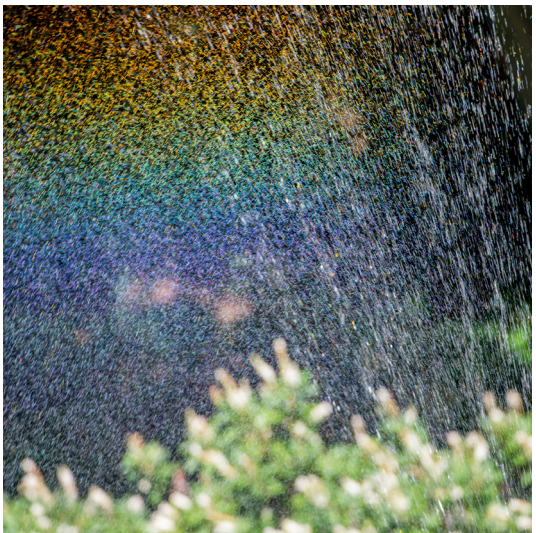
LONGWOOD
GARDENS

Science Strategy

Executive Summary



Ensuring a Beautiful Tomorrow
Science in Action

Longwood actively manages its 86-acre Meadow Garden, ensuring the flora and fauna within it thrive, and so guests can be captivated by the natural beauty in all seasons.

Throughout Longwood Gardens, art and science meet to create beauty that inspires. Renowned for our exquisite conservatories, outdoor gardens, sweeping natural landscapes, and agricultural lands, **we exist to bring joy and inspiration through the transformative power of nature.**

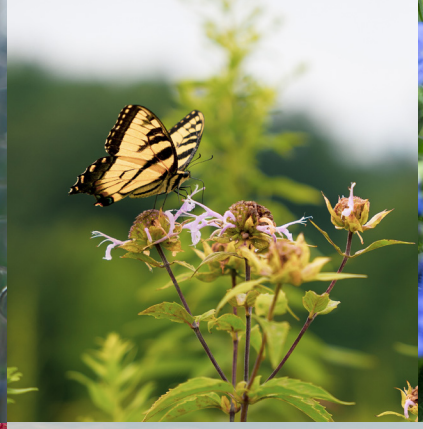
An aerial view of the Thousand Bloom Chrysanthemum grown by Longwood Gardens each year for its annual *Chrysanthemum Festival*. Talented horticulturists combine ancient and modern growing techniques to preserve this Asian art form and inspire new traditions.

While the artistry of beauty is what captures the eye, it is the science—often behind the scenes—that forms the foundation. From horticultural precision to ecological innovation, **science is what enables our Gardens to flourish.**

Built on a strong foundation of research, stewardship, and collaboration that connects science to practice across our gardens and landscapes, our Science Strategy focuses on this work, aligns disciplines and priorities to guide how we move forward and achieve our long-term goals.

Our Strategy

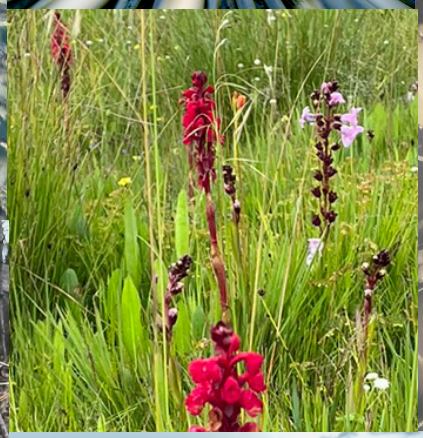
- **Unifies our scientific disciplines** under a shared vision that strengthens collaboration and amplifies impact.
- **Clarifies priorities and objectives** to ensure our work advances Longwood's mission through measurable progress and shared accountability.
- **Translates research into practice**, bridging horticulture, ecology, and agriculture to inform decision-making across our living landscapes.
- **Contributes solutions to larger challenges** facing plants, ecosystems, and people by extending our expertise and collaboration where it can have the greatest impact.
- **Extends scientific insight** into practical guidance, translating evidence-based solutions into scalable practices that support home gardeners, professionals, and broader landscapes.

