



**BREAKING
BOUNDARIES:**
SUSTAINABILITY AT THE
CINCINNATI ZOO &
BOTANICAL GARDEN



cincinnatizoo.org



#1 GREENEST ZOO IN AMERICA

Saving the World, Changing Lives, One Broken Rule at a Time

The Cincinnati Zoo & Botanical Garden is well-known for its rich history, passionate staff, diverse animal collection, carefully designed habitats, vibrant gardens, and ground-breaking sustainability initiatives.

Since opening in 1875, we have been a dedicated conservation organization working hard to educate and spread awareness about the importance of plants and animals. During the past decade, it became apparent that we were missing a piece of the equation: the **1.8 MILLION** people that walk in and out of our gates every year. We knew it was crucial to put a spotlight on the impacts of our lifestyles as human beings, so beginning in 2006, it became a new priority to determine how we could take the lead as an institution to reduce our environmental footprint and to inspire our local and global communities to do the same.

Despite being the nation's second oldest zoo, and landlocked in an urban city, we began implementing multi-faceted, innovative, and often ground-breaking solutions. While the standard pillars of water, energy, and waste are essential to our solution within the Zoo, it is also important to pursue the fields of social and economic sustainability. Thanks to our relentless and passionate team across all departments, we have been known as the **GREENEST ZOO IN AMERICA** since 2010.

The Cincinnati Zoo's story is an inspiration for many other companies and organizations across different industries and geographies because its success is based on persevering and not making excuses, not taking "no" for an answer when it comes to sustainability.

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WE have a **fearless and aggressive attitude** towards achieving our mission.

WE are not afraid to break rules and **challenge the status quo** to make an impact.

WE think outside the box with **big picture mentality** and creativity.

WE follow a **practical and rational process** to getting things done, **no matter how radical or how difficult**.

WE are a team of **diverse** backgrounds, experiences, skills, and interests, fueled by a common passion.

WE **lead by example**, showing others it can be done and how.

WE **leverage our popularity and success** to reach further in the world and spread our mission.

WE are dedicated to **serving those with the least** by sharing our privileges, skills, and resources.

WE are dedicated to engaging all individuals in sustainability first-hand, up-close, and inclusively to **make all feel empowered to make a difference**.



A photograph of a lioness in a zoo enclosure. The lioness is in the foreground, shown from the side and back, with its long, tawny mane. The enclosure is a grassy field with large, grey rocks and a fallen log. In the background, there is a thatched-roof hut on the left and a dense forest of green trees. A green safety fence runs across the middle ground. The word "zoo" is written in large, white, lowercase letters in the center of the image.

zoo

STARTING AT HOME BASE

“The most important and impactful step we can take in lowering our footprint on this Earth, and the people, animals and plants that depend on it, is by dramatically reducing our use of natural resources **in our own backyard**. As a conservation-based organization, this is absolutely critical in terms of living our mission.”

- MARK FISHER, Vice President of Facilities, Planning, and Sustainability

IT ALL STARTED...

...in **2006** when Mark Fisher was hired to the Zoo's Facilities Department and received the monthly water bill of \$70,000. He knew something could, and had to, be done.

When a habitat walkthrough was conducted and the team discovered what staff thought was a natural spring was actually a 30-year-old pipe leak, the work began. We started measuring, repairing, and upgrading systems around the Zoo. Suddenly, big money was being saved which was reinvested to other areas that needed improvements, which led to even more savings, reinvesting, and so on.

This journey has not been simple considering the time and resources dedicated, the numerous partnerships, and the remarkable internal culture shift. Yet, with curiosity, tenacity, a practical approach, and a willingness to find the best solution, the Cincinnati Zoo & Botanical Garden has found a way to save millions of dollars, improve staff mojo, increase productivity, enhance visitor experience, and become an involved and trusted neighbor, all while doing our part to save the world.

“The City of Cincinnati loves having the Cincinnati Zoo as a traveling companion on the road to sustainability. We share hosting biggest-in-class solar arrays, being LEED certified, and being among the most sustainable organizations of our kind. And we share the Midwestern approach: doing sustainability in a way that saves money and improves quality of life in addition to helping the planet. Thanks for all you do, and all the support you provide for the City's efforts.”

- LARRY FALKIN, Director of Environment and Sustainability
City of Cincinnati

INVESTED

\$4M



\$14M SAVINGS



VISION

Despite being known as ‘**Greenest Zoo in America**,’ the Cincinnati Zoo & Botanical Garden knows there is always more to be done to reduce and reverse our effects on the planet. To continue breaking boundaries in the industry and serving as a model for the region:

The Cincinnati Zoo & Botanical Garden has committed to become a NET ZERO facility by 2025.

WHAT IS NET ZERO?

Simply put, “net zero” refers to an overall balance between emissions produced and emissions removed/prevented from entering the atmosphere.

To define the goal of becoming net zero, the CZBG team determined that the pillars of **WATER**, **ENERGY**, and **WASTE** are the most *applicable, achievable, and impactful* on which to focus design and retrofit priorities.

Because of the unique plants and animals in our care, there will certainly be regulatory and logistical obstacles, and some projects will be much higher-hanging fruit than others. Even so, the end-goal of achieving net zero operations is unquestionably worth our commitment.

Our global perspective and motivation for becoming a net zero facility is about reducing our heavy, institutional carbon footprint to zero. We will show that, by strategically dedicating resources and skills, it can, and should, be done by other facilities across the globe.

2025



NET ZERO water consumed

[all rainwater fallen on-site captured, treated, and reused
*except potable water from City for drinking]



NET ZERO energy consumed

[energy purchased from supplier = renewable energy produced on property]



NET ZERO materials sent to landfill

[all waste and products are recyclable, reusable, or compostable]

BUT THE WATER IS ABUNDANT, WHY SAVE IT?

The Ohio River is our region's most valuable natural resource. However, it is also the **most polluted major river in the United States**.

Therefore, storm water management is a major environmental concern in Greater Cincinnati, especially because it has the **oldest combined sewer overflow system in the country**. This means that during any heavy rain, billions of gallons of raw sewage (anything and everything flushed down the drain or toilet) overwhelm pipe capacity and dump all excess straight into the Mill Creek and Ohio River.

