

# Annual Benefit Report 2024



# FROM THE PRESIDENT

You know those people who leave their work-related thoughts behind as soon as they log off for the day? For better or worse, I am not one of those people.

I find myself frequently thinking about Biohabitats and what we are trying to accomplish, and I'll admit that at the beginning of 2024, I had a lot on my mind. Having revised our ownership, leadership, and governance structures the previous year, Biohabitats was truly stepping into a new era. Entering 2024 in a role previously held only by our visionary founder and industry pioneer, Keith Bowers, I had many questions to ponder: How would our team members adjust to so much change? What would your new leadership team bring to the table? Would we continue to build upon our collective strengths and impact? Would we preserve our unique culture? Would our clients perceive us any differently?

Today, as I reflect on 2024, my mind is not laden with questions. Instead, I am full of pride, gratitude, excitement... and resolve. That is because our team members did much more than step into new territory last year; they stepped up to it... in every way.

Across disciplines and departments, everyone—from our newest junior team members to practice leads with multiple decades under their belts—carried forward our innovative work and culture. Existing and

new clients across all bioregions entrusted us to put projects in the ground and plans in place to protect and improve biodiversity, climate resilience, justice, and clean water. Many team members filled new roles, embraced new responsibilities, and shared their own vision and leadership. All the while, we held tightly to our shared values and stayed true to our mission and purpose. The innumerable ways in which our team showed up in 2024 are impossible to capture in one Annual Benefit Report, but I hope you see evidence of our impact in the following pages.

In addition to thinking about our future with hope and ambition, I am also a realist, and 2025 certainly brings uncertainty. But there is one thing I am not worrying about. Working with nature for more than four decades has taught us not to be distracted by fads or political shifts. I am confident that, like the natural systems we protect and restore, our own ecosystem will remain regenerative, diverse, resilient, and awe inspiring—in 2025 and beyond.

Let's keep doing the good work.

*Ted Brown*



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Our mission  
is to restore  
the Earth  
and inspire  
ecological  
stewardship.

We inspire communities to rediscover a sense of place through preserving indigenous ecosystems, restoring biological diversity, and embracing ecological stewardship.

Behind all of our work is an intention to respect Earth's ecological limit, heal damaged ecological processes, and catalyze mutually beneficial relationships among the land and all forms of life. Our five core values and three drivers embody the spirit of our culture. They serve as the foundation for how we do what we do.

# OUR VALUES

## REVERE WILD NATURE

Nature, and the full array of life this planet has to offer, is at the very core of what we are about. Increasingly we find ourselves living in an artificial world. A world where ecosystem processes are compromised and biodiversity is marginalized and commoditized. Nature, in its wildest and raw form, is at the essence of what we are about. Wild nature provides a blueprint for conserving, restoring, and regenerating the full expression of biological diversity and ecosystem functions to ensure our survival. It is at the heart of our collective souls.

## HEAL COMPASSIONATELY

Nature is under assault. We are entering the next great extinction of flora and fauna. Our climate is shifting faster than ever before, and many of our ecosystem processes are beginning to break down. We know it's not enough to slow down or even halt these impacts. We know that what we need to do is heal by making whole our relationship with the earth and each other. The core of what we do—conservation, restoration and regeneration, is about healing. And healing embodies a sense of caring—caring for the land and caring for each other.

## PRACTICE WHOLENESS

Life on Earth is interconnected, and that damage to a part entails damage to the whole. Thinking and acting whole means feeling a sense of connection to all of life—to other people, to new ideas, to the world around us. We have a responsibility to honor our obligations to future generations of all beings and to take their interests into account when we reflect on the consequences of our actions. Accordingly, our virtues are cooperation, respect, prudence, foresight, and justice. Living by the principle of reciprocity, giving as we receive, re-creates the richness of life.

## ACT WITH UNCOMPROMISING INTEGRITY

Integrity in our work is doing our best to restore biodiversity and ecological processes. We must seek ways to employ science to objectively evaluate the performance of our projects, accept our findings and continuously learn. No matter what we do, if we don't have integrity then none of our innovation, creativity, passion, commitment, synergy, or affirmation for life will mean anything to our constituency. While science should lead the way, it must be tempered by keen observation and the stories that are borne from traditional ecological knowledge. We must do what is right, even when it is difficult or less profitable.

## EVOLVE TO BE THE BEST

Everything on this earth is in a continuous state of evolving, refining, improving, adapting, enhancing... changing. If we aren't evolving, we aren't relevant. Being inquisitive, curious, and probing should be encouraged and celebrated. As we evolve, we will fail, and that is many times the most important part of evolving. Learning from our successes and failures is built into everything we do. In order to be our best, we must encourage testing, objective analysis, tinkering, innovation, and creativity.

# PERPETUATING OUR PURPOSE

We are part of a movement to transform business into a source for creating conditions conducive to life.

2024 was our first year operating under ownership by a “Perpetual Purpose Trust” or “PPT.” A PPT is a form of non-charitable trust where the beneficiary is not a person, but the company’s purpose. Like a benevolent owner who will never retire, die, or take profits out of the business, the PPT owns the company indefinitely, allowing the company to focus on running a healthy, sustainable business that uses profits to further its mission and benefit its stakeholders. With PPT ownership, Biohabitats can never be bought or sold. We are beholden not to shareholders, but to our purpose.

In transitioning to this type of ownership in 2023, we defined our purpose:

**Restore nature, protect and conserve biodiversity, inspire love for wild places, and generate a financial return on our investment while operating as an authentic representation of our core mission and values.**

Unlike most corporations, who must prioritize and maximize shareholder value, we must uphold and stay true this purpose. Five key Trust objectives provide a roadmap for doing so.

We inherently strive toward all these goals—often several at a time—through our daily work, governance, and operations. For the purposes of this Annual Benefit Report, however, we feature stories that help illustrate our progress toward each specific objective.

1

Advocate for the innate Rights of Nature and Ecological Democracy.

2

Undertake work that protects and conserves biodiversity, restores and regenerates natural systems, and rights environmental injustices.

3

Cultivate an interdisciplinary team comprised of a balance between the sciences, engineering, and construction.

4

Be just in compensating all Team Members, including sharing profits with active stakeholders, Nature, and the communities we touch.

5

Operate Biohabitats as a learning organization that embraces a diverse, equitable, and inclusive culture, supported by self-management, wholeness, and evolutionary purpose.

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## OBJECTIVE 1

Advocate for the innate Rights of Nature and Ecological Democracy.

We always strive to place wild nature and more-than-human species at the forefront of our work, because we believe they have a right to exist, thrive, and have a voice when it comes to projects involving and impacting them. That, we believe, is ecological democracy.

In addition to our own advocacy for nature, we also strive to include in our work the perspectives, voices, and knowledge of those with deep connections to a place and its more-than-human inhabitants: Indigenous peoples and long-time community members.

### GUIDANCE FROM THE LAND'S ORIGINAL STEWARDS

#### MARIPOSA FOREST MANAGEMENT PLAN, MARIPOSA, CA

Located in the foothills of the Sierra Nevada, Mariposa, California is a gateway to Yosemite National Park. For thousands of years, however—long before Spanish missionaries named the area “Las Mariposas” for its abundant butterflies, and even longer before the 1848 Gold Rush—Native Americans, including the Southern Sierra Miwuk people, relied upon and stewarded the natural resources of these lands. Their relationship with the land was one of reciprocity, shaped by deep ecological knowledge and continuous observation. Through generations, the Southern Sierra Miwuk maintained oak woodlands, chaparral, meadows, and riparian zones by carefully using fire, harvesting sustainably, and, through land management, ensuring that biodiversity thrived in a state of balance. Tragically, the influx of fortune seekers to the region led to the exploitation and degradation of those resources—and the land dispossession of the Southern Sierra Miwuk community.

From its initial failure to honor treaties signed in the 1850s to its denial of federal tribal recognition in the 1980s—a denial that has persisted to this day—the U.S. government disregarded the Southern Sierra Miwuk. At the same time, Mariposa had turned its back on one of the area's important natural systems: Mariposa Creek. The creek and its

surrounding hills of oak and manzanita woodlands were degraded by dredging, gold mining and logging, ranching, the spread of non-native invasive species, and fire suppression. The neglected creek corridor was relegated to the City's backside. The loss of traditional stewardship, including frequent low-intensity cultural burns, contributed to the unchecked accumulation of fuels, making these landscapes more vulnerable to catastrophic wildfire and flooding.