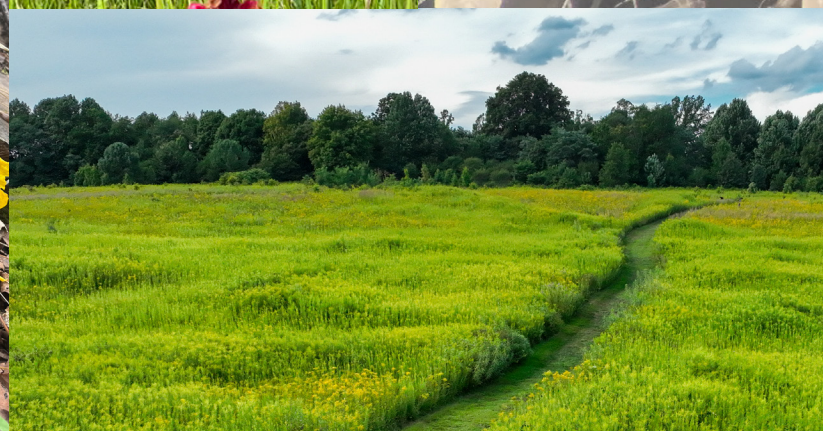











Science in Action

Testimonials

"Longwood Gardens' Science Strategy builds on its strengths in horticulture and landscape excellence and ensures its legacy as a world-leading garden ... The Science Strategy uniquely unites horticulture, science, and community and sets a vision for us to secure a thriving future for humanity."

Professor Tan Puay Yok, Director, Singapore Botanic Garden

"Guided by its Science Strategy, Longwood Gardens' commitment to advancing the study of biodiversity and sustainability is poised to make a significant contribution to the research community's understanding of these disciplines. Through its emphasis on scientific discovery, environmental stewardship, and education, Longwood Gardens supports the preservation of contemporary landscapes while fostering innovation in plant systems of the future."

Dr. Andrew Smith, Chief Scientific Officer, Rodale Institute

"Longwood Gardens' Science Strategy presents a visionary and forward-thinking roadmap, built upon its four foundational pillars: Conserve, Grow, Sustain, and Inspire. This plan reflects a deep commitment to advancing scientific research, conserving biodiversity, and promoting sustainable horticulture, while also serving as a leading model for botanical gardens around the world."

HU Yonghong Ph.D., Executive Director of Shanghai Chenshan Botanical Garden, Vice Director of Shanghai Chenshan Plant Science Research Centre, CAS

"Building on Longwood's long-standing excellence in horticulture and display, this strategy positions the Garden as a leader in applied plant science and offers a clear response to today's most urgent environmental challenges, while strengthening plant conservation, advancing regenerative and sustainable practices, enhancing ecosystem resilience, and deepening public understanding of the critical role of plants. This strategy reflects a deep understanding of how botanic institutions must respond to a rapidly changing world."

HRH Princess Basma bint Ali, Founder, Royal Botanic Garden Jordan

"Longwood Gardens' Science Strategy is so much more than just about the science. Here, science is a means to an end, that end being the regeneration, stewardship, and celebration of nature upon which we all depend. Botanical gardens are special places, and in this strategy, Longwood focuses its world-leading skills in conserving and managing plants to create a more sustainable partnership with nature that will inspire its millions of visitors and supporters to do the same."

Dr. Paul P. Smith CMG FLS, Secretary General, Botanic Gardens Conservation International (BGCI)

"Longwood Gardens' Science Strategy is a bold and timely vision that elevates the role of botanical gardens as catalysts for global change. By uniting research, horticultural innovation, and stewardship under the pillars of Conserve, Grow, Sustain, and Inspire, Longwood demonstrates how science and beauty together can address the urgent challenges of biodiversity loss and climate change. This strategy not only strengthens Longwood's leadership but also invites collaboration across institutions worldwide."