Once the largest consumer of water in the city, the Cincinnati Zoo & Botanical Garden has **succeeded in cutting water use in half, twice**. Through 15 years of strategic planning and design, efforts have saved over \$11 million and dramatically reduced the environmental footprint.

Not only are we concerned about the environmental health of rivers, but we want ensure the social welfare of our closest neighbors too. Studies have shown that in U.S. urban areas, **poor stormwater management affects people of color and of lower socioeconomic levels at a disproportionate rate**. We knew we could, and should, do more to ensure we had a net zero, and eventually net positive, impact on our neighbors in Avondale and Greater Cincinnati.

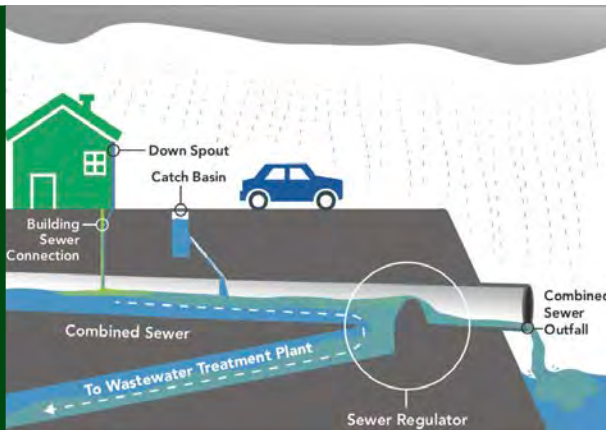
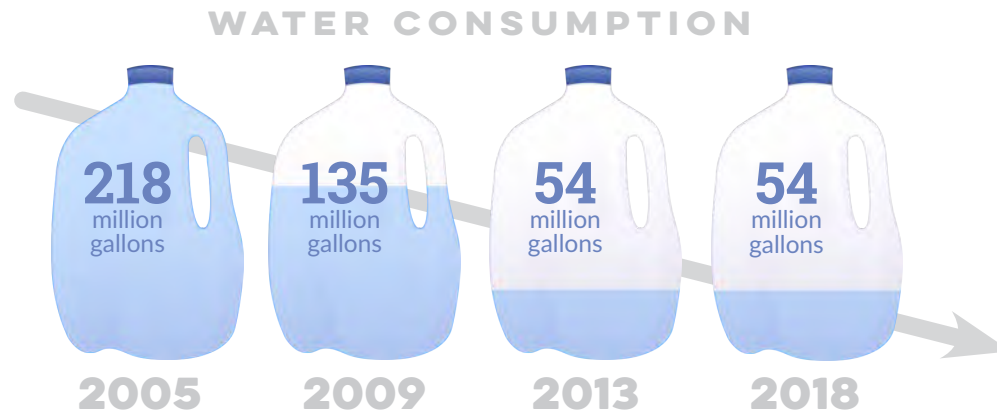


Illustration from New York City Environmental Protection

CATCH AND REUSE.
BEFORE IT DRAINS TO THE SEWER,
BEFORE IT'S DUMPED IN OUR RIVERS,
BEFORE IT FLOODS OUR NEIGHBORS' BASEMENTS.



THE FIRST MAJOR STEP...

...towards becoming net zero water use was the innovation brought about in 2008 by a team of Zoo staff and engineers, the Metropolitan Sewer District, and the Environmental Protection Agency. The vision was for the Zoo to establish a system that could **capture, filter, and reuse every drop of rainwater on-site, keeping it out of the public sewer system.** This came to life as a 400,000-gallon water tank buried underneath the expansive Africa exhibit accompanied by a complex management system for coordinating several filtration technologies behind the scenes.

At the time, there was no other stormwater management project of this scale in the U.S.

From 2006 to 2018, this system has retained tens of millions of gallons of rainwater from the combined sewer system.

This infrastructure allows for the entire 17-acre African savannah landscape, (including the 60,000-gallon hippo pool), polar bear habitat, education building, and bird house to be looped into the system using 100% recycled rainwater. This innovative approach has allowed us to become leaders in the industry, further enhancing animal care and natural resource conservation, without compromising the health of our plants and animals.

We have *best in class* water quality, keeping Fiona's tank crystal clear!

Before this installation, there was a smaller tank included in the LEED renovation of the main Zoo entrance with a capacity of 10,000 gallons, along with an entire acre of pervious pavement to aid in proper drainage. A third and fourth water tank will be installed as part of a brand new capital expansion campaign. With these complete by 2025, the underground systems will have a combined capacity of at least 3,000,000 gallons, enough for the entire Zoo to become 100% net zero stormwater runoff.



Mark Fisher



\$1.5M

invested into stormwater infrastructure by Metropolitan Sewer District



\$11M

saved over time in Zoo's sewer bills



34%

acres of Zoo campus runoff diverted from surrounding sewers and neighbor structures



20.3

acres of the Zoo's 60-acre campus draining to underground catchment tanks



40K

square feet of pervious pavement on Zoo campus



510K

gallons of capacity in underground tanks (10 -foot-deep water over the surface of one football field)

ADVANCED ENERGY RENEWABLE & EFFICIENT

Being the second oldest Zoo in the nation comes with physical challenges like outdated and aging infrastructure. By keeping a consistent focus on our facilities and using a pragmatic, common sense approach, we have found a way to **save the Zoo \$3 million in electricity bills** while also reducing our dependence for purchasing electricity, therefore **reducing the demand for coal-fired power**.



Despite adding 25% in building square footage, we have reduced our reliance on grid-tied electricity by 23%.



Over the past decade of solar installation and energy production, we have developed our vision for the future of the Zoo's energy systems. Going net zero means producing more renewable energy than we consume from the grid, but **we couldn't just stop there**. We are making progress so that **in 2021, we will have enough solar power to fulfill the Zoo's needs 4 times over**, allowing us to share our excess solar energy with other regional institutions. By 2023, we will begin installing battery systems so that we can **store the energy we produce and use it directly on campus, making us completely self-sustainable**.