Fortunately, by the end of the 20th century, the community of Mariposa began to turn its attention to the undervalued creek corridor and hillside. By 2017, they had developed the Mariposa County Economic Vitality Strategy, a framework centered on the core values of community, cultural identity, and sense of place. In 2019, the County crafted the Mariposa Creek Parkway Master Plan to guide the evolution of Mariposa Creek as an amenity for locals and visitors. Over the last several years, we've been honored to provide ecological support on several teams working to bring this master plan to life. All of our contributions to this work, whether through assessment, planning, or design, involved the incorporation of nature-based solutions and potential climate adaptation and mitigation needs into recreational and restoration planning.



Through these opportunities we came to appreciate the diversity and breadth of communities with close connections to Mariposa's natural areas, including the Sierra Foothill Conservancy and Southern Sierra Miwuk Nation. In 2024, these partners invited Biohabitats to collaborate in the development of a culturally conscious forest management plan for the Mariposa creek's riparian zone and uplands. Many ecosystems in this area had been fire-adapted or fire-dependent, but a history of management, human activity, and fire suppression have not only impacted habitat and introduced invasive species, but in some cases, altered the natural fire regime and made them more vulnerable to increasing extreme wildfires.

The Southern Sierra Miwuk are linked to the natural patterns of the region's landscape. For millennia, the Tribe stewarded the land through careful observation and experimentation that balanced habitat diversity, food and materials production, and cultural practices. Historically, cultural burns were used to maintain open-canopy oak woodlands, encourage the growth of key food and fiber plants, reduce acorn pests, and prevent fuel buildup. The cessation of these traditional practices contributed to denser, less resilient forests. Recognizing this, the Mariposa Forest Management Plan incorporates Miwuk stewardship principles, balancing ecological restoration with cultural renewal.

Guided by the Tribe, we poured through publicly available, peer-reviewed resources (including key papers by ethnobotanist Kat Anderson) to better understand the tribal stewardship practices and integrated findings into the plan. The Tribe reviewed the plan to ensure consistency with their cultural values and knowledge. The Plan includes recommendations for fire management, emphasizing controlled burns where feasible, seasonal cycles of stewardship, and traditional harvesting methods such as coppicing and selective pruning to promote landscape health.

Beyond fire, the plan lays the groundwork for traditional and cultural uses of the plants and landscape, ensuring that forest management supports Indigenous lifeways. It also incorporates resilience management practices to protect neighboring infrastructure, addressing modern fire risks while restoring the ecological processes that have sustained the Mariposa foothills for generations. Because the Southern Sierra Miwuk have been involved at the outset, the plan not only promotes Tribal stewardship but supports any interest the Tribe may have in inviting the wider community to engage with and understand the land through an Indigenous perspective.

The Mariposa Forest Management Plan is already being put to use. We have simultaneously been working on a hillside trail plan above the Mariposa Creek Parkway. With the completion of the Forest Management Plan, we are able to incorporate its recommendations into the design and management of these new trails. Now, the trails will not only provide unique experiences for hikers; they will also serve as fire breaks, access routes for forest managers, and support for long-term stewardship of the hillside including protection of sensitive species such as black or blue oaks. Interpretive signage will help trail users—many of whom will visit the Parkway on their way to Yosemite—learn about the landscape through which they walk, the species that depend on it, and the original human inhabitants whose voices and wisdom will best guide its protection.



## LIBERTY AND JUSTICE... FOR ALL

### LIBERTY STATE PARK MASTER PLANNING & DESIGN, JERSEY CITY, NJ

Since 1885, the Statue of Liberty has stood in New York Harbor as a symbol of democracy, justice, and hope for a better life. Just across Upper New York Bay to the west, a mere 610 meters from the famed Statue, we are taking a stance of our own in support of justice and hope.

We approach all our work from a place of respect not only for people, but for nature and life itself. In 2024, we were honored to bring this ethos to a project involving Liberty State Park.

Spanning more than 1,200 acres on the New Jersey shoreline of the Hudson River, Liberty State Park is one of only two places where people can board a ferry to visit the Statue of Liberty National Monument and Ellis Island. The Park also serves as an oasis within the densely developed region for flora, fauna, and millions of annual visitors.

In 2020, the New Jersey Department of Environmental Protection (NJDEP) initiated the Liberty State Park Revitalization Program to improve the park's programming, access, recreation, and ecological function. As ecological experts on planning and design teams led by Arup and Field Operations, we provided site assessment, master planning, concept recommendations, and led ecological programming for nearly 500 acres across multiple sections of Liberty State Park.

After analyzing the site's history and existing stressors, such as flooding, heat islands, and biodiversity loss, we conducted an ecological assessment and habitat delineation. This information was used to identify ecologically sensitive areas and develop natural resilience strategies that focus on invasive species management, native plantings, and climate adaptation.

“We advocated for the innate rights of nature by emphasizing the importance of habitat connectivity and protection from and responsible integration with proposed human programming,” said Biohabitats Hudson River Bioregion Leader, Kevin Dahms.

Recommended ecological interventions included native meadow creation, wetland restoration, shellfish restoration, living shorelines, reforestation, and green stormwater infrastructure. These recommendations included protecting the site's function as a key stopover along the Atlantic Flyway and maintaining key ecological stepping stones that link its habitat cores. Throughout the master planning and design process, we helped lead community engagement events and an in-person working session on incorporating native plants.

“We guided the team to consider beings without voices—flora, fauna, and ecological communities—in the project goals, objectives, and planning recommendations,” said Dahms, “and incorporate these considerations as ‘input’ to the plan.”

Integrating these elements into the larger park programming, which includes art and culture installations, athletic fields, and recreational facilities, will help ensure that the Park will be a place that not only benefits people, but local ecosystems and the beings that depend on them. That includes several at-risk species, like the bobolink (*Dolichonyx oryzivorus*), a migratory bird species listed as Imperiled in New Jersey due to habitat loss; harbor seal (*Phoca vitulina*), which travel to New Jersey's waters every winter from their northern breeding areas in New England and Canada; the Atlantic menhaden (*Brevoortia tyrannus*), a filter feeder that plays an important role in ecosystems and commercial fisheries; and many more birds, mammals, and fish.

Through our work on this important site—one of only two access points to a public space that so powerfully and visibly represents historic, American values—we are striving to ensure that it will forever be a place where humans and the ecosystems with which they are inextricably linked can jointly thrive.



## USING OUR VOICES

### SPEAKING OUT AND SHOWING UP

Throughout 2024, we used our voices to promote and share knowledge related to nature-based solutions, and to advocate for the integration, protection, restoration, and regeneration of natural systems through planning, design, and construction projects. We strove to deliver these messages to today's practitioners, as well as tomorrow's. We also created and took advantage of opportunities to amplify these messages more broadly through social media, public events, volunteer outings, and podcast appearances.

Collectively, team members in all bioregions led, delivered, and presented 43 talks, tours, workshops, case studies, poster sessions, and panel discussions at industry conferences and events. They also provided 20 guest lectures and workshops on ecologically grounded planning, design, and construction for graduate and undergraduate students at public and private institutions of higher education.

We sponsored several episodes of the Rewilding Institute's Rewilding Earth podcast which highlight the work of the people involved in saving nature's building blocks, whether they be intact wilderness or key corridors and buffers surrounding wilderness, as well as people invested in protecting and reintroducing extirpated species to these areas. Six episodes brought new insights and voices to more members of the conservation community.

We also produced and shared two issues of *Leaf Litter*, our free, digital publication to inform and inspire the ecological restoration, conservation, and regenerative design community. The spring issue examined the design-build delivery model for nature-based solutions. The winter issue consisted of a "care package" featuring a guide to action, a gallery of hopeful images and reflections, and interviews with change makers in other fields who are working to create a more just, biodiverse, and climate resilient world.



Tanaira Cullens presenting at the Symposium on Emerging Contaminants in the Chesapeake Bay.



New Mexico Reforestation Center



## OBJECTIVE 2

Undertake work that protects and conserves biodiversity, restores and regenerates natural systems, and rights environmental injustices.

Our efforts to protect and conserve biodiversity, restore, and regenerate natural systems and right environmental injustices continued throughout 2024.

### **MILESTONE REACHED IN PROTECTION OF RIO GRANDE** **LOS ALAMOS COUNTY, NM**

Initially founded to undertake the Manhattan Project during World War II, the Los Alamos National Laboratory (LANL) now conducts a wide range of scientific research programs, including studies to ensure the safety and reliability of U.S. nuclear weapons.

Situated on the Pajarito Plateau in northern New Mexico, LANL's expansive 40-square-mile campus is located within the sacred ancestral homelands of many Indigenous peoples, including the Pueblos of San Ildefonso, Santa Clara, Ohkay Owingeh, and Cochiti. For decades, these communities and others downstream of LANL suffered from the laboratory's unregulated disposal of hazardous chemicals and radioactive waste. Much of the waste was stored or buried in unlined disposal pits, trenches and shafts, while industrial contaminants were discharged into the environment from lab operations. Picked up by stormwater and melting snow, these contaminants would then flow through canyon streams and washes, and eventually into the Río Grande, a major drinking water source and important resource for irrigation, livestock, recreation, and wildlife.