Mauricio Diazgranados, Ph.D., Chief Science Officer and Dean of Science, New York Botanical Garden

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"Once again in their science strategy, Longwood Gardens shows how to put knowledge into action to best meet its future. As I looked over a few of their many targets, I was excited to learn about an expanded program to monitor and improve the health of its soils—arguably one of its most precious resources. Longwood is going to triple its number of Nationally Accredited Plant Collections, which will recognize an even greater number of irreplaceable plants that are of global importance to research and conservation. And, speaking of conservation, it is significant to see how their approach to plant exploration is not "Longwood First" but is "Species First", particularly when it comes to securing the incredibly rare and understudied orchids of Tanzania, in Tanzania."

Michael Dosmann, Keeper of the Living Collections, Arnold Arboretum

"Longwood Garden's Science Strategy provides an impactful roadmap for using science to improve the health of the garden and the planet. As a national and global leader in horticulture, Longwood is demonstrating how aligning scientific discipline with on-the-ground practice can help address nature's most urgent challenges."

Oliver Bass, President & CEO, Natural Lands

"The power of plants is boundless. They nourish and heal us, help societies adapt to a warming world, and enhance human health and well-being. Yet we are only beginning to realize their full potential. Through this Science Strategy, Longwood Gardens sets out an ambitious, forward-looking pathway to expand its local and global impact by leveraging its extraordinary assets—1,700 acres of cultivated gardens, natural and agricultural landscapes; a diverse, globally sourced plant collection; and deep institutional expertise in horticulture and land management. Guided by four pillars—Conserve, Grow, Sustain, and Inspire—Longwood seeks to unite scientific discovery with the beauty of plants to strengthen our relationship with the natural world and drive meaningful, enduring change. As global environmental challenges escalate, this strategy positions Longwood Gardens to lead with science, stewardship, and solutions for a more resilient future."

Professor Alexandre Antonelli, Executive Director of Science, Royal Botanic Gardens, Kew

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"After many years working across global horticulture, it's exciting to see a Science Strategy that is both practical and inspiring. Longwood Gardens has articulated an ambitious and thoughtful vision that reads as a true invitation to collaborate. I strongly support this direction and believe it will meaningfully advance how our field understands, values, and works with plants."

Anna Ball, CEO, Ball Horticultural Company

"This strategy is vital because it demonstrates how science underpins the beauty and resilience of our gardens and landscapes. By uniting research, horticultural expertise, and collaboration, it not only safeguards plant diversity—both cultivated and wild—but also delivers solutions that benefit people, biodiversity, and the planet. Connecting science to practice and engaging communities ensures that gardens remain a source of health, happiness, and sustainability for generations to come."

Prof. Alistair Griffiths, Director of Science and Collections, Royal Horticultural Society

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"It was a pleasure to read Longwood's Science Strategy! The mindful way this Strategy integrates conservation, horticulture, research and communication will lead to inspiring outcomes. I see great things ahead!"

M. Patrick Griffith, Ph.D., Executive Director, Montgomery Botanical Center

Our Opportunity

As we look ahead, the challenges facing the natural world reflect those we navigate within our own gardens. The science that sustains Longwood's beauty is the same science now called upon to strengthen understanding, resilience, and renewal on a global scale. We are living in a time of profound environmental change, when plant diversity is declining, ecosystems are under pressure, and the balance between people and nature is increasingly tested by shifting climates, habitat loss, and the depletion of vital resources. Food systems are straining, invasive species are spreading, and landscapes that once supported rich ecological systems are increasingly fragmented. Yet amid these challenges, awareness of our interdependence with the natural world is growing. More people than ever are turning to plants, gardens, and green spaces as sources of stability, beauty, health, and renewal—seeking both solace and solutions in the living world.

This convergence of urgency and opportunity makes our work essential. Our expertise in horticulture, conservation, ecology, soils, agriculture, and connecting people to nature requires us to respond—not only by protecting and understanding plants, but by demonstrating how science and creativity together can sustain life and inspire progress.

