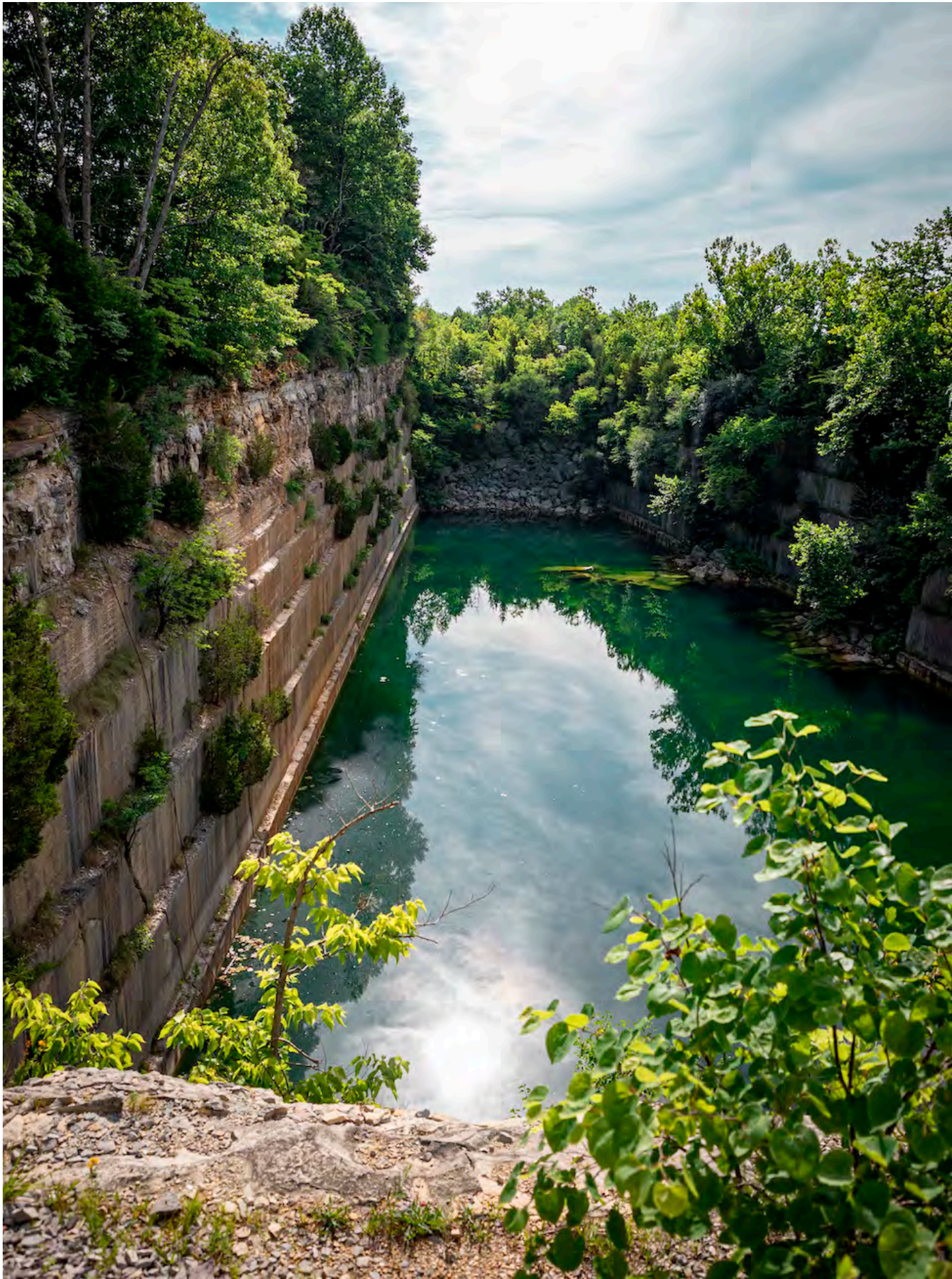
Case Study



FROM STONE TO SUSTAINABILITY

UNEARTHING THE POTENTIAL OF ECOLOGICAL RESTORATION
OF QUARRIES





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INTRODUCTION

In the natural stone industry, quarrying often garners unwarranted misconceptions. The narrative of quarrying isn't just about extraction; it's also a tale of sustainability, ecological restoration, and industry leadership.