In 2003, Amigos Bravos, a nonprofit organization that works to protect and restore New Mexico's water and watersheds, began actively advocating for LANL to be held accountable for its water pollution. In 2008, Amigos Bravos, along with eight other community organizations and two individuals, filed—and ultimately won—a lawsuit against the U.S. Department of Energy and LANL over significant violations of the Clean Water Act. With the settlement, the U.S. Environmental Protection Agency (U.S. EPA) issued a new National Pollutant Discharge Elimination System (NPDES) industrial stormwater permit requiring LANL to meet stringent stormwater management requirements at over 400 legacy toxic industrial sites.

In 2011, we began working with Amigos Bravos and Communities for Clean Water (a coalition of organizations that includes Amigos Bravos, Honor Our Pueblo Existence, Concerned Citizens for Nuclear Safety, and others) to help monitor and ensure LANL's compliance with the industrial stormwater permit. Assessing and monitoring water quality through such an extensive and complex campus, with its classified and underground facilities, was challenging. So was the development of treatment and management strategies. The effort required a great deal of cooperation—not only among our project partners, but also with LANL representatives.

One coalition member played a key role in this aspect of the work: Marian Naranjo, founder of Honor Our Pueblo Existence and resident of the Santa Clara Pueblo. “Since the inception of the Manhattan Project, LANL's presence has impacted us spiritually, changed our life ways, and degraded our environment,” she said in an interview we conducted with her in 2012. The land, she said, “sustained our life ways since time immemorial... it is a place that the Creator had given to us to care for.”

Following Marion's lead, we worked to build relationships with LANL representatives and approached this effort to care for the site and watershed with collaborative resolve, rather than contention.

“At our first Public Meeting, Marian brought a small bowl of water and trimmings from native plants to the front of the room,” said Biohabitats' Senior Engineer, Erin English. “In the form of an opening ceremony, she asked that we understand the right of all beings to clean water, and the deep spiritual significance it holds for the Puebloan people downstream. That simple, bold act set a tone that is certainly more open than your typical meeting between the government and citizens.”



Working closely with both the coalition members and LANL’s Surface Water and Canyon Investigations Program, we participated in a multi-year collaborative effort to bring the parties together to further their mutual understanding of the cultural importance of clean water, appropriate and effective arid-region stormwater management practices, and regulatory approaches that are beneficial to all. This involved reviewing ongoing and annual stormwater reporting, metrics, water quality, and design rationale; supporting the negotiation of terms and intricacies for permit renewal with LANL, New Mexico Environment Department, and the U.S. EPA; participating in technical meetings with LANL staff; visiting contaminated sites; monitoring the installation of recommended stormwater management practices; and participating in public meetings.

With the ultimate goal of ensuring oversight not only of discharges from LANL’s 400 industrial sites but also its non-industrial urban sites within Los Alamos County, we continued to support the efforts of this dedicated group to advocate for more stormwater regulations. We attended countless technical meetings, reviewed and commented on several rounds of draft permits, and conducted multiple efforts to support ongoing efforts to ensure compliance with the industrial stormwater permit regulations. Our friends with Amigos Bravos and Communities for Clean Water never gave up, and neither did we.

In December of 2019, the US EPA made a final determination that urban stormwater discharges on the Pajarito Plateau also needed to be regulated and controlled. Over the following five years, Los Alamos County attempted to reverse this decision, and throughout that time, we supported Amigos Bravos in defending it through technical review and support letters.

We are thrilled to report that on December 9, 2024, the U.S. EPA issued a final designation decision that stormwater discharges from LANL and Los Alamos County are contributing to violations of water quality standards and that these discharges require an NPDES permit under the federal Clean Water Act. This permit, known as a Municipal Separate Storm Sewer System (MS4) permit, is in addition to LANL’s industrial stormwater permit, and regulates stormwater runoff from non-industrial areas within LANL and Los Alamos County.

“After almost a decade of advocacy we are pleased that EPA has responded to our petition and determined that toxic stormwater discharges to tributaries to the Rio Grande on the Pajarito Plateau must be more strictly regulated,” said Rachel Conn, deputy director of Amigos Bravos. “EPA has taken an important step in regulating toxic discharges into the Upper Rio Grande which will protect the communities that depend on clean water for drinking, recreation, and ceremonial purposes.”

We are honored to have been invited to collaborate with Amigos Bravos and all of the Indigenous and concerned community members whose voices so powerfully and effectively advocate for nature and environmental justice.

## MIDDLE BRANCH: NO LONGER BALTIMORE'S FORGOTTEN WATERFRONT

### MIDDLE BRANCH RESILIENCY INITIATIVE, BALTIMORE MD

The Middle Branch of the Patapsco River is just adjacent to Baltimore's celebrated Inner Harbor, but its history of heavy industry and aging infrastructure had degraded its ecology and severed it from the city. The South Baltimore communities surrounding the Middle Branch, historically subjected to disinvestment, fragmentation, and environmental injustice, lacked opportunities to safely access, enjoy, and in some cases, even see the nearby waterfront.

To bring greater resilience and connectivity to the communities and waterfront of the Middle Branch, the nonprofit South Baltimore Gateway Partnership launched a large-scale effort to reimagine the 11-mile waterway. With funding from city, county, state, and federal government, many project partners—including Biohabitats—contributed to a community-driven master plan to reconnect South Baltimore with a system of world-class parks, trails, programs, and equitable economic development plans along the shoreline. Known as Reimagine Middle Branch, the plan was adopted by the City's Planning Commission in 2023.

Informed by our assessment, analysis, and conceptual contributions, Reimagine Middle Branch also promoted community health, climate resilience, and biodiversity by charting the course for improved access and connectivity to nearly 600 acres of parkland and restored intertidal marsh habitat. Launched in 2022, the Middle Branch Resiliency Initiative began to bring this component of Reimagine Middle Branch to life. Slated to restore more than 50 acres of habitat and 11 miles of shoreline, it is the largest coastal resilience initiative in Maryland.

"Baltimore's waterways are one of our biggest assets, and this transformational project is instrumental in building a more sustainable future for our city and the entire Baltimore region," said Baltimore Mayor Brandon M. Scott of the Middle Branch Resiliency Initiative.

As ecological experts on this transformative project in the home city of our headquarters, we eagerly dove right in, beginning with the characterization of more than 550 acres of terrestrial and inter-tidal habitats. Informed by these assessments, along with input provided by South Baltimore community representatives and stakeholders during the development of Reimagine Middle Branch, we began designing nature-based solutions to bring resilience, biodiversity, and community connectivity to the long-neglected waterway. These solutions included restored and enhanced tidal marshes, creeks, and critical buffers, which will integrate with other elements of Reimagine Middle Branch, including new and improved spaces for public access to the waterfront.

In an aligned effort, we helped South Baltimore Gateway Partnership and the project lead, GreenVest, procure over \$50 Million in grant funding to support implementation of some of these designs (more than 30 acres of tidal marsh restoration). In July of 2024, construction of the first tidal marsh restoration site began: the Hanover Street Wetlands site involves the restoration of an existing tidal marsh that is invaded with *Phragmites australis*. The wetland has also been eroding. The project aims to stabilize the edge of the marsh and expand the overall footprint of the system with constructed low marsh habitat. The first project is adjacent to a lower population area within the Middle Branch project area, and for that reason, was selected as the best option to pilot the design and construction methods. When complete, the site will allow public access but will not be outfitted with accessibility features. Those amenities are planned for future projects.

Construction of one wetland restoration, known as the Hanover Street wetland, also provided Baltimore with some unanticipated benefits...



Rendering by Field Operations



Before Europeans settled along Baltimore’s waterfront, ultimately hardening much of the shoreline and dredging channels for shipping, both the Middle Branch and mainstem of the Patapsco River were lined with tidal wetlands. Tree limbs and logs that would naturally fall into the river and float downstream helped form and fortify those wetlands. As part of our designs for the Middle Branch Resiliency Initiative, wood is being put back into the shoreline, as part of the substrate for the restored wetlands. This technique became particularly advantageous in December of 2024, when a massive fire broke out at Camp Small, the City’s zero-waste recycling yard for its fallen trees. At the time, the project team was constructing the restoration at the Hanover Street site. The restoration of was able to use nearly 1,000 tons of the burned wood from Camp Small. This not only helped address the City with the unexpected problem of finding a use for the burned wood; it also yielded benefits in terms of carbon emissions. Using the charred logs to form and stabilize the wetland substrate helps ensure that the carbon stored in the wood is stored. It also reduces the carbon footprint of the restoration, since it is locally sourced and reduces the amount of sand that needs to be excavated and transported to the restoration site.