Our strategy towards energy efficiency and reduced consumption is threefold:

1 Upgrade equipment to efficient models. Apply motion sensors, schedules, and automation where needed.

2 Conduct audits throughout facilities to identify high- and low-use areas and efficiency performance.

3 Engage staff with positive celebrations and innovative challenges to normalize sustainable behavior.



PROJECTS INCLUDE:

- 1.56MW PV array over Vine St parking lot
- 19.3 kW PV array on Education Bldg
- 35 kW PV array over Hippo Cove habitat
- 33 kW PV array over Painted Dog habitat
- 4 project sites with geothermal technology, including ~80 wells and a cooling capacity of 100 tons
- Replaced water boiler in entry restrooms with solar thermal heating
- Switched Festival of Lights to LED saving \$30,000/yr and a 80% reduction in electricity usage
- 100% of facilities converted to LED lighting in 2018



PROJECT HIGHLIGHT

Vine Street Solar Lot (2011)

The solar array installed above our main parking lot in 2011 was a signature project for the Zoo's standards of collaboration involving **internal-external, community-professional, and public-private efforts**.

Upon returning from a national conference with renewed inspiration, Mark Fisher and the Zoo team approached Melink Corporation, a local renewable energy solutions company, and asked for their hand in designing, erecting, and managing **the largest, urban, publicly accessible, educational array in the nation**, at that time.

Leading with the Zoo's "when, not if" attitude, the \$11 million project started

by connecting and communicating with every stakeholder and partner imaginable. Neighbors and city officials were notified and invited to participate, funding was sought and received from a diverse mix of complicated grants and private equity, and technical assistance was given by our go-to partner, Melink Corporation.

A dedicated goal throughout the project was to **source, not just funding and support, but also materials and labor as locally as possible**. One way this was made possible was a scholarship program for students of Cincinnati State Technical & Community College to fulfill training requirements for

official solar installation certification. In addition, while US-manufactured panels were rare to find at the time, our project was able to source 6,400 monocrystalline panels made in Oregon.

Not only do the solar panels have aesthetic, structural, and educational benefits, but the 1.56MW array can also:

- **reduce 1,775 tons of annual CO₂ emissions by replacing coal-fired power**
- **provide 25% of the Zoo's annual energy needs or equivalent to...**
- **power 200 homes per year**
- **generate 100% of our energy needs on sunny, cool days, even sending extra power back to the utility company**

WASTE: LET'S BREAK IT DOWN

1.8M

Annual
Visitors

800

Staff
Members

1,900

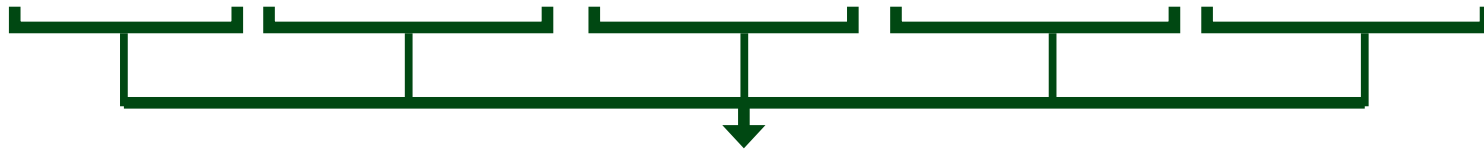
Non-Insect
Animals

80

Current
Buildings

12

Food
Locations



For 136 years we
animal poop & straw
which cost us money,
up valuable habitat and landfill space.



had been sending
to Rumpke Landfill,
burned fuel, and took

We knew the solution was in our own hands, however, we needed a certified composting facility partner in SW Ohio. When Marvin's Gardens opened in 2010, the Zoo began sending all herbivore organic waste (poop, bedding, feed) and food waste from restaurants, catering, and staff kitchens. The collection **started around 4-5 tons per week, and within months, the output doubled.**

To make this magic work (picking up 7 bins one-by-one from across the Zoo and dumping into one central container, 3 times a week), our own **animal and maintenance staff jumped in to help operate forklifts and run the pickup route, adding an extra 1-2 hours to their early morning routine.** Proving our dedication and passion for being zero-waste, it was disappointing when the program had to end in July 2014 when each of the three composting facilities in the region were shut down. CZBG is currently researching the feasibility of an on-site, in-vessel, aerobic digester to restart the composting program and manage operations independently.

Did you know
an elephant
poops up to
300 LBS
PER
DAY?



WE BELIEVE IN  **REDUCING**
 **REUSING**
 THEN  **RECYCLING**



PLASTIC BAG FREE

Considering the volume of sales at the Zoo Gift Shop and other vendors, we took an easy first step of **completely removing plastic bags from our facilities**. Guests are encouraged to use their own bags and a reusable tote is available for a fee.



DUMPSTER DIVE

To get a baseline understanding of what our visitors and staff were throwing away, we conducted two dumpster dives in 2012 at Rumpke Landfill & on Zoo campus where **staff, volunteers, and Zoo executives hand-picked through our trash**. This process allowed us to see how we could improve in efficiency and education about recycling, composting, and reusing. Out of almost 12 tons of waste sorted through, we learned that about **80% of the material could have been recycled, composted, or donated**.



ENRICHMENT MATERIAL

Our animal departments are diligent in sourcing reusable materials for animal enrichment. This includes cardboard boxes, toilet paper tubes, and even **retired fire hoses donated from local fire departments**.



GREEN PURCHASING POLICY

Our policy is written to guide all purchasing decisions towards ensuring that materials and products coming into the Zoo are made from sustainable sources, recyclable material, or both.



E-WASTE & CELL PHONE RECYCLING

By collecting hard-to-recycle items like lightbulbs, batteries, and especially cell phones, we reduce our demand to mine coltan, an ore, which causes habitat destruction, pollution and other harm to landscapes where the mineral is found. Since 2006, **107,990 cell phones** have been collected and recycled and **\$95,772 has been raised** for the Zoo's Conservation Fund.



Mark Fisher



Fia Turczynewycz

BUILDING GREEN

1st

Zoo in the nation to publicly commit to building all new projects to **LEED Gold standards**, at minimum. (Now committed to all **LEED Platinum**.)

1st

Living Building Challenge-certified project in the State of Ohio & in our industry

9

LEED-certified buildings, more than any other Zoo in the nation, including a Living Building Challenge certified project

Leadership in Environmental & Energy Design (LEED) is a rating system developed by the U.S. Green Building Council. **Living Building Challenge (LBC)** is an international sustainable building certification (more rigorous than LEED) by the non-profit International Living Future Institute.