The numbers are clear and compelling: nearly 40 percent of the world's plant species are now threatened with extinction. Genetic diversity—the foundation of plant resilience—is also eroding, leaving species and ecosystems more vulnerable to change. These trends are not distant—they are unfolding in our lifetimes and in our landscapes. To meet this moment, we need coordinated, science-based action that bridges disciplines, informs decisions, leverages collaborations, and empowers people to value and protect the plant life that sustains us all.

"It is that range of biodiversity that we must care for—the whole thing—rather than just one or two stars. Each species is a masterpiece, a creation assembled with extreme care and genius. The loss of any one of them diminishes us and the world we live in."

Sir David Attenborough

Longwood's strength lies in our ability to connect people to the beauty and power of plants in tangible, transformative ways. Through our gardens, our natural areas, our research, and our partnerships, we explore how to conserve native and cultivated species diversity, restore ecosystems, enrich soil health, elevate horticultural expertise, and communicate our knowledge to inform action and inspire others. As part of a global network of gardens leading change, Longwood is committed to doing its part—translating knowledge into action and helping shape a future where people and plants flourish together.

This is both a commitment and an invitation—to our peers, partners, and the next generation of scientists and horticulturists. Together, we can share discoveries, strengthen global networks, and translate knowledge into lasting change for plants, people, and the planet.

This is the moment to elevate the scientific legacy that has shaped Longwood and to look boldly toward the future. Around the world, gardens, research institutions, and conservation organizations are uniting to address the urgent challenges of our time. Longwood's strategy was developed by considering how we fit within this global framework of scientific contributors and advocates. We examined international plans that align with our mission and identified where our expertise can make the greatest contribution.

Our work aligns with the Global Strategy for Plant Conservation (GSPC) and the Kunming–Montreal Global Biodiversity Framework (KMGBF), as well as the United Nations Sustainable Development Goals (SDGs). Within this global framework, Longwood contributes as both a practitioner and a convener—connecting horticultural practice, scientific research, and education to advance our shared goals for biodiversity and sustainability. Longwood brings science to life within living landscapes, where experimentation, restoration, and display unite horticultural artistry with scientific rigor—demonstrating that beauty can be a powerful catalyst for understanding and care.

Guided by this international context, our Science Strategy brings our collective expertise into focus through four pillars—Conserve. Grow. Sustain. Inspire. Together, these pillars form the framework that unites our work across disciplines, linking research, practice, and purpose. They guide how we protect the living systems that sustain life, advance horticultural innovation, and share the knowledge and beauty that move people to act. Through them, we carry forward a legacy of discovery and stewardship—ensuring that Longwood's scientific impact continues to flourish, connect, and inspire for generations to come.

Our Strategic Objectives

Our strategic objectives define our focus on advancing impact in the years ahead. While the pillars unite the diverse disciplines of our science program, the objectives translate that vision into clear areas of action—anchored in research, technique, application, and collaboration.

From plant conservation and climate resilience to horticultural innovation, ecosystem stewardship, and science-led partnerships, our objectives are ambitious yet achievable—designed to advance our strategy with clarity and purpose. In addition to our core competencies across horticulture and ecology, agriculture has been integrated across all four pillars, expanding our capacity to study regenerative systems, ecosystem health, and landscape-scale sustainability.

The success of Longwood's Science Strategy will be defined by measurable impact—achieved through clear deliverables set across the phases of this plan. Each phase builds intentionally upon the last, ensuring that our work not only advances scientific outcomes but also demonstrates tangible results across our gardens, research, and partnerships. Just as vital as the work itself is how we communicate it. Sharing our progress, discoveries, and lessons learned—both within Longwood and across the broader scientific community—will be essential to driving continued collaboration, accountability, and inspiration.

Progress will be tracked through defined milestones and shared transparently across our teams and partners—ensuring that each phase of implementation builds measurable momentum toward our long-term objectives.