With public access, marsh ecology, and so many elements of resilience woven back into the water’s edge, the Middle Branch is poised to become a model for rectifying a legacy of environmental injustice while enhancing quality of life and climate resilience.

## A STEP TOWARD RECTIFICATION

### EAGLE HARBOR STREAM RESTORATION, EAGLE HARBOR, MD

Established by and for African Americans in the midst of the Jim Crow era, when Maryland's beaches were segregated, the town of Eagle Harbor is located on the western shore of the Patuxent River. One of the last predominantly African American waterfront communities in the U.S., the closely knit town has an estimated year-round population of 70. Many members of this small, but mighty community are descendants of original residents. Celebrated for the beauty and thriving, resilient community, it is often referred to by its residents as "Paradise on the Patuxent." But Eagle Harbor is also an area steeped in racism and injustice.

In the 17th and 18th centuries, the town's northern tip, Trueman Point, served as a port for the region's tobacco plantations. Before the Civil War, the nearby town of Aquasco had the state's highest proportion of enslaved people per capita, and Trueman Point was very likely a site for the transport and exchange of more than tobacco. It is believed to have been a landing site for slaves shipped to Maryland to work the tobacco fields.

Founded in 1925 and Incorporated in 1929, Eagle Harbor grew to become a waterfront haven for African Americans despite a lack of public investment. The Patuxent River and its floodplain provided residents with a respite from sweltering Washington, DC summers, fertile farmland, and an abundance of fish, crabs, and other local food sources.

In the 1960s, one of Maryland's largest coal-burning power plants was built just south of the town. Until 2018, its coal-fired units were discharging arsenic and mercury to receiving waters. In 2000, an oil pipeline ruptured underground at the plant, ultimately resulting in 140,000 gallons of oil spilling into the Patuxent just south of Eagle Harbor. While the plant ultimately shut down its coal units in 2021, stormwater runoff from high power transition lines and the plant's impervious surfaces continued to flow into Coleman Creek, which traveled directly through the yards of Eagle Harbor residents before emptying into the Patuxent. The creek was an amenity for the town,





and integral to its character, culture, and history, but the runoff during storm events caused frequent flooding and erosion. This degraded the beauty and ecology of the creek and Patuxent waterfront. At times, the deposition of eroding sediment was so severe that residents had to dig out the creek and sediment choked road culverts by hand.

Fortunately, the Town took action and crafted a Sustainable Communities Action Plan outlining its vision for sustainability and establishing themes, goals, and strategies to achieve it. The Plan's core themes were Social and Cultural Preservation, Quality of Life, Coastal and Stormwater Management, Active Waterfront & River Recreation, and Green Economic Development.

Along with the nonprofit Patuxent Riverkeeper, led by its founder Fred Tutman, an eighth generation African American native of the Patuxent region, the Town successfully procured coastal resiliency funding from the Maryland Department of Natural Resources to restore

Coleman Creek. We were honored to help with a project calling for the restoration of 1,400 linear feet of Coleman Creek. Recognizing the opportunity to do even more for Eagle Harbor, we approached our friends at GreenVest, who were working with the local county (Prince George's) to identify and implement ecological restoration opportunities to help them meet their MS4 permit's sediment TMDL requirements. Collaborating with GreenVest, the Town, Patuxent Riverkeeper, and construction contractor Meadville Land Service and D&F Construction, we were able to expand the footprint of the restoration, increasing its length to 3,400 feet, and ensure the necessary easements were obtained for the project to move forward.

After conducting comprehensive ecological assessments of the creek and engaging residents, we created and executed a restoration design that stabilized and restored Coleman Creek and created an expansive floodplain mosaic of tidally influenced marsh and non-tidal wetlands. The restored creek and wetlands, which slow down

and better control the flow of water, also enhance the town's natural beauty and wildlife habitat. The grade control structures were created using wood harvested on site, yielding a nature-based solution that is not only resilient, but low-carbon. The restoration also established more resilient road crossings, with new, appropriately sized culverts put in place to convey much larger storm flows and reduce flooding within the town. We also worked with the community to incorporate a nature trail—something they strongly desired—along the upper wooded reaches of Coleman Creek. Construction of the restoration was completed in November of 2024.

The human and ecological impacts of environmental injustice can never be erased, and so much more must be done to address them. We are eager to see Eagle Harbor's restored creek, wetlands, and shoreline green up in the spring of 2025. We know that those ecosystems—like the unique community they will serve—will continue to thrive and grow stronger over time.



### OBJECTIVE 3

Cultivate an interdisciplinary team comprised of a balance between the sciences, design, engineering, and construction.



We have always been a little different. When founding Biohabitats in the early 1980s, Keith Bowers knew that any work involving dynamic, natural systems would require a variety of disciplines: environmental science, engineering, landscape architecture, and more. He also knew that those disciplines must not be siloed within the organization, but rather, fully interconnected in collaboration.

More than four decades later, we still take great care to cultivate a balanced, interdisciplinary team. Our unique approach to the team member lifecycle, which we continued to hone in 2024, helps ensure that we maintain this balance. When a staffing need arises or is envisioned, we try to respond imaginatively and consider more than just a specific title, degree, and skill set. We think about what the ideal position should be, even if it is nontraditional or if the role is somewhat hybrid. This also requires us to widen our recruitment lens to consider all kinds of life, career, and educational experiences and interests a candidate may bring to our team. When new team members are hired, we provide customized onboarding and training, and we remain willing to adapt roles when team members' life situations change. We made such adaptations in 2024.

Team members with backgrounds in restoration construction, conservation biology, engineering, graphic design, water resources, and administrative operations joined Biohabitats in 2024.

We fully respect traditionally structured firms with a single focus on engineering, construction, planning, or landscape architecture. In fact, they are often our valued partners and collaborators. But we will never be one. We will always be interdisciplinary, and our work will remain rooted in applied ecology. The disciplinary diversity of our 2024 team reflects this commitment.

**OUR 2024 TEAM**

Todd Alsbury  
 Miguel Arteaga  
 Bryan Arvai  
 Jose Avalos  
 Katherine Bartter  
 George Battersby  
 Emily Beacham  
 Anne Berg  
 Joseph Berg  
 Austin Beyer  
 Jordan Beyer  
 Nels Beyer  
 Keith Bowers  
 Edward Brown  
 Kayla Brown  
 Claudia Browne  
 Tristan Burwell  
 Jyliann Calhoun  
 Quinn Caralle  
 Sarai Carter  
 Olin Christy  
 James Cooper  
 Tanaira Cullens  
 Kevin Dahms  
 Russell Daniels  
 Thomas Denbow  
 Sunny Dood  
 Jennifer Dowdell  
 Emily Dubois

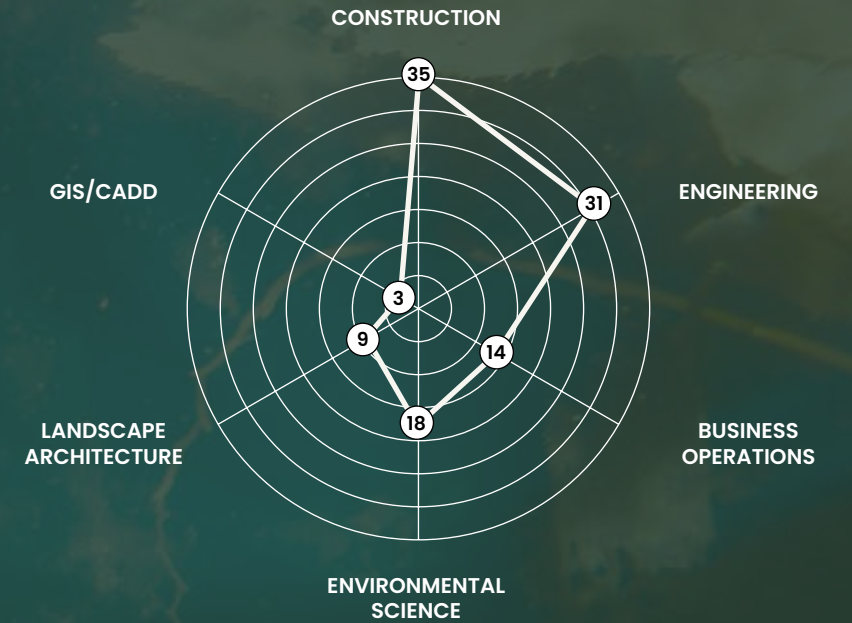
Aiman Duckworth  
 Sarah Emrich  
 Erin English  
 James Favret  
 Lisa Feather  
 Adam Feuerstein  
 Sera Fleishman  
 Brooke Forsythe  
 Francisco Garcia  
 Meghan Gloyd  
 Clayton Green  
 Kevin Grieser  
 Rafael Guzman  
 Katie Halmekangas  
 Hanna Harper  
 Caroline Hildebrand  
 Matthew Hilz  
 Suzanne Hoehne  
 Dillon Houshour  
 Kevin Houshour  
 Erin Jennings  
 Joshua Kahn  
 Jordi Kellogg  
 Matt Koozer  
 Harold Leverenz  
 Michael Lighthiser  
 Helen Little  
 Brett Long  
 Gordon Mallonee