These programs analyze every aspect of a site project from day one to completion. Because our team knows that **buildings and utilities contribute significantly to an organization's carbon footprint**, we strive to follow best design and maintenance practices within our buildings.

Sustainable design features of our LEED buildings include:

- 90%+ landfill diversion of construction waste
- Motion sensor lights and faucets
- Utilization of natural light
- LED bulbs
- Automatic HVAC system
- Low-flow toilets / waterless urinals
- Recycled-plastic carpeting
- Walk-off mats
- Use of low VOC materials
- Bike racks and carpooling parking spots
- Solar panels
- Rainwater catchment tank
- Pervious pavers and curb cuts into rain gardens
- Geothermal heat pumps
- High efficiency insulation
- Electric vehicle charging stations open to public



LIVING
BUILDING
CHALLENGE

MOUTHS TO FEED

**OUR LIONS, HIPPOS, BUTTERFLIES, AND BUMBLEBEES
NEED TO EAT, BUT PEOPLE DO TOO, SO
WE SERVE SUSTAINABLY.**

Working with the Green Restaurant Association (GRA) and our food service partner, SSA, we have designed and maintained both of our Zoo restaurants to achieve the highest certification for sustainable food-service practices, 4-Star GRA Certified.

It is a top priority to ensure that not only our animals, but also our people are getting the best food possible. We have explored avenues for growing ingredients on our own land, but have found the most success in **building relationships and partnering with local farmers and regional food providers**. We are proud that our menus are majority local, that we can display the map of where our food is sourced, and that we **take the passion for sustainability beyond the food itself and into the kitchen and the dining room.**

BASE CAMP CAFE

- Purchases sustainable seafood on Blue Ocean Institute & Monterrey Bay's Seafood Watch Program
- **Sources < 1% of food from more than 300 miles away**
- Uses 100% recycled napkins, cup sleeves, and bath tissue
- Uses compostable plates
- Recycles glass, plastic, aluminum, paper, and cardboard
- Uses low-flow pre-rinse spray valves and faucet aerators (saving \$1,000 per year and enough water to fill 5 backyard swimming pools.)
- Uses 100% LED lighting
- Uses Green Seal Certified cleaning supplies and Integrated Pest Management



- Serves craft beer from 5 local breweries
- Sources ingredients from 6 regional establishments
- Recycles glass, plastic, aluminum, paper, and cardboard
- Uses stainless steel dishware and utensils for food service
- Operates Energystar-certified freezer, coolers, and fryers
- Uses 100% recycled napkins, cup sleeves, and bath tissue for to-go items
- Uses all LEDs within building and on patio
- Purchases cleaning supplies in bulk to reduce packaging



DJJAM Photo

Our Aquaponic Greenhouse is maintained by University of Cincinnati research students. The controlled greenhouse uses a symbiotic system of fish and plants to grow produce. Our talented Zoo chef uses basil, chives, tomatoes, and more in the daily specials and catering kitchens!



TEAM AWESOME

[1,243

internal recipients of Team Awesome Green Tips & Newsletters, including staff, interns, volunteers, board members, and executives

Team Awesome emerged as the Zoo's newly revamped internal Green Team in January 2019 with the goal to **engage ALL staff at ALL levels and continue to strive for operational excellence and aggressive natural resource conservation**. With the official goal of being Net Zero by 2025, we knew we were going to need all hands on deck. Team Awesome's goal is to be a motivator, supporter, and go-to resource for all things green and sustainable within our operations. We want to ensure we are constantly striving to reach Net Zero, boosting staff mojo, being a resource for our community, providing a safe space for open dialogue, and inspiring our staff and visitors to take sustainability home with them.

Team Awesome projects include:

- Researching, writing, and sharing weekly green tips and monthly newsletters
- Positive staff engagement through challenges, trivia, office visits and meetings
- Current conditions analysis by building walk-throughs and night-time audits
 - Landfill diversion through special collections (i.e. nitrile glove recycling, #5 and plastic film recycling)

**POSITIVE REINFORCEMENT
RECOGNITION
CELEBRATION**



GREEN TALKS AND TOURS

At the Zoo, we work hard to tell our sustainability story to all our visitors in the form of green tours, talks, and events.

The goal of green tours are to engage visitors in a way similar to our animal encounters, where the visitors become “close enough to care.” A passionate staff member leads the group to some of our most significant projects and habitats within the Zoo that show our strides towards sustainability. **We hope that the businesses, students, families, and individuals who follow a green tour are inspired by the Zoo's efforts and find a spark of curiosity about sustainable operations and green lifestyles to take home with them.**

11,520 individuals reached by Green Talks & Tours from 2016–2018



Fia Turczynewycz

MORE HOME TO ROAM is a bold, \$150-million capital campaign with the goal to provide better homes for our animals and a better zoo for visitors. It will enable us to dramatically enhance animal habitats, improve the guest experience and **remain one of the best Zoos in the world.**

2020 – ROO VALLEY will include a multi-level ropes course 40 feet high in the treetops, a shared path walkabout with kangaroos, a new home and underwater viewing for little blue penguins, and a multi-tiered Beer Garden.

2023 - NEW PARKING GARAGE will hold ~1,800 cars and feature a new pedestrian bridge for safe visitor access and traffic alleviation.

2023 – RHINO RESERVE will include multiple outdoor yards, a larger, mixed species yard, expanded moats and visitor viewing decks.

2025 - ASIA will give our elephants nearly five times the space of their current yards and will feature naturalistic trees, mud wallows, grasses, pools and streams.

What does this mean for Vision 2025 Net Zero?

+3 LEED Platinum Projects

+2 4-Star Green Restaurant Association Certification

+1 Solar Array with Battery System
(Capacity of 500 kW)

+2 Underground Stormwater Tanks
(Combined capacity of +3M gallons)



MORE HOME TO ROAM





FARM

Cincinnati Zoo & Botanical Garden's®

BOWYER FARM

Restoring the Land & Connecting Community to Nature

In 1995, a 529-acre farm called Bowyer Farm (now 600+ acres of land in Warren County) was willed to the Cincinnati Zoo & Botanical Garden with the guideline that it could **never be developed unless it is to further the mission of the Zoo.**

This condition was easily taken on with our CZBG vision to, involve:

- **wetland restoration**
 - **native plant sales & propagation**
 - **beekeeping**
 - **animal feed harvesting**
- and much more on the horizon...