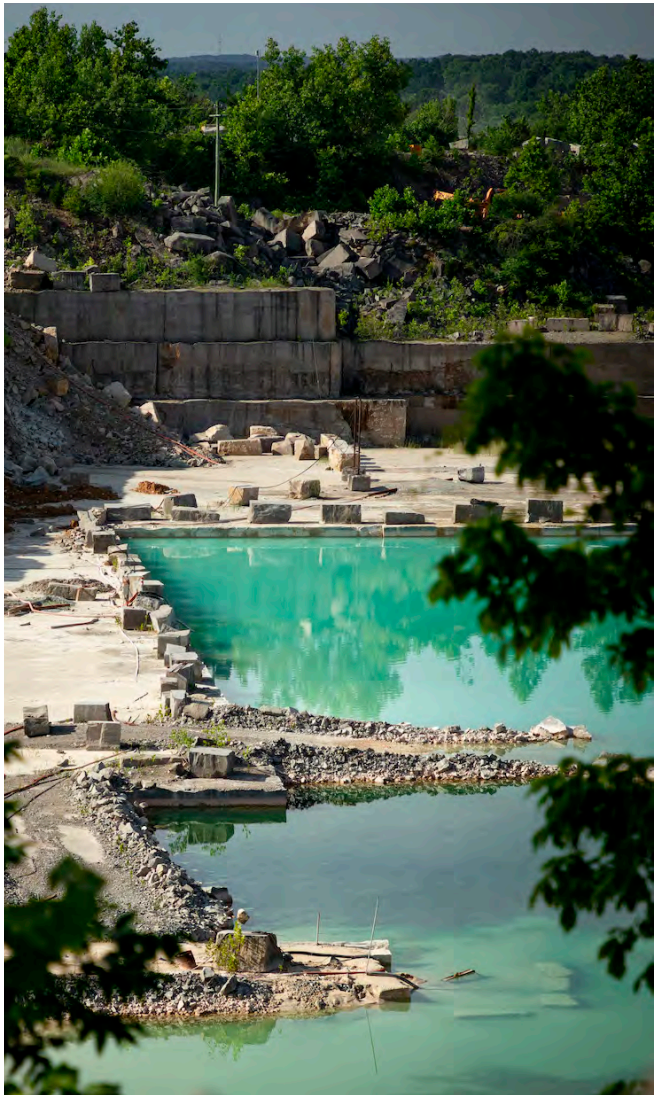
The Quarry Gardens at Schuyler are a testament to what's achievable when nature's ingenuity meets human intent. Adjacent to Polycor's **ALBERENE SOAPSTONE™** quarry in Virginia, this garden challenges conventional perceptions, transforming what was once an industrial activity zone into a canvas of ecological diversity. The result? A vibrant ecosystem teeming with life, a sanctuary where freshwater bodies coexist with sun-warmed rockfaces, creating habitats rich in biodiversity.

Such endeavors not only reflect the transformative power of stone quarry sites but also reshape how we view the natural stone industry as a whole. Far from being mere disruptors, with foresight and responsibility, and certifying sites to the Natural Stone Institute's NSI-373 standard, they can be the stewards of biodiversity. In leading this paradigm shift, Polycor isn't just paving a path for itself but lighting the way for the entire sector, underscoring that sustainability in quarrying isn't just a lofty ideal—it's a tangible, achievable reality.



THE MISUNDERSTANDING OF QUARRYING

While quarrying, like all extractive industries, can have environmental impacts, there are several myths or misconceptions about the industry. An important aspect to consider is that the modern world and the products we use daily to make current life possible are widely dependent on mining operations. The question is less about whether to quarry or not — it is about being responsible. Let’s take a look at some common quarry myths..



MYTH

Quarries permanently destroy the landscape.

FACT

With responsible quarry management, ecological restoration, and rehabilitation, quarries can be transformed into parks, entertainment venues, or conservation areas.

MYTH

Quarry operations always lead to erosion and water pollution.

FACT

Proper quarry management includes measures to minimize and manage erosion and runoff. Techniques like maintaining vegetation, creating retention ponds, and managing stormwater runoff can effectively combat these issues.

MYTH

Quarries inevitably lead to a loss of biodiversity.

