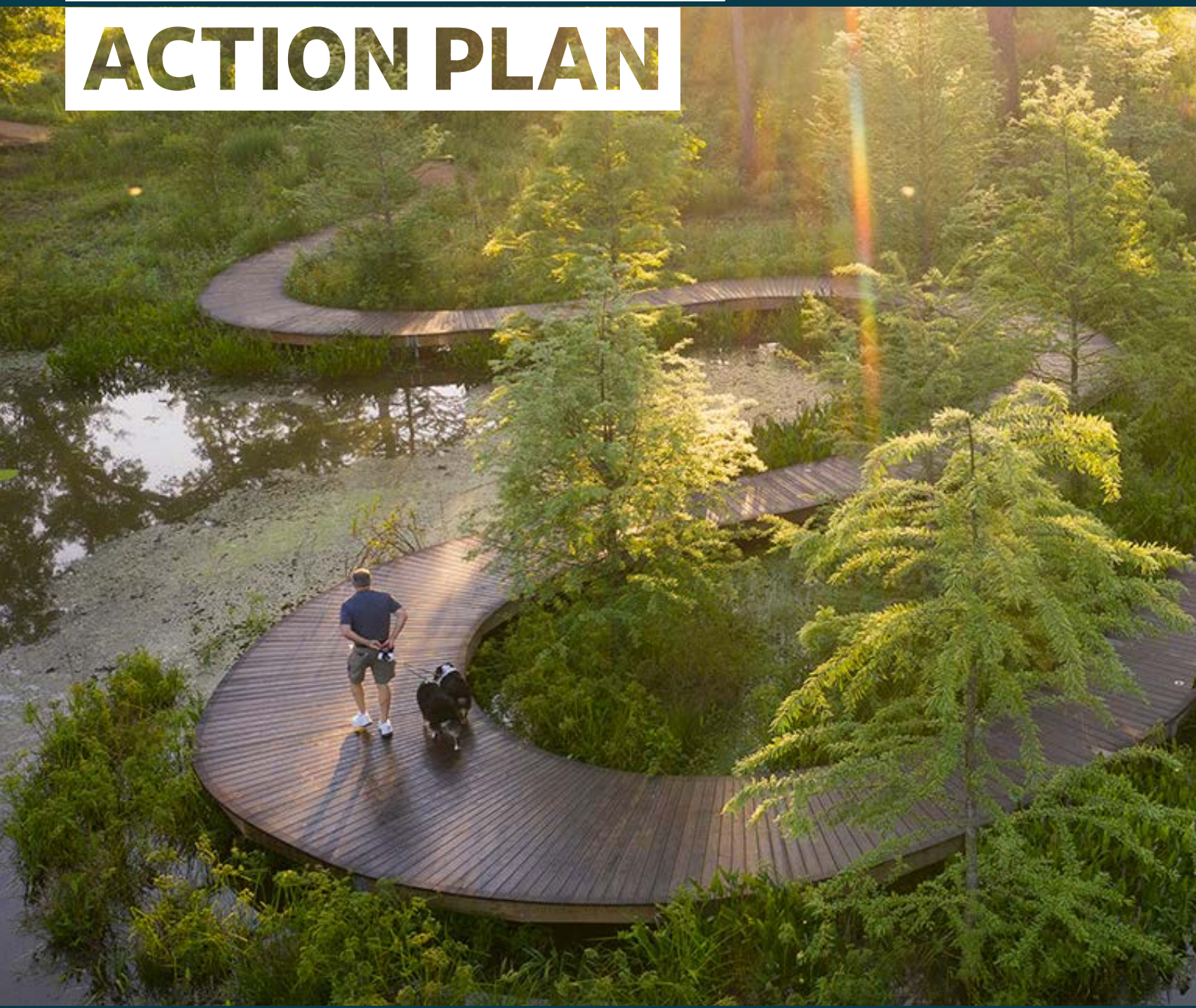
LANDSCAPE ARCHITECTURE 2040

CLIMATE & BIODIVERSITY ACTION PLAN



FOR ASLA AND ASLA CHAPTERS

2026–2030

American Society of Landscape Architects

ASLA Fund

Our Vision for 2040 -
All landscape architecture projects will:

- Achieve zero greenhouse gas emissions and double carbon sequestration from business as usual.
- Protect, conserve, restore, enhance, and manage biodiversity
- Provide significant economic benefits in the form of measurable ecosystem services, cobenefits, and livelihoods.
- Address climate and biodiversity injustices, amplify the power of communities, and increase the equitable distribution of climate and biodiversity investments.