The pillars that define our Science program at Longwood Gardens are:

Conserve

Grow

Sustain

Inspire

Conserve

Conserve protects the living systems, cultures, and connections that sustain life on Earth. For Longwood, it means taking purposeful action to protect plants, restore ecosystems, and preserve the knowledge and practices that keep them thriving.

Through this work, we strengthen the roots of biodiversity—ensuring that what we safeguard today endures in the landscapes of tomorrow.

Objectives

1. **Protect our Global Garden:** Contribute to the conservation of global plant diversity.
2. **Safeguard Natural Systems:** Preserve the long-term biodiversity and health of our natural areas.
3. **Preserve Living Knowledge:** Capture and share our horticultural knowledge and expertise.
4. **Prepare for Change:** Lead the climate resiliency of our landscape.
5. **Reimagine Working Lands:** Steward a resilient agricultural landscape.

Grow

Grow fuels the innovation, creativity, and curiosity that move applied science forward. For Longwood, it means expanding knowledge, deepening expertise, and cultivating systems that allow our gardens—and our people—to thrive.

Through this work, we turn research into results, driving discovery that transforms how we grow, share, and celebrate plants.

Objectives

1. **Cultivate Collection Excellence:** Enrich the plant diversity and renown of our plant collections.
2. **Improve Soil Health:** Increase our capacity to improve the health of our soil and plants.
3. **Apply Ecological Science:** Advance innovative ecological research and land stewardship practice.
4. **Advance Horticultural Expertise:** Elevate our horticultural expertise and network to bring new techniques and plants to our displays.
5. **Champion Regenerative Practices:** Advance the understanding and practice of regenerative agriculture.

Sustain

Sustain protects the capacity of the planet to support life. For Longwood, it means caring for the systems that sustain our gardens and our world—operating responsibly, managing resources thoughtfully, and modeling practices that restore balance and resilience.

Through this work, we lead by example—demonstrating how responsible action today can regenerate the living systems of the future.

Objectives

1. **Advance Responsible Production:** Integrate sustainable practices throughout our floriculture production program.
2. **Close the Loop:** Improve the circularity of our material management.
3. **Protect our Water:** Develop and implement holistic stewardship plans for the health of our watersheds.
4. **Evaluate for the Future:** Ensure the sustainability of our plant evaluation program.
5. **Collaborate for Impact:** Grow our collaborations in agricultural practices to drive long-term sustainability.

Inspire

Inspire brings science and beauty together to reveal the wonder of the living world. For Longwood, it means sharing the art and science of horticulture in ways that spark curiosity, foster understanding, and deepen care for nature.

Through this work, we invite the world to see plants differently—igniting imagination, connection, and a shared sense of responsibility for the natural world.

Objectives

1. **Celebrate Global Horticulture:** Showcase horticultural techniques from around the world.
2. **Model Circular Practice:** Share best practices in material circularity and sustainability.
3. **Foster Conservation Connection:** Connect people to the beauty of our natural areas and the importance of their conservation.
4. **Illuminate the Living World:** Incite wonder in the extraordinary nature of plants.
5. **Cultivate Community Connection:** Advance a future where agriculture integrates with our environment and supports local communities.

How Our Science Creates Impact

By integrating research, production, stewardship, and display, Longwood transforms scientific understanding into living expression—uniting the science that sustains plants with the beauty that sustains people.