WETLANDS...

- are **among the most productive ecosystems in the world**, comparable to rain forests and coral reefs
- provide numerous benefits to people, fish, and wildlife
 - protecting and **improving water quality**
 - providing **fish and wildlife habitats**
 - storing water and **mitigating floods**
 - maintaining surface water flow during dry periods
- have immense **biodiversity** of microbes, plants, insects, amphibians, reptiles, birds, fish, and mammals
- are **part of global cycles** for water, nitrogen, and sulfur
- can **store carbon** within plant communities and soil instead of releasing into the atmosphere / helping to **moderate global climate conditions**

To date, CZBG has constructed 2 wetland/grassland systems, restoring a total of 100 acres, and welcoming new and old wildlife, including 170+ bird species.

Restoration Phase 1

Working with the U.S. Department of Agriculture (USDA), 24 acres of land was determined to have historically been a natural wetland. Although this land was once soybean and corn farmland, we reclaimed its original state of a wet sedge meadow. Instantaneously, the natural flora and fauna returned to Warren County.

Restoration Phase 2

After the overwhelming success of restoration in phase 1, we were inspired to do more. Continuing with USDA, phase 2 transformed the originally swampy, non-arable land into a new 50-acre wetland that will protect the Little Muddy Creek watershed. Both phases of restoration include constructed vernal pools, planted trees, established prairie buffer, and nest boxes for native wildlife.



Julia Glenn



Julia Glenn



FIELD WORK

OVER 5 YEARS...

\$90,000
RAISED

5,743
PLANTS
SOLD



POLLEN NATION is a program through which our Zoo is embracing pollinator conservation and honeybee keeping. With the goal to boost pollinator populations, we are propagating pollinator-friendly plants, restoring pollinator habitat, and keeping honeybees at Bowyer Farm.

• • •
BROWSE HARVESTING is an initiative that is important to the Zoo, and specifically the Curator of Nutrition, who works hard to ensure our animals receive only the freshest whole foods and never processed foods from a box. Besides purchasing from regional suppliers, we also produce lots of valuable material on our own land! Throughout warm months,

A major component of the farm is our **NATIVE PLANT PROGRAM**. Working with our Horticulture team and farm managers, the program grows thousands of native plants each year. After addressing landscape needs on Zoo campus and on restoration projects, these plants are offered in our native plant sales, held every month throughout the summer and open to the public.

850+
REGISTERED
POLLINATOR
GARDENS

112+
RECOMMENDED
POLLINATOR
PLANTS

Our Horticulture team conducts trials to determine which plants benefit pollinators the most in our region, then partner with growers and local garden centers to promote and sell these selections as the Zoo's Best Plants for Pollinators line. They also work with communities to establish pollinator gardens in public spaces.

• • •
Zoo staff, including vets, horticulturists, keepers, interns, volunteers, and our nutritionist, will harvest several boxes of fresh edible tree material, called "browse." Ranging from Elm, to Pear, Sassafras, Mulberry, Birch and Hickory, this natural material is taken back to the Zoo and fed to hoofed animals, primates, bears, and others, or it is frozen to build a fresh supply for winter.



Madison Smith



Fia Turczynewycz

NEXT STEPS

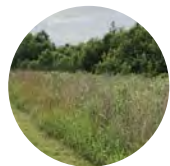
Not only is the Zoo focusing on environmental, social, and economic sustainability within Zoo grounds, but on our external properties as well. Because the Zoo is landlocked by residential and medical complexes, we are limited to what land uses and interventions we can implement.

Starting in 2010, we began a master planning process to determine how we could design and operate this satellite property to best serve Zoo needs, community needs, and wildlife needs.

By owning and maintaining this additional property, we have the honor and privilege to share our vision and values to new communities, as well as supplement projects on main campus, always connecting back to the Zoo's home in Avondale.

Beginning in 2020, the \$1.3 million of state grant and USDA fund investments will be ready to reveal the features highlighted on the map below as well as represent the mission of Bowyer Farm to provide:

- **food for Zoo animals**
- **habitat for wildlife**
- **accessible, public recreation for all**
- **community engagement for all**
- **educational opportunities for all**



1 – Browse Fields
Growing animal feed such as hay, soy, & wheat



2 – Wetlands
100 total acres of restored wetland attracting wildlife



3 – Beekeeping
Housing honeybee hives for Pollen Nation program



4 – Visitor Entry
Parking with bathrooms, picnic shelter, & fire pits



5 – Lake Fisher
Lake with dock for fishing next to picnic shelter



6 – Nature Play
Fully accessible sensory playscape experience in nature



7 – Syrup Grove
Wooded area with maple syrup harvest potential



8 – Native Plant Sale
Hoop houses and storage for annual native plant sale



9 – 5K Trail
3.1 mile trail loop through field & woods for running or walking



10 – Camp Ground
Primitive camping facilities for education programming



11 – Cheetah Run
Training and exercise facility for Zoo's animal ambassador cheetahs



12 – Mega Solar Array
25MW of PV panels producing solar energy, with prairie underneath



REDEFINING A FARM

Due to urban centers expanding rapidly and continuous development, areas preserved for wildlife and enjoyment of nature are becoming scarce and disconnected. Managing this large piece of land is a crucial long-term investment for the Zoo and will only become more valuable to the community and to the planet.

It is certain that this asset will NOT sit idle or be underutilized, but instead have the potential pushed to where it serves infinite functions and innovations while bridging the past and future. With the Zoo's core mission in mind, Bowyer Farm provides **endless opportunities to Create Adventure, Convey Knowledge, Conserve Nature, and Serve Community.**

The Zoo envisions school group field trips, family camping, accessible and sensory-friendly nature playscapes, corporate retreats, service projects, university field research, farmer training, community event space, wildlife rescue and conservation efforts, and so much more.



Photo Courtesy of: Christian Stovall & Kearsarge Energy

This solar array will generate...