FACT

While quarrying can initially change the local ecosystem, it’s possible to conserve and even enhance biodiversity. Properly managed quarries can become habitats for various species. Some studies have found rare and threatened species within quarry sites. Polycor and other companies actively work to minimize their footprint and restore habitats.

MYTH

All quarries are unsightly and remain so even after they’re closed.

FACT

Once the operational lives of quarries are over, they can become beautiful public landmarks. They can be transformed into lakes, parks, resorts, or recreational trails and hiking sites.

MYTH

Quarrying always leads to irreversible environmental damage.

FACT

While quarrying can cause environmental disruption, the degree and permanence of the impact depends on management practices. Ethically-minded companies like Polycor emphasize land maintenance, ecosystem conservation, erosion control, and responsible closure practices to minimize and rectify environmental impacts.

MYTH

Quarries contribute nothing positive to local ecosystems.

FACT

Active quarries can provide temporary habitats that support diverse species. Over time, as habitats change within the quarry, they can support different species, increasing the area’s biodiversity.



Responsible quarry management can mitigate many environmental impacts, and advocacy for responsible quarrying is crucial to ensure the industry remains sustainable and environmentally conscious.

Modern quarrying has evolved technologically, with companies like Polycor significantly emphasizing sustainable and environmentally responsible practices. The natural stone industry is increasingly recognizing the value of not only extracting resources but also doing so in a way that minimizes environmental impact and ensures the land’s future use. The development of ANSI/NSI 373 Sustainable Production of Natural Dimension Stone examines and verifies numerous areas of natural stone production, effectively improving the baseline for the environmental performance of natural stone.

By leveraging best practices, utilizing the latest technology, and adhering to strict environmental guidelines, many quarries today exemplify how the natural stone industry can coexist harmoniously with nature and even enhance certain aspects of local ecosystems.

THE SUSTAINABILITY OF NATURAL STONE

In the world of quarrying, Polycor stands as a beacon of environmental stewardship and innovation. As the global demand for building materials continues to rise, so does the need for sustainable extraction methods that safeguard our planet's delicate ecosystems. Recognizing this imperative, Polycor has firmly established itself as a leader in sustainable quarrying practices. With a holistic approach that encompasses every facet of the quarrying process, from site selection to eventual closure and rehabilitation, Polycor's methods serve as a gold standard in the industry. Our practices not only underscore the viability of environmentally conscious operations but also set a precedent for others to follow. Here are some examples of how Polycor exemplifies good stewardship practices in the field of quarrying.



MINIMIZED FOOTPRINT

Polycor prioritizes minimizing its operational footprint and sustaining site integrity throughout its operational use by diligently adhering to conservation and maintenance plans.

EROSION AND RUNOFF CONTROL

Natural processes like erosion and runoff are inherent to quarrying but can be managed responsibly. Techniques such as maintaining topsoil, preserving vegetation, and creating retention ponds can effectively combat these challenges, ensuring local waterways and ecosystems remain undisturbed.

ECOSYSTEM CONSERVATION

Actively conserving surrounding areas of quarries, such as wetlands and forests, or implementing forest management

practices that prioritize the protection of critical ecological functions and promote a diversity of wildlife and other species not only showcases environmental consideration but can also have operational advantages. By keeping the disturbed area limited, researching local wildlife populations, and minimizing the removal of native vegetation, quarries can work in harmony with the local environment.

REHABILITATION

The commitment doesn't end when the quarrying does. Responsible companies implement quarry closure practices that prioritize public health, safety, and the recovery of the natural environment.. Whether by redefining the natural setting within the existing context or repurposing the site for community use, there is an emphasis on leaving a positive and sustainable legacy.

REUSE AND REPURPOSING

Maintaining cleanliness and organization at a quarry site involves repurposing and reusing quarried materials. This not only reduces waste but also provides sustainable solutions like using excess stone for building or landscaping.

EDUCATIONAL AND COMMUNITY BENEFITS

Former quarry sites can offer invaluable benefits to the community. They can be transformed into educational sites, like Quarry Gardens, turning what was once an extractive site into a long-term public and interactive resource for learning.

QUARRY GARDENS AT SCHUYLER

A MELDING OF NATURE AND INDUSTRY



Because the natural stone industry doesn't use chemicals in its processes, quarries don't require soil remediation and are easy to reclaim. A notable example is the Quarry Gardens at Schuyler adjacent to our **ALBERENE SOAPSTONE™** quarry in Virginia.