Inputs

- Expertise spanning horticulture, floriculture, ecology, agriculture, science communication, and soil science
- 1,700 acres of cultivated gardens, natural lands, and agricultural fields serving as living laboratories
- Global and regional collaborations that extend our reach and amplify collective impact
- Living collections, research infrastructure, and a legacy of scientific inquiry that unites beauty and science
- A highly engaged audience, on-site and online, that connects with knowledge through beauty, place, and shared experience

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Actions

- Conduct applied research, trials, and long-term ecological monitoring across our landscapes
- Integrate science into daily practice across gardens, natural areas, and operations
- Train and mentor the next generation of scientists, horticulturists, and creative growers
- Share discoveries through education, interpretation, and collaboration with peers and partners around the world

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Outcomes

- Resilient ecosystems and diverse landscapes strengthened through science-led stewardship and conservation horticulture
- Innovative displays and cultivation techniques that invite guests to wonder, learn, and connect—while advancing horticultural practice
- Expanded access to knowledge that informs sustainable management and regenerative design
- Stronger institutional and global networks that link research, artistry, and impact

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Impact

- Global contributions to plant conservation, horticultural innovation, and ecosystem restoration
- Greater public understanding of the living world through science-informed content and storytelling
- Collaborations and investment that support the global exchange of knowledge, practice, and conservation impact
- A regenerative model—where discovery and beauty together advance a sustainable future, ensuring a beautiful tomorrow

Conserve

Protecting Global Plant Diversity Through Partnership and Research

Home to approximately 10,000 plant species, including more than 1,100 endemics, Tanzania faces significant conservation challenges due to habitat loss and the illegal harvesting of orchid tubers for chikanda, a local delicacy. Many orchids, like those native to Tanzania, are affected by the global illegal plant trade. Through our participation in the Illegal Plant Trade Coalition, Longwood is helping to raise awareness and drive collective action to protect these species and the ecosystems they represent. Building upon our expertise in terrestrial orchid conservation here in Pennsylvania—where some of the very same orchid genera also occur—our scientists are working to share horticultural and conservation practices that may similarly support the protection of these species in Tanzania.

In collaboration with the Tanzania Plant Health and Pesticides Authority, the National Herbarium of Tanzania, and the Tanzania Sansevieria Foundation, Longwood scientists have developed research initiatives to conserve these unique orchids while preserving access to an important cultural food source through sustainable agricultural practices. Our collaborative team is advancing both in situ and ex situ conservation, developing protocols to transition from wild-harvested orchids to farmed crops.

Fieldwork to date in Tanzania's Southern Highlands has documented dozens of orchid populations representing at least 76 taxa, yielding more than 685 herbarium specimens and 63 seed collections. These collections form the foundation of our applied conservation horticulture research to assess seed bank viability and refine propagation techniques across developmental stages. Early results are promising, and future research will continue to expand this knowledge—building a lasting framework for orchid conservation that connects landscapes, livelihoods, and the shared stewardship of plant diversity.

This partnership exemplifies our science in action—linking research, collaboration, and global exchange to advance plant exploration, refine conservation and propagation protocols, and develop agricultural practices that sustain both orchid biodiversity and the communities that depend on it.

Longwood is collaborating with local partners in Tanzania to protect remarkable plants—from the rare waterlily *Nymphaea stuhlmannii* to terrestrial orchids threatened by overharvesting.

Grow

Stewardship Through Science: Cultivating Resilient Landscapes

Science drives our Land Stewardship and Ecology Program, grounding its work in field-based research that deepens understanding of native habitats and species. Recognizing that informed, strategic decisions require knowing the diversity that exists with us today, we launched the Ecological Plant Community Study in 2019 to document the composition and condition of our natural areas. Through the efforts of staff, nearly 100 volunteers, and collaborations with the Pennsylvania Natural Heritage Program and local botanists, we completed this baseline study in 2025—an achievement that established more than 200 long-term research plots across 750 acres of natural areas. These plots now serve as a living laboratory to monitor how ecosystems respond to restoration, reforestation, and environmental change.

The data from this research will inform adaptive management practices, guiding watershed restoration, species reintroduction, and reforestation efforts that strengthen ecosystem health and resilience. In 2024 alone, we planted 5,683 individual plants representing 67 species, connecting fragmented forests, reducing erosion, and testing climate-ready native species. Complementary efforts such as prescribed fire and meadow management further sustain the vitality of these landscapes. Looking ahead, this science-led stewardship approach will expand to Longwood Gardens' satellite property, Longwood at Granogue, a 505-acre cultural landscape located in New Castle County, DE, in the core of the Brandywine River corridor that was acquired in January 2024. We will integrate agroecological research and regenerative land practices into our growing network of managed landscapes—advancing the Grow pillar of our Science Strategy through applied research that unites conservation and innovation in stewardship.