\$6,000,000

in annuities to Warren County's schools and public services, over next few decades

25,000 kW

in renewable energy production that can power 3,000 homes or FOUR Cincinnati Zoo's every year



Julia Glenn

Ensuring that we have included social and economic sustainability, the Cincinnati Zoo's signature big vision is tackling environmental sustainability with a 25 MW solar farm spanning across more than 100 acres of prairie, sheep-grazed landscape. This infrastructure is not only a prime example of mutually beneficial ecosystems, but also a massive step to achieve and *exceed* our net zero goals on Zoo campus to become net positive energy and share the benefits with regional partners and communities.





COMMUNITY



The Cincinnati Zoo & Botanical Garden has been a proud member of the Cincinnati community since 1875.

We understand when the community thrives, we thrive – what is good for the community is good for the Zoo.

The fourth pillar of CZBG's Mission Statement is "Serving Community", which recognizes our responsibility to partner with and support diverse and economically challenged communities in our work. A "lion's share" is the biggest and best part of something, and we strongly believe that the work we do serving communities is some of the best and most important work done by the Cincinnati Zoo.

By providing resources and tools for communities to become **environmentally, economically, and socially sustainable**, we are strengthening relationships, building trust, and empowering individuals to save money, save resources, and instill pride within their homes and neighborhoods.

"The Cincinnati Zoo prides itself on being involved in the communities it serves, paying forward the generosity of supporters that help the Zoo achieve its mission each and every day."

- *THANE MAYNARD, Executive Director of the Cincinnati Zoo & Botanical Garden*

Being Good Neighbors

Supporting our community with our expertise, connections, passion, and resources to be as safe, healthy, sustainable, and wildly natural as can be.

Creating Conservationists

Inspiring individuals, families, and community members to become stewards of the environment while protecting, restoring, rebuilding, and growing local wildlife habitat and enhancing ecosystem services through classes, programs, events, and service projects.

Empowering Futures

Providing opportunities for individuals to build skills and capacity within the workforce while living more sustainably and creating environmental connections for success and prosperity.

Building Partnerships

Strengthening, renewing, and creating connections between the Zoo, our neighbors, local organizations, and regional and global communities to achieve a common goal in a more efficient and collaborative way.

Opening Our Doors

Committed to involving and understanding communities that face challenges so that we can ensure access to all who are interested in being included in experiencing nature and joining conservation efforts.



Before After

Mark Fisher

BEAUTIFICATION



Forest & Vine St Gateway (2010)

Three vacant and deteriorating houses were deconstructed by the Zoo and Easter Seals to be transformed into a welcoming neighborhood gateway and greenspace. **All Easter Seals trainees were hired full-time to local construction companies upon project completion. About 85% of the material was salvaged to be reused or recycled.**

This was one of the first projects where the Zoo made effort to directly engage and collaborate with Avondale residents through door-knocking and information sessions, allowing relationships and trust to start developing.

Northern Laronia Park (2010)

A site deemed unbuildable due to flooding issues had hosted overgrowth, aged fencing, and graffiti for a long period of time until volunteers from several local organizations helped transform the lot into a safe and vibrant community park and greenspace. Partners of the project **brought together over 100 volunteers, giving 350+ hours of time.**

Habitat for Humanity (2013)

Considering the historical and need-based significance of residential housing in the Zoo's neighborhood, we partnered with Habitat for Humanity to fully renovate the "Laronia House" to be LEED Gold. Not only did this project provide another clean, safe home in Avondale and reduce its carbon footprint, but it also lowered the utility bills for the young mother and family living there.

OUR NEIGHBORS

Avondale is home to the Cincinnati Zoo & Botanical Garden.

When "Serving Community" was added to our mission as a Zoo, we recognized our desire and responsibility to build a close relationship with Avondale in helping to develop a safe, strong, healthy community.

Avondale has a long history with periods of immigration, 'white flight,' civil rights activism, and urban renewal. In the past several decades, Avondale has been predominately low-income, high-unemployment, high-crime, and underserved. Today, the Avondale community sits at the confluence of pivotal investment and the threat of displacement to long-time residents. These coming changes highlight the community's challenges, but also present major opportunities for the people and institutions within.

Residential Property Acquisition (2010-current)

The Zoo strongly believes in the transparency of their organizational actions inside and outside the fence. Because Avondale is home to some of Cincinnati's largest institutions (UC Health, Children's Hospital, VA Hospital, and the Zoo), we recognize the pressure and effects of development and are sensitive to the history and future of the community. Therefore, residents can be understandably skeptical about acquisition of more and more property. However, the Zoo has gained neighborhood trust and made intentions clear over time. The Zoo is acquiring houses in the neighborhood to serve as

a responsible and trustworthy owner with passion to give back to the community through provision of affordable housing, reliable and high-quality maintenance, proper construction and handling of materials, preservation of historic character, and fostering of a safe, sustainable, and connected community.

Now with 10 years of experience and over 100 homes purchased in the neighborhood, the Zoo is a trusted expert in environmentally- friendly deconstruction, beautification of greenspaces, and leasing of restored homes that are equally offered to new and old Avondale residents and Zoo staff.

Gabriel's Place (2011-current)

The Zoo helps Gabriel's Place, a community non-profit, with preparing and serving weekly Share-A-Meal dinners. Every Tuesday evening, neighborhood residents, families, friends, and members from other communities are welcome to attend the free dinner with service including table orders, menu courses, and plated meals. The neighborhood kids love to help with the server roles and running food, and it also serves as a safe, healthy gathering space for the community.



Fia Turczynewycz

FOOD ACCESS

Avondale Thanksgiving (2013-current)

With commitment to our community values, we must recognize the issue that across Cincinnati, food deserts describe many low-income neighborhoods. In Avondale alone, more than 90% of residents live in a food desert, meaning communities lack proper, close-range access to fresh food, yet have abundant access to fast food and convenience locations.

To offer one of many solutions, in addition to the year-round Share-A-Meal, every year the Cincinnati Zoo has worked alongside the Avondale Avenue District Block Club to provide hundreds of families, including students, seniors, individuals, and friends of the Avondale community with ingredients for a full Thanksgiving dinner. Internally, Zoo staff and volunteers raise money donations, as well as help to pick up, package, distribute, and deliver the food.