To continue our work to achieve this vision, we have significantly updated our first plan — the ASLA Climate Action Plan — and its companion Field Guide to Climate Action for ASLA Members, which guided our efforts from 2022-2025.

The new, updated plan — **Landscape Architecture 2040: Climate & Biodiversity Action Plan** — builds on our progress and guides our profession into the future. It has one volume for landscape architects and another for ASLA and ASLA chapters.

The plan will be implemented over the next five years — from 2026 to 2030. It sets important new targets for realizing our 2040 vision, establishing an ambitious set of 2030 benchmarks to meet in the areas of biodiversity, greenhouse gas emission reductions, carbon sequestration, adaptation, economic benefits, and climate and biodiversity justice.

This new plan represents a major shift. We know the climate and biodiversity crises are equal priorities. So, we have developed an ambitious plan for addressing both crises — through landscape architecture.

Landscape architects can help communities stop and then turn back the rapid loss of ecosystems and biodiversity. We can speed

"Nature-based solutions are the way to address the climate and biodiversity crises together. They are key to achieving a future with healthier communities and ecosystems for all."

(Cover) By restoring the original prairie, savannah, and woodland ecosystems at the Houston Arboretum in Houston, Texas, landscape architects designed a landscape naturally resilient to future climate impacts, including more frequent and severe hurricanes, flooding, and drought. Houston Arboretum and Nature Center, Houston, Texas. Image Credit: Design Workshop and Reed Hilderbrand / Brandon Huttenlocher/Design Workshop

up our work to achieve global biodiversity goals — protecting and restoring at least 30 percent of terrestrial, coastal, and marine ecosystems by 2030 (30 x 30).

We will do this by using our projects to:

- Strengthen ecosystems
- Conserve habitat for species
- Plant native trees and plants
- Protect and restore soil health
- Manage invasive species
- Create ecological corridors

At the same time, we will continue to help communities reduce their greenhouse gas emissions, sequester more carbon, and address worsening climate impacts, like extreme heat, flooding, drought, sea level rise, wildfire, and air and water pollution.

Nature-based solutions are the way to address the climate and biodiversity crises together. They are key to achieving a future with healthier communities and ecosystems for all.

With this updated plan, we recommit to using our collective voice to advocate for greater investment in nature-based solutions locally, nationally, and internationally.

We recommit to nature-based solutions because they are also good for the economy. These solutions have been proven time and again to strengthen local economies, encourage new development, increase property values, reduce insurance risks and costs, and create good paying jobs that can't be outsourced — in all communities.

Their construction costs can be up to 30 percent less and their maintenance costs up to 25 percent less than conventional gray infrastructure. These solutions also result in communities and ecosystems that are more resilient over the long-term and avoid increasingly destructive and costly future impacts.

ASLA and ASLA chapters can't do this alone — the plan identifies the many partners we need to move this work forward over the next five years. We hope you will join us in achieving this life-enhancing vision.

Kona Gray, FASLA, PLA
ASLA President

Torey Carter-Conneen, Hon. ASLA
ASLA CEO

This plan is made possible by the ASLA Fund, which supports landscape architecture's vital role in addressing climate change and biodiversity loss through research, education, and advocacy.

The mission of the ASLA Fund: Investing in global, social, and environmental change through the art and science of landscape architecture.

This plan is dedicated to Kongjian Yu, FASLA, PhD, Founder, Turenscape and Professor and Founding Dean, College of Architecture and Landscape, Peking University.

Kongjian led the world in envisioning a more harmonious relationship between people and nature. His projects, speeches, and writings inspired tens of thousands of landscape architects worldwide and captured the public's imagination. He saw landscape architecture as a "strategic and scientific tool" for solving the climate and biodiversity crises. He was a colleague, friend, and mentor to so many in our community.

Landscape architects can be leaders in addressing the challenges of climate change and biodiversity loss. We have expertise in design, ecology, and cultural understanding that allows us to integrate natural systems with the built environment. We can design sites, infrastructure, and communities that are resilient, biodiverse, equitable, and provide economic benefits.

Landscape architects design nature-based solutions — like green roofs, wetlands, urban forests, parks, and green, complete streets — to reduce flood risks, cool cities, improve soil and water quality, and restore ecological function. Through planting and ecological restoration strategies, our projects can offset greenhouse emissions generated during construction and contribute to zero emissions goals. When designed for long-term ecological performance, these landscapes can deliver climate and biodiversity positive outcomes.