From long-term research plots and reforestation plantings to meadow and fire management, our Land Stewardship and Ecology team is advancing ecosystem resilience through applied research and restoration.

Sustain

Building a Model for Material Circularity

Transforming greens, brush, soil, and woody debris into high-quality compost and mulch for use in our Gardens and the local community is a long-standing example of our commitment to sustainable practices. This initiative serves as a model for material circularity, managing resources within a closed-loop system to maximize reuse and minimize waste. Each year, we strive to bridge the gap between the volume of materials collected and the full utilization of the products we create, advancing our mission to redefine sustainable practices.

Annually, we convert 10,000 cubic yards of garden waste—equivalent to 3 Olympic-sized swimming pools—to produce 5,000 cubic yards of compost and soil amendments. This process supports garden beautification and reforestation to scientific studies and site maintenance, reducing costs and driving innovation. Every cycle brings new insights into how we can refine our processes, strengthen product consistency, and increase utilization across the organization. In 2023, our compost earned STA certification from the US Composting Council, a milestone in our ongoing pursuit of quality and transparency. Looking ahead, we are building on this foundation to increase utilization, awareness, and alignment around how materials are managed across the Gardens—creating greater efficiencies and deeper understanding of their value. This work lays the groundwork for future progress—broadening how we apply sustainable principles, manage resources responsibly, and model practices that restore and renew the world around us, advancing our Sustain objectives in our Science Strategy.

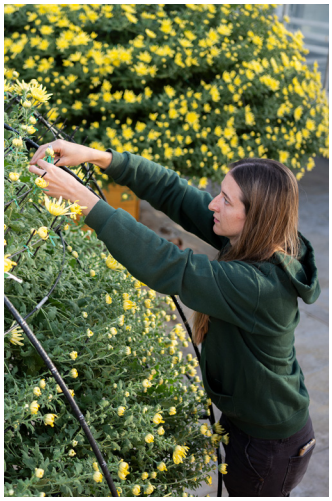
Our composting practices annually divert 10,000 cubic yards of garden waste into 5,000 cubic yards of rich compost.

Inspire

Linking People and Plants Through Global Horticultural Technique

Working with plants is undoubtedly a science—but it is also an artform rooted in patience, collaboration, resilience, and adaptability. Our Floriculture Production team utilizes innovative practices alongside notable horticultural traditions of the past. One example, known in Japan as Ozukuri, is growing the Thousand Bloom Chrysanthemum. A challenging and meticulous process that originated in China and expanded to Japan several hundred years ago, the goal is to cultivate a single chrysanthemum that produces hundreds of perfectly balanced blooms on one plant. For our annual Chrysanthemum Festival, our expert horticulturists undertake an intensive 18-month process of growing, pinching, and tying the plant to a customized frame. After a wilting period that allows the stems to become more flexible, each bloom is carefully positioned to form the traditional dome shape. In 2023, we achieved 1,542 blooms on a single plant spanning more than 12 feet in diameter—the largest ever grown outside of Japan.

Beyond the Thousand Bloom, through rigorous trials, innovative propagation techniques, and a commitment to excellence, we cultivate and train more than 100,000 plants annually, representing 1,300 taxa from around the globe. Our specialized facilities with multiple growing zones allow us to meet the diverse cultural requirements of each plant, ensuring they are at their peak when showcased in our seasonal displays. Every day is a flower show at Longwood. Through our strategic plan, we will build on our horticultural artistry and innovation to connect people and plants—advancing our Inspiration objectives through collaboration, creativity, and the exchange of ideas that bring horticulture to life.