Donald Marinello  
 Josephine Marshall  
 Jorge Martinez  
 Christopher Matroniano  
 Jennifer Missett  
 Eliza Month  
 Peter Muñoz  
 Amy Nelson  
 Jensen Noel  
 Jessica Norris  
 Kevin Nunnery  
 Matthew Oliverio  
 Justin Park  
 Reynaldo Perez  
 Michael Peterson  
 Emma Podietz  
 Rose Marie Price  
 Jacob Radeff  
 Christopher Rehak  
 Wesley Richter  
 Sarah Roberts  
 Bryon Salladin  
 Sydney Salzwedel  
 Nolan Schillerstrom  
 Susan Sherrod  
 Cullen Simon  
 Cody Smout  
 Vince Sortman  
 Rachel Spadafore

Doug Streaker  
 Christopher Streb  
 Mary Talley  
 Justin Taylor  
 Michael Trumbauer  
 Jacques Varvel  
 Leopoldo Vazquez  
 Jose Velazquez  
 Reyes Velazquez  
 Austin Vong  
 Nathan Wadley  
 James Way  
 Brandy Weelock  
 Kenneth Weelock  
 Jonathan Weelock  
 Josh Wilson  
 Rebecca Winer-Skonovd  
 Jacob Wixon-Genack  
 Shayla Woodhouse

**INTERNS**

Jaye Hoyte  
 Amanda Champion  
 Alyssa Burton  
 Anoosh Tauqir



## OBJECTIVE 4

Be just in compensating all Team Members, including sharing profits with active stakeholders, Nature, and the communities we touch.



Biohabitats is part of a movement to transform business into a source for creating conditions conducive to life. Everything we do—from our work and daily operations to the way we use our profits—is driven by our mission and purpose.

In 2024, our leadership team continued to ensure equitable compensation across disciplines, experience, and identities. The team ensured our adherence to MIT's Living Wage calculator and helped us determine that we far exceed JUST's requirement that the salary of our highest paid team member is not more than 15 times that of our lowest paid team member. (In our case, it is 3.8 times). In addition to salaries, our team members collectively received an additional \$801,000 in 2024. This included \$196,000 in performance bonuses, \$373,000 in profit sharing, and \$232,000 in 401K matching contributions.

We believe that supporting organizations with aligned missions helps generate lasting, positive change. Over the course of 2024, our Corporate Giving Program shared over \$147,000 with such organizations. That included contributions to uphold our commitment, as a member of 1% for the Planet, to donate the equivalent of 1% of sales to environmental nonprofits. 1% for the Planet is a global network of businesses, nonprofits, and individuals working together for a healthy planet.

This also included four \$1,000 donations to nonprofits chosen by winners of our quarterly "Golden Acorn Award," which honors team members who embody our mission and values.

**In addition to sharing our profits with allied organizations, we also shared our free time by volunteering. Our team members collectively volunteered 2,162 hours over the course of 2024.**

## 2024 DONATION RECIPIENTS

1% for the Planet  
Acres of Ancestry  
Anacostia Watershed Society  
Arundel Rivers Federation  
Backyard Basecamp  
BCorp  
Black Agrarian Fund  
Black Church Food Security  
Black Swamp Conservancy  
Blue Water Baltimore  
Chagrin River Watershed Partners  
Chesapeake Bay Trust  
Chesapeake Stormwater Network  
Clackamas River Basin Council  
Colorado Watershed Assembly  
Connecticut River Conservancy  
Cool Effects  
Delaware Center for Inland Bays  
Environmental Forms, LLC  
Flower Hill Institute  
Friends of Stony Run/Parks & People

Georgia Conservancy  
Guardians of Flushing Bay  
High Line Canal  
Howard County Conservancy  
Hudson River Watershed Alliance  
International Living Future Institute  
Invasive Species Action Network  
Irvine Nature Center  
Jersey Waterworks/New Jersey Future  
Landscape Architecture Foundation  
Maryland Stream Restoration Association  
Metro Denver Nature Alliance  
National Sports Center for the Disabled  
Natural Areas Association  
Nature Based Exchange  
Network for Engineering with Nature  
NorthBay Adventure  
Northern Jaguar Project  
NY/NJ Baykeeper  
Project Equity/Multiplier  
Purpose Owned  
Rewilding Institute

River Restoration Northwest  
Samaritan's Purse  
Santa Fe Watershed Association  
Shore Rivers  
Smithsonian Environmental Research Center  
Society for Ecological Restoration  
Society of Wetland Scientists  
Solar Youth  
South Carolina Beach Advocates  
South Carolina Environmental Law Project  
Spa Creek Conservancy  
Teaneck Creek Conservancy  
The Cultural Landscape Foundation  
The Giving Grove  
The Nature Conservancy  
Tinkers Creek Watershed Partners  
United Way Tennessee  
Watershed Center  
West Creek Conservancy  
Western Reserve Land Conservancy  
Wissahickon Trails

## OBJECTIVE 5

Operate Biohabitats as a learning organization that embraces a diverse, equitable, and inclusive culture, supported by self-management, wholeness, and evolutionary purpose.

### ALWAYS LEARNING

We fully support our team members' efforts to grow through traditional professional development vehicles like technical conferences, workshops, webinars, courses, and lectures. But for us, "learning" means much more.

Both as individuals and as a firm, we constantly seek and grow from feedback. It is ingrained in our culture.

In 2024, we presented 30 "Brainplanters," learning sessions presented by and for team members. With topics ranging from project "lessons learned" to new tools and technologies, to time management, these informal learning opportunities accelerate the sharing of knowledge throughout our firm.

We also began holding a series of small group "Listening Sessions" in 2024, where team members can safely share honest feedback and ideas related to our work and operations. Every team member is willing to teach and learn. "Evolve to be the best" is one of our core values, so we embrace all opportunities for learning... even when that means learning from our mistakes.

### A CULTURE OF BELONGING

Throughout 2024, we continued to cultivate a culture of belonging—not just within our firm but also within our industry. In 2023, we established seven goals to help guide us. These goals relate to fostering understanding, policies/practices, growth, team member well-being, outreach, community engagement, and indigenous relations. Supported by a robust annual budget, our People & Culture team, a dedicated group of team members continued to advance our progress toward those goals in 2024.

Working with consulting, training, and e-learning specialist, CultureAlly, we conducted Unconscious Bias & Allyship training for our entire team. As a companion component to the Unconscious Bias & Allyship training, we held listening and dialogue sessions where team members could safely discuss topics addressed and lessons learned, as well as share feedback and suggestions for future training and initiatives. We also engaged CultureAlly to help us build upon our efforts by identifying and prioritizing actionable next steps for each of our goals.

We reviewed *Headwaters: A Guide to Biohabitats' Benefits, Policies and Cultural Practices* and updated the publication to include a "Community & Belonging" section. The section defines our approach to cultivating an environment that is inclusive, equitable, and welcoming to people of all races, creeds, genders, and sexual orientations. We also updated and improved our standard operating procedures for recruitment, screening, and onboarding to ensure that we are equitable, inclusive, and reflective of the communities we serve and that we remain focused on team member wellbeing and resilience throughout all stages of the employee life cycle.

Our Interdisciplinary Internship Program, which prioritizes candidates from communities underrepresented in our field, continued to improve and expand. Our 2024 intern cohort included two graduate students focusing on landscape architecture and urban planning, and one undergraduate who was studying civil/environmental engineering and sustainability. Crafted specifically around the interns self-reported career, life, and internship goals, their 20-30 hour/week paid positions provided them opportunities to actively engage in many project types and phases, gain marketable skills, and begin building their own professional networks. Three former Biohabitats Interdisciplinary internship participants procured full time positions in the industry in 2024. This includes engineer Kayla Brown, who is now a Biohabitats team member.