We play a central role in planning low-carbon, resilient communities. Through collaboration with planners, architects, and transportation engineers, we design compact, transit-oriented, and walkable developments with an integrated network of green spaces. These places reduce fossil fuel use, improve public health, reduce heat islands, and provide equitable access to green spaces.

We realize economic benefits through lower healthcare costs, reduced cooling loads, reduced infrastructure costs, and improved air quality.

At the regional scale, we plan for larger systems that support ecological and community resilience. We protect habitat networks, restore degraded landscapes, enhance watersheds, and build regional green infrastructure. This work strengthens biodiversity, improves landscape connectivity, and reduces vulnerability to climate impacts.

Collaboration on this work is essential to our collective success. The scale and complexity of climate and biodiversity challenges require integrated, interdisciplinary approaches. This new plan

> **"Our ability to understand complex systems and design for both ecosystems and people makes us critical partners in climate and biodiversity action."**

drives forward collaboration, presenting the opportunities for landscape architects to:

- Partner with engineers to implement resilient infrastructure
- Collaborate with architects to align building and site performance
- Work with ecologists to guide habitat restoration
- Work with local communities to elevate their voices for equitable climate and biodiversity positive design
- Engage planners and policymakers to shape land use, transportation, and environmental policy

Our ability to understand complex systems and design for both ecosystems and people makes us critical partners in climate and biodiversity action.

To support climate and biodiversity positive design, we must be actively involved in policy, funding, and planning decisions. Our perspective provides insights on land stewardship, climate adaptation, and ecological restoration. We can inform regional frameworks, development regulations, and investment priorities.

Landscape architects are leaders — alongside allied professionals — in shaping a more climate resilient, biodiverse, and equitable environment.

With this updated plan, ASLA and ASLA chapters will invest in:

- Strengthened leadership in equitable climate and biodiversity positive design.
- Greater awareness about the important role of landscape architecture in addressing climate change and biodiversity loss.
- New tools and resources for equitable climate and biodiversity positive design.
- The performance and business case for climate and biodiversity positive design.
- Advocacy with policy makers, suppliers, and allied professionals for climate mitigation, resilience, and biodiversity.
- Stronger alliances with professional organizations and partners.

Together, we can move from reducing harm to designing regenerative places — creating landscapes that support health, safety and welfare of people and the planet.

Meg Calkins, FASLA, FCELA
Chair, ASLA Climate & Biodiversity Action Plan Task Force
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Partnering with Chicago's Uptown community, landscape architects at MKSK reimagined the Winthrop Family Historical Garden, creating a community space that "celebrates the rich heritage, resilience, and legacy of Black families who helped found the Uptown's cultural diversity despite racial segregation." Image Credit: ASLA 2024 Professional Urban Design Honor Award. Celebrating Community Resiliency: An Equitable Garden Transformation. Chicago, Illinois. MKSK, Inc. / Scott Shigley

Equity Acknowledgement

The American Society of Landscape Architects acknowledges the impacts of climate change, biodiversity loss, and environmental degradation have a greater impact on Indigenous peoples, underserved populations, and marginalized communities. These groups have historically been excluded — and often continue to be excluded — from decision-making, and their lands and resources have been appropriated without consent.

We recognize the deep-rooted knowledge and stewardship of Indigenous peoples whose practices offer essential guidance for regenerative design and climate resilience. We stress the need for placing their voices and leadership at the center of environmental restoration and climate resilience efforts.

We commit to advancing equity for all people by advocating for inclusive, community-driven approaches that:

- Address systemic inequities
- Champion environmental justice by amplifying underrepresented voices in decision making
- Ensure that all communities have equitable access to healthy, sustainable, and thriving environments.

ASLA CLIMATE AND BIODIVERSITY ACTION PLAN TASK FORCE

Acknowledgements
ASLA is grateful for the work of the ASLA Climate & Biodiversity Action Plan Task Force, who gave freely of their time and expertise to create this plan.

We are also very thankful for the substantive input from experts in the ASLA Climate & Biodiversity Plan Advisory Group.

Lastly, we appreciate the strong foundation that Pamela Conrad, ASLA, Diane Jones Allen, FASLA, José Almiñana, FASLA, Sarah Fitzgerald, ASLA, and Vaughn Rinner, FASLA, built with the 2022 Climate Action Plan and Field Guide.