Nestled in the foothills of the Blue Ridge Mountains in Virginia, Quarry Gardens at Schuyler stands as a testament to the harmonious relationship between nature and industry. This 40-acre site, part of a larger 600-acre natural preserve, paints a vivid picture of the transformative power of dedicated conservation.

Quarry Gardens was far from what it is today when it was first discovered by current owners Armand and Bernice Thieblot in 1991. The land had served as a makeshift dump site for the local population and was littered with household debris.

The Thieblots spent the next two decades dedicated to restoring its natural beauty, clearing truckloads of trash, and carving out trails on the weekends. The former quarries on the property emanated a unique charm. A transformative visit to the Butchart Gardens in Brentwood Bay, British Columbia, where limestone quarries had been reborn as lush gardens, became the Thieblots' inspiration.

By 2015, 40 acres were designated specifically for the Quarry Gardens, with protective measures such as a Virginia Outdoors Conservation Easement established.

It isn't merely the return of nature that makes this site unique, but how the imprints of its quarrying past integrate seamlessly with the native plants, creating a distinctive, thriving environment.

This transformation of an abandoned quarry into a lush ecosystem shows the natural stone industry's potential to be a positive force for biodiversity. The Quarry Gardens at Schuyler has become a living example of how quarrying can coexist with, and even boost, biodiversity.

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We decided — for practical and environmental reasons — that we would use the good bones of our quarries to frame a showcase of locally native plants.

Bernice Thieblot

Owner, Quarry Gardens at Schuyler

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NATURE’S INGENUITY

The quarries, with their deep pools, have evolved into freshwater ecosystems, attracting a diverse range of aquatic life, and their rocky edges, warmed by the sun, have become havens for many species of reptiles. The juxtaposition of water, open rockface, and surrounding woodland creates edge habitats known for their ecological richness.

Meanwhile, the area’s previously disturbed soils and unique geological characteristics foster the growth of specialized flora, some specifically adapted to the mineral- rich conditions. Many plants that thrive here are hard to find elsewhere, making this reclaimed land a botanist’s dream.