Longwood's Floriculture Production team trains the Thousand Bloom Chrysanthemum for display using a horticulturally intense process of pinching and tying the plant to a customized frame.

Our Team

Achieving our strategy will be accomplished through our team of scientists and specialists, each contributing scientific expertise and perspective from the cellular to the ecosystem scale, working alongside collaborators and partners from around the world:

- **Conservation Horticulture & Collections**
  Conducts propagation and conservation research to protect plant diversity and strengthen living collections for future study and exchange.

- **Floriculture Production**
  Integrates experimentation, applied research, and horticultural craftsmanship to refine cultivation techniques and advance display innovation.

- **Land Stewardship & Ecology**
  Uses ecological monitoring, applied science, and adaptive management to restore natural systems and promote resilient landscapes.

- **Regenerative Agriculture**
  With our expanded focus, upcoming phases of the Strategy will introduce this expertise—applying research and field-based trials to advance sustainable and regenerative practices that connect working lands to environmental health.

- **Soils & Compost**
  Investigates soil health and organic recycling systems to optimize plant performance and model circular resource management.

- **Science Communications**
  Translates scientific work into accessible narratives and learning experiences that connect people to plants, landscapes, and discovery.

Together, this collective of scientists, professionals, and storytellers embodies the unity of purpose that defines Longwood Science—turning curiosity into discovery, and discovery into impact and inspiration.

Our Collaborations

Our collaborations extend across disciplines and geographies—linking research, practice, and education to advance shared goals for plants, people, and the planet. Together, these partnerships expand our reach, deepen our expertise, and strengthen our science.

Global Networks
Engaging with international garden and conservation networks to share knowledge, coordinate research, and advance ethical plant stewardship.

Industry Partners
Collaborating with growers, breeders, and industry leaders to advance horticultural innovation, translate research into practice, and responsibly scale solutions that support cultivated plant biodiversity and sustainable production.

Research Institutions
Partnering with universities, botanical programs, and conservation organizations to design and implement studies that inform real-world applications.

Government and Nonprofit Programs
Collaborating with regional, national, and international agencies to document biodiversity, guide conservation policy, and expand training opportunities.

Sustainability and Agricultural Organizations
Working with leaders in regenerative agriculture, soil science, and compost innovation to model circular practices and resilient food systems.

Together, these collaborations bring science and shared purpose to bear—mobilizing expertise across disciplines and institutions to address the complex challenges of our time.

In Summary

At Longwood, science is the foundation that sustains our gardens and the living systems they represent. It informs how we grow, conserve, and care for plants; how we understand the intricate relationships between people and nature; and how we contribute to a healthier, more resilient planet. This work is grounded in an extraordinary living platform—a plant collection of more than 13,000 taxa across 12 core collections (including four accredited through the Plant Collections Network), stewarded across nearly 1,700 acres of cultivated gardens, natural lands, and agricultural fields.

This strategy comes at a pivotal time—when our long-term scientific objectives are clearly defined, and our focus must be on achieving them. With over 200 long-term ecological research plots, 100,000 square feet of production greenhouses, two acres of conservatories, and a five-acre soils and composting facility, Longwood brings together the infrastructure, expertise, and scale needed to translate knowledge into action. The Science Strategy provides the structure, coordination, and shared purpose required to fully realize this potential and advance the goals that will shape our future.

Our Science Strategy charts a path forward—uniting discovery, creativity, and stewardship across four pillars: Conserve, Grow, Sustain, and Inspire. Together, these pillars guide how we protect plant diversity, deepen ecological understanding, strengthen sustainable practices, and share the wonder that moves people to care.

In a changing world, this work cannot be done alone. Progress depends on collaboration—within our teams, across disciplines, and through partnerships that extend far beyond our garden gates. Together, we are building the knowledge, networks, and shared commitment needed to safeguard biodiversity and sustain the living world.

At Longwood, the pursuit of beauty and the pursuit of knowledge are one and the same. Together, they remind us that caring for plants is caring for the future—ensuring a beautiful tomorrow.

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