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INTRODUCTION

Landscape architects are uniquely qualified to address the urgent imperatives of climate change and biodiversity loss by planning and designing equitable, regenerative places. This work supports our professional mandate of creating places that protect the health, safety, and welfare of people and communities. ASLA and ASLA Chapters are committed to supporting landscape architects in this work by providing them with resources and information and advocating for their work with other professionals, organizations, and decision makers.

The ASLA Climate & Biodiversity Plan has established a vision for 2040.

All landscape architecture projects will:

- Achieve zero greenhouse emissions and double carbon sequestration from business as usual.
- Protect, conserve, restore, enhance, and manage biodiversity.

In a historically marginalized neighborhood in Lynwood, California, landscape architects with SWA Group began to repair the damage from the discriminatory placement of Interstate 105, transforming five blocks of vacant lots between the freeway and residential neighborhood into a linear park. Image Credit: ASLA 2021 Professional Urban Design Award of Excellence. Repairing the Rift: Ricardo Lara Linear Park. Lynwood, California. SWA Group / SWA Group/David Lloyd

- Provide significant economic benefits in the form of measurable ecosystem services, co-benefits, and livelihoods.
- Address climate and biodiversity injustices, amplify the power of communities, and increase the equitable distribution of climate and biodiversity investments.

To realize this vision, there are immediate benchmarks that must be achieved over the next five years by 2030.

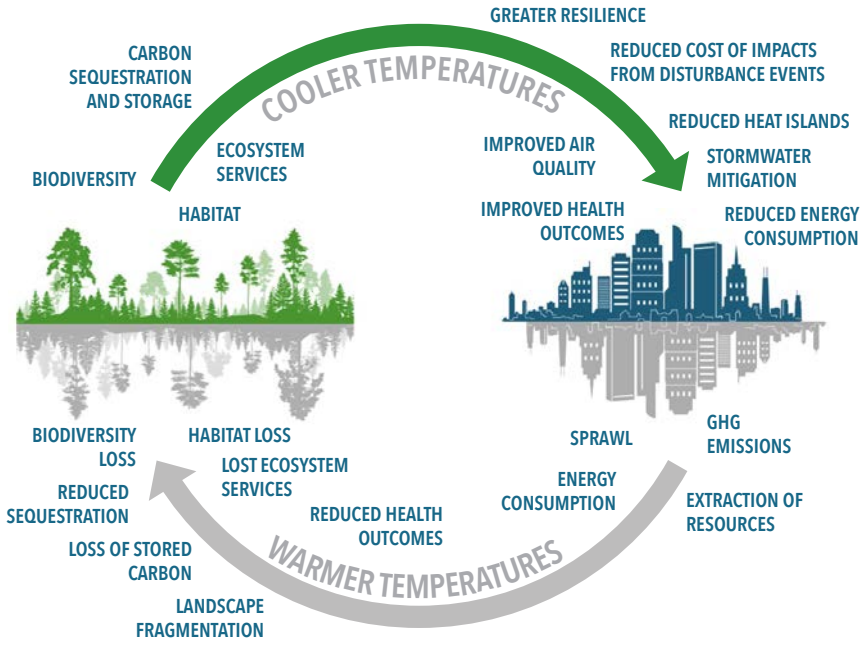
All landscape architecture projects will:
- Achieve a 50-65 percent reduction in greenhouse emissions and double carbon sequestration from business as usual.
- Increase biodiversity through protection, conservation, restoration, enhancement, and management strategies, supporting goals of protecting 30 percent of existing ecosystems and restoring 30 percent of degraded ecosystems.
- Provide significant economic benefits in the form of measurable ecosystem services, cobenefits, and livelihoods.
- Address climate and biodiversity inequities by amplifying the power of communities, supporting local leadership, and increasing the equitable distribution of climate and biodiversity investments.

The goals, objectives, and actions in this plan reflect the integrated approach for climate and biodiversity positive design. Both climate and biodiversity positive design must consider equity, with an inclusive design process and equitable access.

The relationships between biodiversity loss and climate change require integrated efforts to address both issues at the same time. Protecting biodiversity can help mitigate climate impacts, while reducing greenhouse gas emissions can support ecosystem resilience and foster biodiversity.