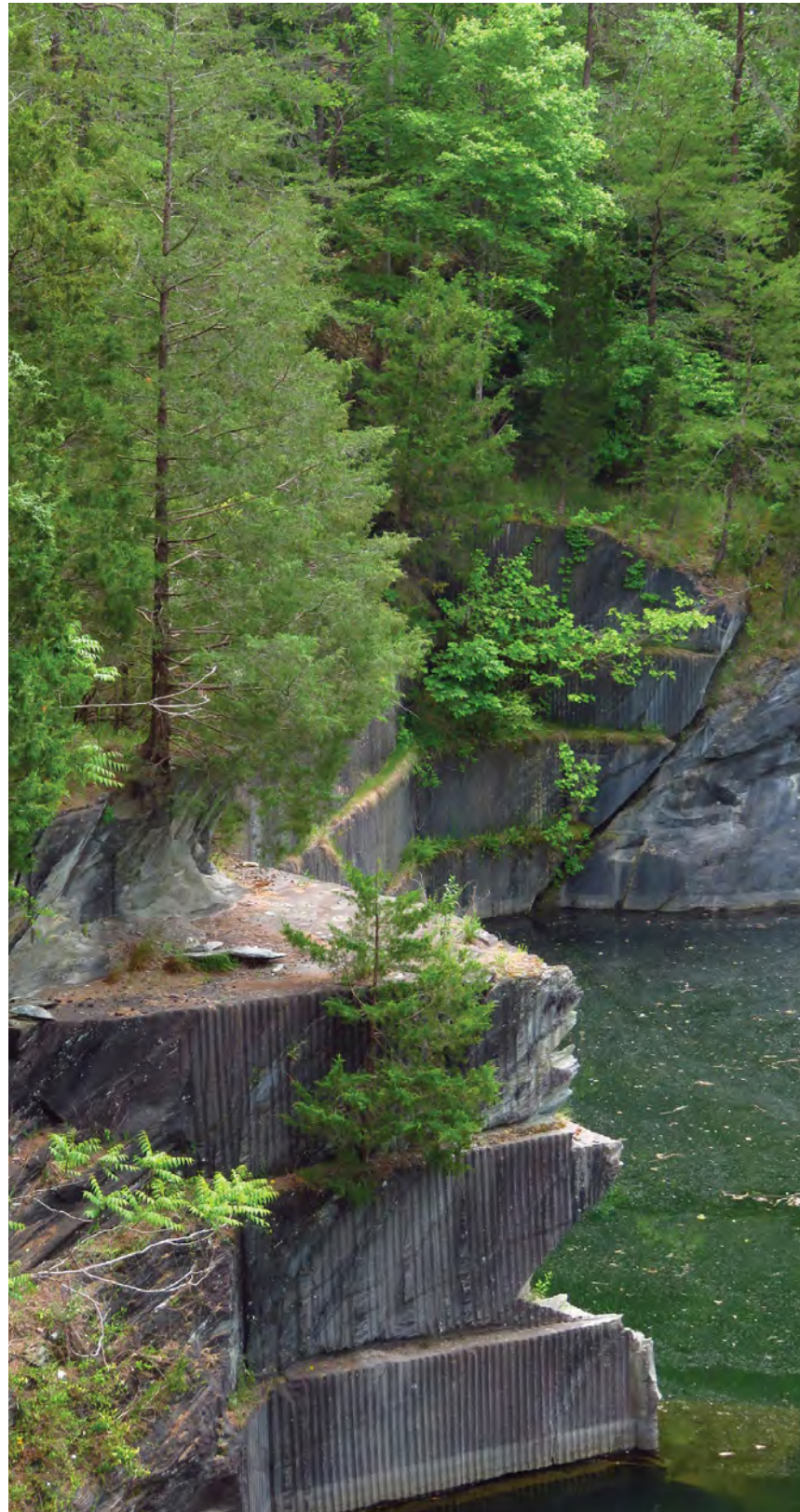


One of the most astonishing aspects of the Quarry Gardens is the unexpected sanctuary it provides for wildlife. From birds seeking the open skies above the quarry pits to mammals that find shelter among the undisturbed stretches of the gardens, the reclaimed quarry supports an array of wildlife as diverse as its plant life. Nearly 1,000 species — encompassing flora and fauna — are thriving at the site today.



A TESTAMENT TO POSSIBILITY

Quarry Gardens at Schuyler embodies the transformative power of thoughtful reclamation. It shows what's possible when human vision, dedication, and respect for nature come together. The gardens offer an ecosystem that's unlike any other and a compelling testament to nature's capacity for renewal. It challenges our perception of what's possible in ecological restoration and prompts us to reimagine how we view areas of industrial activity. We should recognize the potential these areas hold, not as scars upon the land but as canvases awaiting nature's masterpiece.



The magnesium-rich steatite (soapstone) deposit creates an ultramafic soil that results in an alkaline pH not typical of the rest of the Piedmont region of Virginia. With slightly alkaline soil and the plant communities it fosters, the Schuyler Quarry Garden is the premier native plant garden in the area.



A TRIPLE WIN FOR THE ENVIRONMENT, ECONOMY, AND SOCIETY

RECLAIMED QUARRIES

ENVIRONMENTAL BENEFITS

Reclaiming quarries transforms the spaces into vibrant green spaces and restores diverse ecosystems. These revitalized areas not only serve as sanctuaries for local and endangered wildlife, including aquatic species in water-filled quarries but their unique topography fosters ecologically rich microclimates and edge habitats. Additionally, the strategic design of these reclaimed landscapes combats erosion, filters pollutants, and replenishes local aquifers, enriching the broader environment.

ECONOMIC IMPLICATIONS

Reclaiming quarries can be a boon to the economy. The rehabilitation process can create jobs, from the groundwork stages to long-term maintenance. Once reclaimed, these areas often attract tourists, birdwatchers, researchers, and nature enthusiasts, boosting local tourism revenues. The development of parks, such as Brownstone Adventure Sports Park in Portland, Connecticut, or the Nelson Ledges Quarry Park in Garrettsville, Ohio, are examples of a recreational and entertainment venue that helps generate income for the local economy.