SINCE 2013...

\$24,825+

raised by Cincinnati Zoo

3,620

meal boxes prepared to
feed families of 2-5 people



Fia Turczynewycz



Fia Turczynewycz



Fia Turczynewycz

EDUCATION, FAMILY, & HEALTH

Rockdale Academy & South Avondale Elementary Green Team (2012–current)

Founded with Keep Cincinnati Beautiful, a small team of Zoo staff, usually run by Americorps members, meet bi-weekly with the “Green Teams” in both of Avondale’s schools. The three groups of Green Team are made up of Kindergarten-6th grade students. The after-school activities include recycling lessons, school yard clean ups, water conservation practice, eco-friendly holidays, and more. Not only does the program raise awareness to environmental issues and present solutions that these students can be a part of, but it also connects students with mentors and forms strong, long-lasting relationships.

Lion’s Share Holiday Shop (2015–current)

The Zoo works alongside our food and retail partner, SSA, to collect gifts and host a holiday shop for families from Rockdale Academy & South Avondale Elementary School to choose gifts and have them wrapped for their loved ones. Staff helps by donating, volunteering to wrap presents, and run the shop. This event always results in a wonderful interaction between our staff and Avondale families. While parents are picking out gifts, children are given opportunities to engage in environmental education, interact with animal ambassadors, enjoy refreshments, and get hands-on with arts and crafts.

**In just 2018 alone, we collected
over 800 items for 38 families/119 kids.**

Avondale Running Club (2014–current)

The Zoo supports the Avondale Running Club’s healthy lifestyle and community driven mission by providing discounted registration for the annual 5k Cheetah Run Race for members, and free registration for Avondale Youth Council members. Zoo staff also regularly runs with the club on Saturdays and at races, and helps support water stops at major races like the Flying Pig Marathon.



Lauren McClure



Fia Turczynewycz



Lauren McClure



Lauren McClure

SUSTAINABILITY

Light Up Avondale (2017-current)

The grant received from Duke Class Benefit Fund was originally to help the Zoo transition to 100% LED lighting, including the annual Festival of Lights. However, the project has undertaken a **major extension of energy efficiency efforts into the Avondale community surrounding the Zoo**. Light Up Avondale's goal is to **facilitate the installment of LED lighting in as many homes, community organizations, and churches as possible, as well as 50 target zones around Avondale where efficient lighting could be used to increase safety and security.**

Through the installation of energy-efficient LED bulbs, recipients will have decreased energy bills every month, less frequent repairs and replacements needed, and benefits from increased reliability and comfort indoors. **These savings will put money back into homeowners' and renters' pockets and cut expenses for community organizations so that they can invest more into their core missions.**



Fia Turczynewycz

\$750,000

grant funds received from the Duke Class Benefit Fund over 2017-2018

8,048

individuals to be impacted by Light Up Avondale



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THE STREET TEAM began as a group of local high schoolers who went door-to-door with Light Up Avondale flyers, attended community events and meetings, and made calls to get residents

signed up for bulb retrofits. The students were not only getting “boots on the ground” in their own community, but also learning valuable communication, leadership, and responsibility skills. For many of these young teens, this was their first job and this project aids in supporting workforce development.

THE INSTALL TEAM is a group of individuals, mostly from Groundwork Ohio River Valley's Green Corps team, who go into people's homes and businesses to exchange the existing bulbs for new LEDs. These teenagers and young adults have gone through training with Cincinnati State to learn about lighting, bulb types, fixtures, and more. Since June of 2018, they have been applying this new knowledge into practice by upgrading lights throughout the community. Along with the task at hand, these individuals are strengthening their skills in energy efficiency, sustainability, communication, data tracking, customer service skills, inventory, and team building.



Fia Turczynewycz

KEEPING A CLEAN HOME

When the Cincinnati Zoo preaches that wildlife conservation and natural resource conservation go hand-in-hand, we only have to look so far as our backyard to see the evidence. The **Ohio River and Little Miami River** are significant to our region for their history of native peoples and settlement and the first uses of water transportation. Due to Cincinnati's industrial history and outdated sewer systems, these rivers have been polluted and used as dumping sites for over a century.

There is much work ahead to fully restore our natural assets, but we are dedicated to leveraging our organization's resources to be a hands-on steward for our local ecosystems.

From 2016-2019, the Zoo has showed up over 10 times at 6 different locations in our region with...

243+
volunteers

15,950+
lbs of trash removed



Our decision to spend work time volunteering has many more benefits than just doing a good deed. **Our staff looks forward to 'mojo' events to socialize across departments, share experiences and jokes, and learn new skills.** Our best partners in organizing these clean ups are Morgan's Canoe Livery, Little Miami Conservancy, and Living Lands and Waters (the only "Industrial Strength" river cleanup operation in the world).



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GIVING SPIRIT

Because of the great fun and impact we had as a work team volunteering together, we decided to invite the community to join us in these efforts. This not only increases our impact on local wildlife conservation, but also **engages people in hands-on conservation outside of a regular Zoo visit.** Service events and outings are organized by two groups: Family Community Service & Corporate and College Volunteer Program.

The **Family Community Service** program's goal is to create a fun, social assembly of all ages and backgrounds for positive action that has meaningful impact on both people and wildlife. Opportunities are offered about once a month ranging from planting projects to clean-ups, citizen science, and more.

SINCE BEGINNING IN 2016/2017:

2,066 Volunteers Participated

6,998 Hours Given

by families, companies, and universities to serve community

The **Corporate & College Volunteer Program** began as a way to include local businesses and universities who frequently sought out one-day environmental service events. Service includes helping with horticulture projects, with the extensive preparation of Festival of Lights, and with ecological restoration projects at Bowyer Farm.