Climate positive design employs:
- Low-carbon, resource-efficient construction materials and methods
- Energy efficient and low or zero fossil fuel maintenance practices
- Planning for sustainable, multimodal, low-carbon communities
- Increased sequestration through plantings to offset embodied carbon
- Nature-based solutions for climate resilience

Biodiversity positive design protects, conserves, restores, enhances, and manages:
- Functioning ecosystems that provide ecosystem services
- Habitat and habitat connectivity that support flora and fauna
- Overall biodiversity



Biodiversity is connected to the climate, creating a circular relationship that both exacerbates and improves environmental and human health impacts. The top half of the circle illustrates the positive impacts that biodiversity has on the built environment, while the bottom half illustrates the negative impacts that urbanization and industry have on biodiversity.
Image credit: Meg Calkins

The ASLA Climate & Biodiversity Task Force and Advisory Group have created an action plan in two volumes:

Landscape Architecture 2040: Climate & Biodiversity Action Plan For ASLA and ASLA Chapters

This volume is written for National ASLA and ASLA Chapters. This is an updated and expanded version of the 2022 Climate Action Plan. This plan continues a path of action for National ASLA and ASLA Chapters to support their members in equitable, climate and biodiversity positive planning and design.

Landscape Architecture 2040: Climate & Biodiversity Action Plan For ASLA Members

This volume is intended for ASLA members to use individually and in their firms, public institutions, non-profit organizations, and community groups. This is an updated and expanded version of the 2022 Field Guide. This plan offers actions for equitable climate and biodiversity positive practices in projects and business operations.

THE RELATIONSHIP BETWEEN CLIMATE CHANGE AND BIODIVERSITY

Biodiversity loss is closely intertwined with climate change, creating a feedback loop that exacerbates environmental and human health impacts. As global temperatures rise due to increased greenhouse gas emissions, wildlife health is affected by habitat destruction, altered migration patterns, and disrupted breeding cycles. Plants struggle to adapt to shifting climate zones, resulting in reduced growth, greater competition from invasive species, and loss of native plant communities. These challenges disrupt ecosystems, reducing their capacity to sequester carbon and regulate climate, further accelerating climate change.

OUR COLLABORATORS

Collaboration with allied disciplines, scientists, product manufacturers and material suppliers, community members, and traditional knowledge bearers is key to the success of this plan. Annotations indicate which collaborators are needed to achieve the actions outlined.

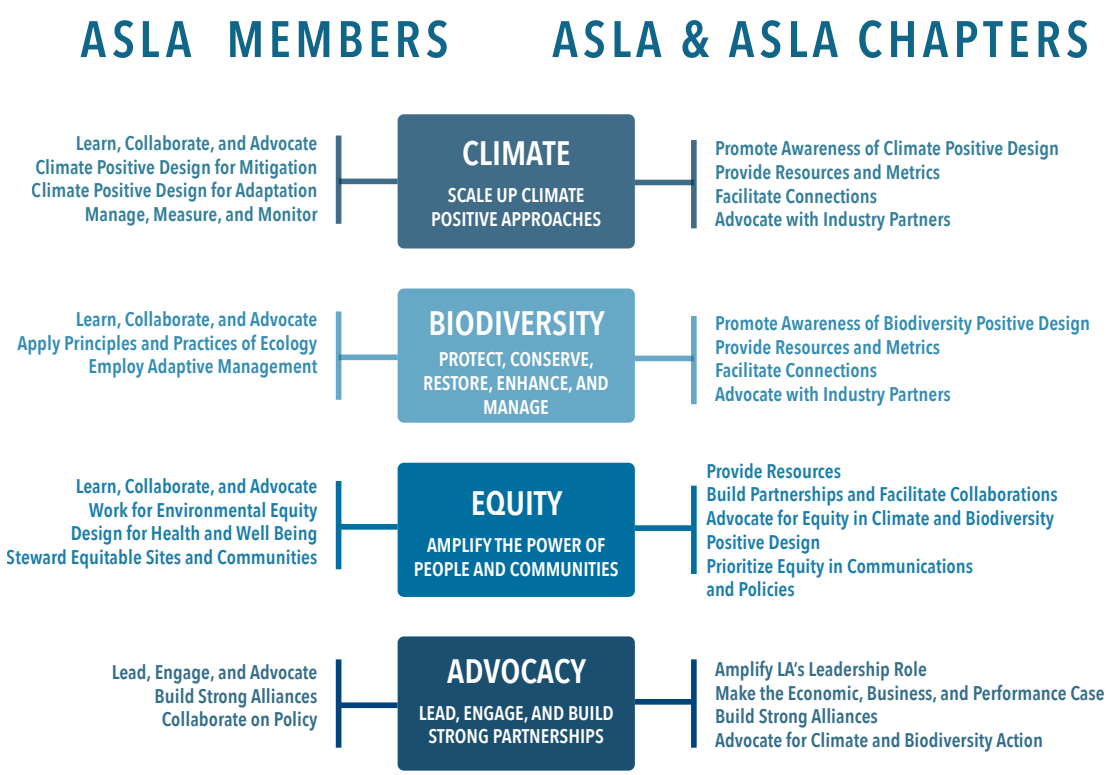
AR	Architects
CE	Civil engineers
CG	Community groups
CHP	ASLA Chapters
CL	Client, owner
CM	Community members, citizen scientists