SOCIAL AND COMMUNITY BENEFITS

Reclaimed quarries can serve as a focal point for community activities. At Quarry Gardens, visitors can learn about the history of quarrying and the benefits of stone as a natural resource. The on-site educational center explains the importance of both these elements in the development of the area, as well as the economic benefits they brought to the town. Whether it's a park where families gather for picnics, a trekking spot for hiking enthusiasts, or a concert venue nestled amidst nature, these spaces cater to community needs. As educational hubs, they provide a destination for schools and universities to conduct field trips and for researchers to delve into specialized ecosystems. They provide a space for community members to connect with nature, fostering a sense of collective ownership and responsibility towards local environments.

Quarry sites can invigorate economies, strengthen communities, and serve as beacons of what's achievable when we approach the natural stone industry with foresight, responsibility, and innovation.



NATURAL STONE INDUSTRY

AN ALLY FOR BIODIVERSITY

It may seem counterintuitive to link the natural stone industry with biodiversity. After all, quarrying, the primary activity in this sector, involves extracting stone from the earth, which can be viewed as altering natural habitats. However, with responsible management and a forward-thinking approach, the natural stone industry can play a pivotal role in promoting and enhancing biodiversity.

RESPONSIBLE LAND MAINTENANCE

Polycor has set a benchmark in sustainable quarrying by emphasizing minimal operational footprints. Our commitment ensures that only necessary areas are disturbed and surrounding habitats are preserved. Polycor's forest management practices prioritize the protection of critical ecological functions and promote a diversity of wildlife and other species.

One example is our quarries in Vermont, where forest management has improved landscape diversity, wildlife travel corridors, and habitat connectivity between Vermont and Quebec. Through maintenance and conservation plans tailored for each site, the area's ecological integrity is maintained throughout the quarry's operational lifespan and beyond

CREATION OF PIONEER HABITATS

Even active quarries can contribute to biodiversity. The constantly changing landscape of an operational quarry creates what are termed "pioneer habitats." These transient environments are often colonized by specialized species that thrive in these conditions.



COMMUNITY AND RESEARCH INVOLVEMENT

By inviting researchers, local communities, and conservationists to participate in the site management and reclamation process, the industry ensures that its practices are rooted in local ecological knowledge and cater to the specific needs of regional biodiversity.

POSITIVE ECONOMIC IMPLICATIONS

It's worth noting that biodiversity enhancements also have economic benefits. Rich ecosystems can boost local eco-tourism, providing an additional revenue stream at the end-of-life of the quarry operation. Simultaneously, a commitment to biodiversity can enhance a company's reputation, opening doors to markets and partnerships that value sustainability.

The natural stone industry, with its vast landscapes ripe for rehabilitation, is uniquely positioned to make a substantial positive impact on global biodiversity. By viewing quarries not just as extraction sites but as future ecosystems, and by integrating biodiversity goals into their operational ethos, companies like Polycor ensure that they give back to nature, often more than they took.

POLYCOR

PIONEERING SUSTAINABLE PRACTICES IN THE NATURAL STONE INDUSTRY



In any industry, change and progress are often driven by its leaders. The choices and standards set by these frontrunners shape the industry's trajectory, influencing practices, policies, and perceptions. In the world of natural stone quarrying, Polycor has emerged as one such innovator, lighting the path to sustainability for others to follow.

Polycor's dedication to environmentally responsible quarry practices serve as a guide for others. By integrating environmental protection into our business model, we've shown that economic growth and environmental stewardship aren't mutually exclusive. This stance challenges the status quo and prompts competitors to elevate their practices.

Sustainability isn't just about reducing carbon footprints. It encompasses a holistic view that includes social responsibility, economic viability, and environmental stewardship. Polycor's practices, ranging from minimizing operational footprints to active community involvement, embody this comprehensive

approach, emphasizing that every facet of business operations can and should be sustainable.

Our approach dispels the myth that environmentally friendly practices come at the cost of profitability. By successfully merging sustainability with profitability, we've set a persuasive precedent for others to follow.

In an industry often criticized for its environmental impacts, Polycor has taken strides in minimizing harm and actively enhancing biodiversity. Our quarry management, site conservation, and forest management plans are a testament to our commitment.

By pioneering sustainable practices, we don't just transform our own operations; we reshape the very fabric of the industry. As we set new standards, innovate, and lead by example, we pave the way for a more sustainable and responsible future for the entire natural stone industry.



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Our natural stones are quarried and processed in the U.S., and Canada.