We are proud to be a founding donor of the Landscape Architecture Foundation's Ignite program, and we continued our support of the program in 2024. Ignite is a comprehensive scholarship, internship, and mentorship program for BIPOC college students pursuing degrees in landscape architecture. Biohabitats senior landscape architect and urban ecologist, Aiman Duckworth continued to serve as an Ignite mentor. We also continued our sponsorship of the Society for Ecological Restoration's Restoration Fellows program, which provides authentic career opportunities to emerging professionals from underrepresented communities.

We believe that our work is better when it is informed by a diversity of voices. In 2024, aware of historic and systemic injustices that have been present in community engagement procedures, we established a working group to focus on and develop standards for the ways in which we approach community engagement in our work. The working group began by examining our own history of community engagement efforts and holding frank discussions about effective and ineffective tactics. They also began developing a framework for innovative, thoughtful approaches. Though still in its early stages, the working group continues to help our team apply its growing body of knowledge gained and lessons learned to our work. We hope that you see this reflected in some of the stories featured in this report.

We also formed a working group to focus on Indigenous relations in 2024. Recognizing that efforts to acknowledge and engage Indigenous communities in projects can often be performative without bringing positive change, the group established a strategy to create tangible commitments between our clients,

our work outputs, and Native nations. Through a variety of training programs in 2024, and through one team member's ongoing participation in ASLA's Indigenous Collective, the group worked to increase our understanding of approaches to establish and uphold respectful relationships with Indigenous peoples, knowledge, and territories in our work. They also committed to strive to build relationships as early as possible and authentically seek Indigenous voices to help formulate project processes.

As the group gained knowledge, they applied it. Before beginning work on a project to develop a vision plan for the Wakarusa River in Douglas County, Kansas, we were honored to begin dialogs with Haskell Indian Nations University on respectful approaches to the work that could help build right relations. We did this not only because the river runs near the University campus and we felt their input was essential, but also because more than 148 Native nations are represented within the University community, and in a region rife with historic displacement of Native Americans, their voices and wisdom deserve to be heard and included. The project work will continue into 2025, and with the University as a partner, we are confident and excited about the future of the Wakarusa River corridor and all of its communities.



## SELF-MANAGEMENT, WHOLENESS

2024 was a monumental year in terms of the development, management, and leadership of our team. Our new leadership team was launched at the beginning of 2024, and these leaders worked with their team members and each other to chart a course for the year and ensure that we uphold our mission and values and continue to foster culture of belonging as we evolve.

Early in 2024, our Practice Leaders defined their individual roles, which included ensuring that legacy information would be passed down.

Our onboarding program now includes a component on self-management, so team members better understand how to chart and evaluate progress toward their career trajectory.

## EVOLUTIONARY PURPOSE

**“Striving for something that is bigger than any one of us and that will change the world.”**

That is how our founder, Keith Bowers, defines Biohabitats’ evolutionary purpose. It has to do with both our mission to restore the Earth and inspire ecological stewardship and our purpose of inspiring love for wild places. It is a concept that is hard to put into words, but one we see reflected in our daily operations and in our work.

In 2024, our work took the form of **385 projects** which touched more than **250 communities**. Those are big numbers, and they are important, but they only tell part of the story. A number cannot describe the satisfaction of inserting native Carex and Scirpus wetland plugs into hydric soil, knowing they will grow and support northern red-legged frogs. Nor can a number capture the magic of seeing a steelhead trout make its way upstream to spawn in newly restored habitat. A number cannot express the relief of a municipal leader who now has a nature-based solution managing stormwater and reducing flood risk for his community.

So, for good measure, here are just a few more stories that help demonstrate the ways we progressed toward our evolutionary purpose in 2024.



## CONSTRUCTING RESILIENCE

### SUNSHINE BUTTE STREAM RESTORATION, GRESHAM, OR

Over the course of 2024, through work performed by our Biohabitats Construction team and our design-build partners, we put 33 projects in the ground. Whether we were removing invasive species or defunct dams, installing engineered log jams or native vegetation, building bendway weirs or boulder cascades, we approached construction with the same passion, care, and dedication to our mission that we apply to planning and design work. Take, for example, two different projects in Oregon's Willamette River Watershed.

The Willamette River Watershed hosts a rich variety of ecosystems and provides habitat for numerous plant and animal species. As part of the larger Columbia River Basin, the river plays a vital role in the migration of Chinook salmon, Coho salmon, and steelhead, which depend on its waters for spawning. The watershed also supports a diversity of other aquatic life. Since the 1800s, however, humans have modified the Willamette, its floodplain and its tributaries to support agriculture, development, navigation, logging, and other industries. These modifications have impacted the system's ecological function. Fortunately, many agencies, nonprofit organizations, and everyday citizens are doing something about it.

Located just south of the city of Gresham, Oregon, the Sunshine Butte Natural Area features iconic Pacific Northwest conifers and hardwoods, including Douglas fir, western hemlocks, bigleaf maples, and western red cedar. It also contains nearly 1.5 miles of tributaries to Sunshine Creek, which flows into Johnson Creek and ultimately, the Willamette. Before being purchased and managed by Metro, the regional government agency for the Portland metropolitan area, the site had been used for agriculture. The land had been cleared of native trees and riparian vegetation, and water control structures—including a small, concrete dam and spillway, a cistern, and miles of clay drain tiles—had diverted water into irrigation ditches, depleting groundwater and leaving the soil dry and lifeless.

In the summer of 2024, the Biohabitats Construction crew helped Metro restore the site's natural hydrology and set the stage for regeneration. In addition to removing the dam, spillway, and cistern, they decommissioned 12 lines of drain tiles, some of which were more than a half mile long. This was no easy task, as the tiles, which were 8-10 inches in diameter, were buried beneath a layer of topsoil and six feet of thick clay.

Even before the crew finished removing the water control structures, as the soil began to rehydrate, they observed wildlife returning to the site.

“When we were removing the cistern, we found two Pacific giant salamanders,” said Biohabitats Construction Team Leader Jacques Varvel. “The long-term benefits of this restoration for amphibians are numerous.”

Amphibians aren't the only critters to benefit from the restoration. The site is now experiencing sheet flow. As the vegetation continues to grow and thrive, it will help remove sediment and legacy excess nutrients from that flow before it enters Sunshine Creek and ultimately Johnson Creek and the Willamette River. That means the restoration will also benefit the salmonids and trout that rely on those waterbodies.

“When I was a kid, this place was a strawberry farm,” said Varvel. “It has been amazing to see the site transform into a functioning wet prairie and riparian corridor with beautiful red alders and other native vegetation.”





## **NORTH FORK EAGLE CREEK HABITAT RESTORATION, ESTACADA, OR**

About 20 miles southwest of Sunshine Butte, another waterbody in the Willamette River watershed was in need of ecological intervention. Eagle Creek, a principal tributary to the lower Clackamas River, provides critical spawning and rearing habitat for salmonids and steelhead. The North Fork of Eagle Creek, which joins the mainstem in a Clackamas County Park, comprises more than one-third of the Eagle Creek watershed, and provides critical habitat for cold-water species like steelhead, coho, and Chinook salmon. It is projected to continue to do so in the future, according to a recent stream temperature monitoring and modeling study conducted by the nonprofit Clackamas River Basin Council and its partners, Portland State University and the Oregon Department of Fish and Wildlife. The study, which explored how warming scenarios could reshape thermal regimes and habitat availability in the Clackamas River Basin, found that the North Fork of Eagle Creek is an important temperature refuge, because its water temperatures are colder than those of other tributaries to Eagle Creek. The North Fork Eagle Creek was also identified as having the watershed's greatest amount of salmonid high intrinsic potential. This potential was compromised, however, by an extreme lack of large, woody debris in a portion of the waterway due to decades of

industrial-scale logging. The logging legacy had also severely impacted the riparian zone of Bear Creek, a tributary to the North Fork Eagle Creek, which had become dominated by invasive species. The area has also become increasingly vulnerable to wildfire.

Working with the Clackamas River Basin Council and Dave Bugni, a local timber landowner and community organizer who has tirelessly advocated for restoration in the watershed, we helped secure grant funds from two separate sources—Portland Gas and Electric and the U.S. Forest Service, to implement habitat restoration along nearly five miles of the North Fork Eagle Creek system. This involved creating the design concept, establishing trust and confidence among local landowners, and providing constructability reviews and cost estimates. We then managed the design process, working closely with our subcontractor Waterways.

In 2024, the Biohabitats Construction crew implemented the project, restoring instream habitat while also enhancing riparian corridors, water quality, and regional wildfire resilience. Utilizing more than 350 logs, all of which had to be transported into the project site via helicopter, the crew constructed 21 engineered log jams in North Fork Eagle Creek and six in Bear Creek. The structures add channel complexity, resting areas, scour pools, and side channel reconnections while also improving hyporheic flow and facilitating retention of native

gravels for spawning habitat. Along Bear Creek, the team removed invasive species and planted 1,200 native conifer seedlings and 2,400 native shrubs. Biohabitats also conducted fuels reduction on more than 63 acres, and repurposed harvested wood in the construction of ELJs.