COMMUNITY MAKEOVER

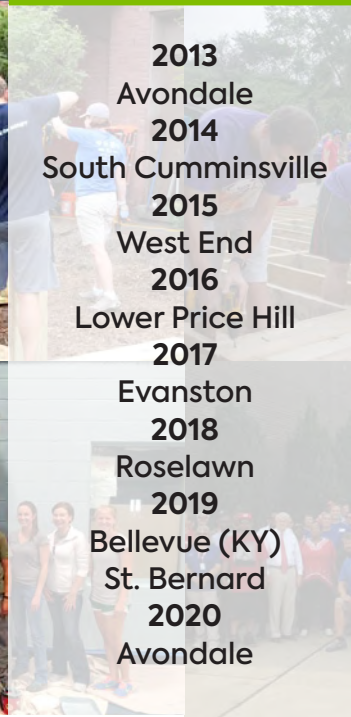
Beginning as the Reds Community Fund's annual project, several iconic Cincinnati corporate and community leaders began to join and collaborate to transform areas in underserved neighborhoods each year. The focus is usually on upgrading a school or community center, an outdoor playground or garden, and a neighborhood baseball field by working with the local community, municipality, and recreation center. Primary sponsors of the annual makeovers include the Reds Community Fund, P&G, Kroger, Children's Hospital, and the Cincinnati Zoo & Botanical Garden.

Over the last 7 years of our participation in the annual Community Makeover, we have played **a critical role of leadership in project design, construction, and management**. These makeovers allow a **safer and more beautiful, comfortable place for residents to gather and play**. Many times, because of utility and infrastructure upgrades designed by our team, these community buildings have been able to increase staff and programming capacity due to financial savings, while also reducing their environmental footprint.



SUCCESSES

- Resurfaced and re-equipped playground and ball fields
- Interior renovations for paint, HVAC, lighting, and more
- Raised garden beds
- Chicken coops
- Invasive-removal landscaping
- Natural playscape and horticulture design
- Youth programming amenities
- Solar panel installation
- Local artist murals
- Community ribbon-cutting



"We're in a position, along with our community partners, to bring about real, tangible improvement. It's **simply the right thing to do** and our staff absolutely enjoy using their talents in such a meaningful way."

- MARK FISHER, Vice President of Facilities, Planning, and Sustainability



Julia Glenn

PROJECT HIGHLIGHT

New Prospect Baptist Church, Roselawn (2018)

The Cincinnati neighborhood of Roselawn was a valuable choice to host the 2018 Community Makeover because of its **well-known homebase, New Prospect Baptist Church**. This church serves as **an essential community safe space** that also offers tutoring, after-school programs, and a food bank. The Zoo's goal was to ensure efficient, long-lasting,

and functional structures and equipment to support the church's mission as well as save resources for direct reinvestment. The initial implementations were so successful that Great Parks of Hamilton County adopted the location for ongoing maintenance, funding, and programming for the community of Roselawn and the whole region.



Resurfaced ball field, added bleachers, & renovated concessions building



Fenced chicken coop, functioning for education and food bank produce



Installation of 300+ panels of a 30 kW solar array to power portion of church's electric needs



Vibrant mural by Cincinnati artists & locally-milled amphitheater seating with open stage



Flexible campground area with firepit and natural creek path for youth programming



Mark Fisher



ANNUAL HAPPENINGS

Party for the Planet (2012–current)

A popular spring event is the large Earth Day celebration hosted every year at the Zoo in conjunction with the annual Tunes & Blooms. Businesses and organizations from around the region are present to **engage visitors of all ages and share their expertise and resources about living more sustainably within our communities.** Topics, activities, and crafts have ranged from solar energy, to composting, recycling, energy efficiency, green building, rain gardens/barrels, sustainable food, and green products.

~2,300

**Attendees
Every Year**

\$33,270

**Auction
Money Raised
2014–2019**



America Recycles Day (2015–current)

To celebrate a nationally recognized day that is dedicated to encouraging Americans to recycle and buy recycled products, schools are invited to bring their students to the Zoo.

These field trips, with admission and transportation, are sponsored by Hamilton County Recycling and Solid Waste District. Informative activity stations are hosted throughout the Zoo, staffed by employees and volunteers, that are designed to teach about recycling and waste reduction strategies. **Over 3,000 students have visited the Zoo in the past 5 years for this event!**

Rain Barrel Project (2015–current)

Every year, the Zoo displays the work of local artists on beautifully painted rain barrels to educate and motivate visitors and homeowners to practice rainwater catchment. These barrels are put on display at the Zoo throughout April and are placed up for auction during Party for the Planet. Proceeds are used in partnership with Save Local Waters to further environmental education and awareness.



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PARTNERS & SPONSORS

With all of our success and history in community sustainability, the Cincinnati Zoo & Botanical Garden has not come this far without the incredible support of our partners and sponsors. Whether a small neighborhood group volunteering on a project, or a nationwide grant providing funding, our organization thrives from the constructive collaboration and is grateful for the chance to represent our mission.

“When I count the partners that make a difference in Easterseals’ ability to fulfill its purpose of building stronger workforce opportunities for veterans, people with disabilities, and people with economic disadvantages, the Zoo is at the top of the list. **They truly take community engagement to a different level, continually finding ways to work together that advance both our missions.** [...] Together, we’ve diverted hundreds of tons of building materials from Cincinnati landfills, and provided real-world on-the-job training that has led to dozens of disadvantaged workers getting the experience they need for living wage jobs. To Easterseals, **the Zoo is so much more than beautiful gardens and exotic animals. It’s family.**”

~ PAM GREEN, DIRECTOR OF EASTER SEALS



A scenic landscape featuring a stream with small waterfalls cascading over dark, mossy rocks. The stream is surrounded by lush green grass and several trees with vibrant autumn foliage in shades of yellow, orange, and red. The scene is bathed in warm, golden light, suggesting a late afternoon or early morning setting. The overall atmosphere is peaceful and natural.

**LEADING THE
WAY IN NATURAL
RESOURCE
AND WILDLIFE
CONSERVATION.**



**By telling our sustainability story, we hope
to inspire and motivate audiences from
across the globe and across the street.
Together we can save the world and change
lives, one broken rule at a time.**

At the Cincinnati Zoo & Botanical Garden, “Greenest Zoo in America,” we have formally committed to aggressively and passionately pursue environmental stewardship by developing an embedded culture of sustainability. Through the reduction, recycling, reuse, efficiency

and renewability of our natural resources, through top quality building design and construction, and through community service and education, our Zoo is always finding new solutions, simple or radical, to grow the positive impact.



cincinnatizoo.org