While landscape architects and ASLA play critical roles in addressing the climate and biodiversity crises, we cannot engage these imperatives alone. Collaboration with allied disciplines, scientists, product manufacturers, community members, and traditional knowledge bearers is key to success. This plan uses annotations to indicate which collaborators are needed to achieve the actions outlined (see sidebar).

These volumes have been developed to support global initiatives aimed at enhancing climate resilience and protecting biodiversity. In the field of landscape architecture, this plan aligns with the Climate Action Commitment set forth by the International Federation of Landscape Architects (IFLA). It also aligns with broader international frameworks, including the United Nations Sustainable Development Goals, the Kunming-Montreal Global Biodiversity Framework's goals, the Architecture 2030 Challenge.

OUR COLLABORATORS (CONTINUED)

CN	Contractors
COE	Coastal engineers
DE	Developers
EC	Economists, economic benefit analysts
ECO	Ecologists, natural resource scientists, biologists
ENV	Environmental Engineers
GE	Geotechnical Engineers
GOV	Governments
HI	Historians, archaeologists
HO	Horticulture and Nursery Industry
HQ	ASLA National
INS	Insurers
INV	Investors
LA	Landscape architects
LCA	Life cycle analysts
MFR	Manufacturers
NGO	Non-governmental and non-profit organizations
NN	Native Nations
PL	Planners
PRO	Professional organizations
PUB	General public
RE	Non-academic researchers
SE	Structural Engineers
SM	Site managers
STU	Students
SUP	Material suppliers and vendors
TE	Transportation Engineers
TKB	Traditional knowledge bearers, Indigenous peoples
UNI	Academic institutions



ASLA 2040: Climate and Biodiversity Action Plan volumes are organized around four key goals addressing Climate, Biodiversity, Equity and Advocacy. The goals are the same for both volumes, but the objectives differ. Image credit: Meg Calkins

This document, which is for National ASLA & ASLA Chapters, offers a comprehensive set of goals, objectives, actions, and success measures for ASLA and its chapters to achieve. Actions in this volume align with and complement actions in the volume for ASLA members. The actions in these volumes work together to advance goals – some need to be achieved at the ASLA organizational level while others can only be advanced by members and their firms and organizations.

This volume is organized around four key goals for ASLA and ASLA Chapters:

- Climate: Scale up climate positive approaches
- Biodiversity: Protect, conserve, restore, enhance and manage
- Equity: Amplify the power of people and communities
- Advocacy: Advance climate and biodiversity action through leadership and engagement

Each goal includes specific objectives and numerous actions that National ASLA and Chapters can take to amplify the work of ASLA members. This action plan links to additional resources – including relevant national and international standards – to guide implementation and further learning.

GOAL 1
CLIMATE

Scale up climate positive approaches for mitigation and resilience. Reduce GHG emissions by 50-65% by 2030, zero emissions by 2040; 2 x sequestration from business as usual

OBJECTIVES	ACTIONS
OBJECTIVE 1.1 Promote awareness of the importance of climate mitigation and adaptation in the practice of landscape architecture.	ACTION 1.1.1 Develop practice-centered communications and education campaigns that promote a deeper awareness of landscape architects' role addressing the climate crisis.
	ACTION 1.1.2 Collect and publish data on the economic, equity, and health benefits of climate positive design and nature-based solutions.
	ACTION 1.1.3 Conduct market research to determine new markets for landscape architecture services related to climate mitigation and resilience.
	ACTION 1.1.4 Leverage ASLA's own commitment to achieve zero emissions in all of its business operations by 2040 to advocate to and educate the profession.
	ACTION 1.1.5 Launch a climate and biodiversity positive design commitment program to support landscape architecture organizations' and product manufacturers' efforts to measure the climate and biodiversity benefits and impacts of their projects.
	ACTION 1.1.6 Develop a climate and biodiversity award category for the ASLA Professional and Student Awards.