In addition to Dave, the Clackamas River Basin Council, and our project team, the restoration was supported by public and private sector entities, as well as the people of Eagle Creek. The Bureau of Land Management was instrumental in assisting with permitting and log sourcing. Portland General Electric donated logs for the habitat structures. Clackamas County provided guidance, as did the Oregon Departments of Forestry and Fish and Wildlife. The project also involved close collaboration with Columbia Helicopters. The project had strong community support. Several local landowners donated logs and rootwads and provided access to the restoration site through their properties. One community member even allowed the use of his land as a helicopter staging area.

Construction of the restoration wrapped in August of 2024, just in time for the fall salmon run. The Biohabitats Construction crew will be monitoring the site for two years, and we can't wait to see it continue to thrive.

## THE POWER OF MONITORING

### MOORES BRANCH AT LIGHTFOOT TRIBUTARY STREAM RESTORATION, PIKESVILLE, MD

Ecological restoration is typically not an instant gratification kind of thing. Through careful planning, design, and construction, we set the trajectory for recovery and regeneration, but that process can take time. Depending on the scale of a site and its level of degradation, it can take years or even decades for an ecosystem's full function to return. Most of our clients recognize the value of post-restoration monitoring and adaptive management, but sadly, the resources for those important tasks are often hard to come by.

Fortunately, the Baltimore County Department of Environmental Protection and Sustainability had both the desire and the funding to monitor the restoration of the North Tributary of Moores Branch, a stream that flows through suburban neighborhoods on its way to the Jones Falls and ultimately, the Chesapeake Bay.

The Moores Branch watershed had undergone a series of changes typical of the urbanized region. Following rural colonial settlement, the area transitioned to agricultural use, followed by urban and residential development. These land use changes resulted in an increased amount of fast-moving stormwater runoff to the stream network via impervious surfaces. In concert with hydrologic impacts, changes in land management affecting sediment supply introduced cycles of channel and valley filling, along with channelization. As a result of these changes, portions of Moores Branch suffered headcutting and widening, which was threatening sanitary sewer and utility infrastructure and degrading the system's water quality and habitat.

Several years ago, we worked with the County to develop a design to restore stability and ecological function to two degraded sections of the North Tributary of Moores Branch. The first reach, which included the stream's headwaters at an outfall, involved restoration of 1,000 linear feet of stream and a 300 linear foot tributary. The second reach involved restoring 2,200 linear feet of stream and creating low benches and banks for the stream to access the floodplain during high flows. The design also realigned a portion of the channel to a more stable confirmation to avoid sewer infrastructure. Both

designs incorporated the restoration of native riparian vegetation, the preservation of large trees, and the opportunity to support more wetland habitat. The project also involved a significant amount of stakeholder engagement to ensure public support and stimulate stewardship of the restoration.

The restoration was constructed in 2019 by Meadville Land Service, and the County called upon us to perform five years of post-restoration monitoring to evaluate the restored system's recovery and performance. We always applaud news that any ecological restoration project will be monitored—regardless of who designed or constructed it—because we know that scientific monitoring yields knowledge that improves the practice for everyone. We'll admit, however, that we particularly appreciate opportunities to monitor our own designs, and we eagerly jumped into the work for Moores Branch.

While the requirements of the project's U.S. Army Corps of Engineers (USACE) permit called for monitoring three out of the five years following construction, the County sought to go above and beyond these requirements and monitor the restoration annually for five years. Requirements of the USACE permit include photographing the restored stream, surveying installed plantings to confirm native vegetation establishment, and scoring instream structures to document stability every other year. To meet the additional monitoring needs of the County, our team performed visual inspections of the stream conditions and planted areas in late summer of the off years. We also set monuments for overview photographs of the restoration that show both the stream and riparian area as well as set locations to survey a cross section of the stream as another way to assess changes and/or stability. The County also conducted biological (benthic macroinvertebrates and fish) sampling to monitor for changes.

With each year of monitoring Moores Branch, we were able to witness the degraded stream system returning to life.

"When you see water slowly moving through a series of cascades and pools where stormwater once surged through an outfall pipe into a steep, entrenched gully, you know the system is working," said Biohabitats soil scientist and project manager, Sarah Roberts, "but the five years of data really helps prove the impact of this restoration."

2024 marked the fifth and final year of our post-construction monitoring. Our results concluded that with the Moores Branch North Tributary restoration, Baltimore County has not only stabilized the degraded stream systems but enhanced and expanded the system's existing wetland footprint. The existing wetland at the first reach has transformed from a small, confined linear ditch to a larger, more complex wetland on both sides of the stream channel's floodplain, to become more than 30 times its original size at almost one acre.



“There is evidence of wetland species thriving in these floodplains and neat wetland pockets starting to establish,” said Megan Barger, Natural Resources Specialist with Baltimore County’s Department of Environmental Protection and Sustainability. “I’m especially pleased to see the phase of the project where the channel was moved to protect previously endangered sanitary sewer infrastructure has maintained baseflow, and important benthic macroinvertebrates are present in the ‘new’ channel.”

The restoration also yielded benefits for the human community. Its upstream portion is located on the property of the Beth T’filoh Congregation and School, and the school is now able to use the enhanced stream, wetland, and forest habitat as an outdoor classroom.

“Our preschool in particular has greatly benefited from it,” said Mark Kaiser, the school’s Director of Campus Operations. “The restored area is so much safer, and obviously more aesthetically appealing without the storm runoff damage.”

“The native landscaping that was installed in the stream buffer is doing well—especially where tree shelters were allowed to remain,” said Barger. “The wildflowers are beautiful to see in the summer months!”

While it has been extremely gratifying to witness the restored site continue on its trajectory of regeneration and resilience, the real reward is knowing that its benefits will continue to ripple outward and downstream.

“Now that the project has been in the ground for five years, DEPS is pleased that it is functioning as designed,” said Barger. “By stabilizing active stream erosion, the Moores Branch stream restoration helped improve the water quality of the Moores Branch sub-watershed, the Jones Falls watershed, and ultimately the Chesapeake Bay.”



## NATURE AT PLAY

### THE DENVER MUSEUM OF NATURE & SCIENCE NATURE PLAY, DENVER, CO

Few experiences enable us to sense and respond to our surroundings as joyfully as we do when we are at play. And when the surroundings involve nature, an increasing body of research—Saga & Gaston, 2024; Stehl et al., 2024, DeVille et al., 2021; to name just a few—suggests that such hands-on experiences, especially during childhood, sow seeds of environmental stewardship.

As of 2024, thousands of such seeds are likely taking root on the grounds of the Denver Museum of Nature & Science (DMNS),

Like Biohabitats, the DMNS strives to catalyze passion for nature. With the completion of their new Nature Play experience in 2024, they are now doing just that—both inside and outside of their walls. Over the last several years, as part of a team led by Dig Studio, we had the honor of working with the Museum and Denver Parks and Recreation

to create an outdoor, nature play experience that celebrates the eight Colorado ecosystems exhibited inside the museum. It was a true joy to provide ecological site analysis, waterway and riparian restoration planning, and ecological design support for the four-acre, multigenerational, multi-sensory experience. With the project now constructed, it is even more rewarding to see the habitat features and plant species we recommended being explored and enjoyed.

Bringing to life the dioramas of the Museum's indoor Explore Colorado gallery, the Natural Play experience invites visitors to climb, slide, hop, and scramble your way through alpine tundra, subalpine forests, pinon juniper woodlands, montane forests, riparian corridors, grasslands, and semi-desert shrubland. Imagine exploring a box canyon, swinging high above a sand wash, rolling in a bison wallow, burrowing into a

pika den—all in a single day... or even 10 minutes! ADA-accessible trails and a restored waterway serve as the connective tissue linking the ecosystems and their play experiences.

In addition to catalyzing play and passion for science and nature, DMNS' Nature Play experience also provides wildlife habitat, protects natural and cultural resources, and enhances the site's resilience climate-related impacts in an otherwise highly urban setting.

So much is at play when we experience and engage with the ecosystems that sustain and delight us. We can never know all that will happen inside the mind of one who engages DMNS' Nature Play experiences. The research suggests environmental stewardship. The smiles suggest joy. Isn't it wonderful that the outcome can be both?



## B IMPACT SCORECARD

<b>GOVERNANCE</b> .....	<b>16.2</b>
MISSION + ENGAGEMENT .....	2.9
ETHICS & TRANSPARENCY.....	5.8
MISSION LOCKED .....	7.5
<b>WORKERS</b> .....	<b>34.7</b>
FINANCIAL SECURITY .....	14.9
HEALTH, WELLNESS, & SAFETY.....	6.0
CAREER DEVELOPMENT .....	7.3
ENGAGEMENT & SATISFACTION .....	6.5
<b>COMMUNITY</b> .....	<b>13.7</b>
DIVERSITY, EQUITY, & INCLUSION .....	6.8
ECONOMIC IMPACT .....	1.1
CIVIC ENGAGEMENT + GIVING .....	5.8
SUPPLY CHAIN MANAGEMENT .....	0.0
<b>ENVIRONMENT</b> .....	<b>31.5</b>
ENVIRONMENTAL MANAGEMENT .....	0.6
AIR & CLIMATE .....	5.4
WATER.....	0.5
LAND & LIFE .....	0.0
LAND/WILDLIFE CONSERVATION.....	2.5
<b>CUSTOMERS</b> .....	<b>2.6</b>
CUSTOMER STEWARDSHIP .....	2.3
SUPPORT FOR UNDERSERVED/PURPOSE DRIVEN ENTERPRISES .....	0.3

## B CORPS: MAKING BUSINESS A FORCE FOR GOOD

Biohabitats is a Certified B Corporation®. Certified by the nonprofit B Lab®, a 501(c)3 nonprofit organization serving a global movement of people using business as a force for good, B Corps™ are companies that meet rigorous standards of social and environmental performance, accountability, and transparency. We utilized the B Lab certification as the third-party standard to assess that we met the societal and environmental performance required to maintain our B Corporation status in Maryland. Through a tool known as the B Impact Assessment, B Lab® provides a rigorous, point-based evaluation of a company's practices in the areas of governance, workers, community, environment, and customers. The B Impact Assessment scores environmental and social performance. To be certified, a company must score 80. Our current score is 100.7. To date, B Lab® has certified more than 9,500 companies representing 160 industries in 102 nations. As a Certified B Corporation®, Biohabitats is part of a growing, global movement of people using business as a force for good. More information about B Lab® and the B Impact Assessment is available at [bimpactassessment.net](http://bimpactassessment.net)



# Just.

**Organization Name:** Biohabitats  
**Organization Type:** Ecological Consulting  
**Headquarters:** Baltimore, Maryland  
**Number of Employees:** 80

## Social Justice Indicators:

### Diversity & Inclusion

- Gender Diversity
- Ethnic Diversity
- Inclusion
- Engagement

### Employee Benefits

- Health Care
- Retirement Provision
- Family/Medical Leave
- Training/Education

### Equity

- Full-Time Employment
- Pay-Scale Equity
- Freedom of Association
- Living Wage
- Gender Pay Equity

### Stewardship

- Local Communities
- Volunteering
- Animal Welfare
- Charitable Giving
- Positive Products

### Employee Health

- Physical Health
- Well-Being

### Purchasing & Supply Chain

- Equitable Purchasing
- Supply Chain

## THE SOCIAL JUSTICE LABEL 2.0

BIO-001

EXP. 05/01/2025

INTERNATIONAL LIVING FUTURE INSTITUTE™



## JUST: ELEVATING TRANSPARENCY

In 2024, we maintained our JUST label. Managed by the Living Future Institute, JUST is a voluntary disclosure tool that enables organizations to evaluate themselves through a social justice and equity lens. It is like a nutrition label for socially just and equitable organizations. Receiving the label requires reporting on a range of organization- and employee-related indicators within the categories of Diversity and Inclusion, Equity, Employee Benefits and Health, Purchasing and Supply Chain, and Stewardship. The intent and requirements behind the JUST label align with our values, policies, programs, and we are honored to wear it.

## MOVING TOWARDS CARBON NEUTRALITY

Biohabitats' ongoing goal is to be a 100% carbon-neutral organization in both our business operations and applied work. As part of our environmental impact commitment, we explore and implement actions each year to reach this goal such as powering offices with renewable energy, purchasing goods and services through BCorp companies, and identifying, measuring, and offsetting our carbon footprint in our business operations.

In 2024, we tracked and offset over 230 MT of carbon. Offsets were purchased through Cool Effect, a nonprofit that helps companies offset carbon emissions by supporting high-impact, carbon reducing projects that promote human rights and indigenous agency, protect endangered species, provide developmental programs, and conserve ecosystems. For 2024 we proudly supported the following Cool Effect projects:

- **A Bearadise** | This project supports management and monitoring of old-growth spruce forest project on the North Coast of Afognak Island in Alaska. . In addition to providing habitat and clean air, these important old growth forests will reduce about 1.5 million tons of carbon in 30 years.
- **Sea of Change** | This Blue Carbon project works to plant mangroves, which save the shorelines and remove carbon while helping the locals thrive.
- **Seeing the Forest of the Trees** | This small community-based Improved Forestry Management project encourages residents to preserve and grow the biomass in their standing forests despite multiple opportunities to cut trees for profit or for increased grazing opportunities.
- **Home on the Range** | This project protects native grasslands across the Great Plains. By protecting this land from conversion to agriculture, millions of tons of CO2 are stored in the grass and the soil.





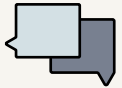
# GOALS FOR 2025



Expand our restoration construction and design/build expertise to include a wider array of ecological restoration, climate adaptation, and land management services more broadly across all bioregions.



Establish a project closeout protocol that will enable us to better capture and track project-related performance metrics.



Cultivate deeper relationships with Native peoples and Indigenous communities to co-create projects built on the importance of respect and reciprocity, and the centrality of place and relationships.



Deepen and expand our internship program to provide full-time equivalent positions offering experiences similar to an entry-level team member.



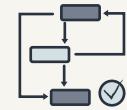
Renew our approach to embedding research in our projects to support continuous learning and improvement internally and externally.



Invest in technology—including hardware, software, and support for our migration to a cloud-based file system—to continue improving our efficiency, impact, communication, and cybersecurity.



Improve and enhance our team member development program, advancement pathways and learning management systems.



Complete firmwide listening sessions and launch our strategic planning process to chart our course for the next five years.



Implement firmwide project management training and standards to continue improving client service and project outcomes.



Launch our revamped corporate giving program, which will allow us to maximize the impact of our giving by providing us with greater autonomy and flexibility to direct our contributions of time and money.

# ACCOMPLISHMENTS

WHAT IS ONE WORK-RELATED ACCOMPLISHMENT YOU ACHIEVED IN 2024 THAT STANDS OUT ABOVE ALL OTHERS, IN TERMS OF YIELDING (OR PROMISING TO YIELD) PUBLIC/PLANETARY BENEFIT?

This year, the proposal team executed and assisted on over 500 proposals, furthering Biohabitats' mission to restore the Earth and inspire ecological stewardship.

- Brooke Forsythe



Completed 30% design for the City of Fairfield, CA community FWS treatment wetland, which has design features for long term carbon storage and passive nitrate removal.

- Harold Leverenz



Completed the City of Lafayette Wildlife Management Plan. It is already being implemented and it won a Colorado ASLA award!

- Claudia Browne



Completion of the Charleston Comprehensive Integrated Water Plan. The Water Plan is meant to help the people of Charleston and their elected officials make wise choices for development, repair, and conservation of both cultural and ecological resources...This plan looks to the year 2050 and imagines how the City might best shape itself in order to protect and enhance life for all.

- Sarai Carter



Contributing to the expansion of wetlands habitat at FDR Park in Philadelphia. While the park is undergoing changes, Biohabitats has played a role in enhancing and creating natural habitat. The park has a lot of visitors so there is opportunity for public engagement and education about restoration, sustainability, and climate resiliency.

- Sara Roberts



We completed the biofiltration wetland design for Constitution Gardens in Washington, DC, which will provide multiple ecological and public benefits, including vastly improved water quality in an iconic setting on the National Mall.

- Jim Cooper



Continuing to share philosophy and strategies for holistic water and nature-based solutions at conferences and webinars.

- Erin English



North Fork Eagle Creek large wood installation via helicopter. Created pristine habitat for juvenile salmonids along several miles of the creek (which is a wild reach restricted to fishing).

- Jaques Varvel



Coming back to work after an injury and honing my stream restoration CAD skills.

- Cullen Simon



Completed the Pocomoke Resiliency Framework - a high-level, forward-looking landscape scale plan that addresses ecosystem health, community resiliency, and adaptation as sea level rises and flooding increases within the region.

- Rebecca Winer-Skonovd



I helped connect 10 interns with resources to either further their education or enter the workforce.

- Tanaira Cullens



The Forest Management Plan for Mariposa, incorporating Indigenous cultural practices for forest stewardship in partnership with the Southern Sierra Miwok Tribe.

- Caroline Hildebrand