OBJECTIVES	ACTIONS
OBJECTIVE 1.1 (continued)	**ACTION 1.1.7** Recognize progress on climate and biodiversity positive design at national and state ASLA conferences and events.
OBJECTIVE 1.2 DESIGN Provide resources to inform, guide, and support ASLA members' efforts in climate positive design and resilience.	**ACTION 1.2.1** Develop standard methods for organizations to track GHG emissions on their projects.
	ACTION 1.2.2 Develop landscape architecture industry baselines for embodied carbon emissions, operational carbon emissions, and carbon sequestration.
	ACTION 1.2.3 Promote use of emissions measurement tools, including carbon calculators, such as Pathfinder and Carbon Conscience, and environmental product declarations (EPDs).
	ACTION 1.2.4 Pursue and fund research on carbon emission and sequestration impacts that are not captured in typical project or product LCAs.
	ACTION 1.2.5 Develop and promote metrics for measuring climate resilience strategies.
	ACTION 1.2.6 Coordinate climate mitigation and adaptation efforts within ASLA by aligning goals, resources, and outcomes.
	ACTION 1.2.7 Curate and prioritize climate mitigation and adaptation strategies in ASLA national, regional, and chapter conference education sessions.
	ACTION 1.2.8 Continue to develop toolkits, guides, and professional education webinars specific to climate mitigation.
	ACTION 1.2.9 Provide guidance on tools and techniques for measuring carbon emissions and sequestration impacts.
	ACTION 1.2.10 Develop toolkits, guides, and professional education webinars specific to climate resilience.

OBJECTIVES	ACTIONS
OBJECTIVE 1.2 DESIGN (continued)	**ACTION 1.2.11** Form regional working groups to share information about specific climate shocks and stressors in the region.
	ACTION 1.2.12 Develop toolkits, guides, and professional education webinars for organizations and firms to create their own climate and biodiversity action plans.
OBJECTIVE 1.3 Facilitate collaborations with allied professions and other organizations to support climate positive design and nature-based solutions.	**ACTION 1.3.1** Strengthen partnerships with allied professions and organizations engaging in climate and biodiversity positive design, nature-based solutions, low carbon community design, sustainable transportation, and social and climate justice.
	ACTION 1.3.2 Engage with existing standards and certification programs to enhance and expand credits related to climate positive design.
	ACTION 1.3.3 Work with the Landscape Architecture Foundation (LAF) to expand criteria for measuring embodied carbon and sequestration in their Case Study Investigation projects.
	ACTION 1.3.4 Develop and maintain a searchable database of ASLA members who are climate mitigation or climate resilience experts.
	ACTION 1.3.5 Expand investment in peer-reviewed, funded research on climate mitigation and resilience topics through the ASLA Fund.
OBJECTIVE 1.4 Engage product manufacturers, suppliers, vendors, and nurseries to support climate mitigation and resilience.	**ACTION 1.4.1** Advocate for lower embodied carbon products with manufacturers, suppliers, vendors, and nurseries.
	ACTION 1.4.2 Provide a toolkit to manufacturers, suppliers, vendors, and nurseries, setting expectations for third party verified data and reductions in the climate and biodiversity impacts of materials and products.
	ACTION 1.4.3 Coordinate with existing EPD databases to increase listings and improve the search interface for products specific to landscape architecture projects.

GOAL 2
BIODIVERSITY

Protect, conserve, enhance, restore, and manage for biodiversity. Support the goals of protecting 30% of existing ecosystems and restoring 30% of degraded ecosystems by 2030, with a goal of protecting and enhancing biodiversity on each project.

OBJECTIVES	ACTIONS
OBJECTIVE 2.1 Promote awareness of the importance of biodiversity in the practice of landscape architecture.	ACTION 2.1.1 Develop communications and education campaigns that promote landscape architects' role in addressing biodiversity in design and planning.
	ACTION 2.1.2 Improve and maintain the ASLA website with biodiversity news and links to curated resources for addressing the biodiversity crisis.
	ACTION 2.1.3 Collect and publish data on the economic, equity, and health benefits of long-term resilience in landscapes and the key role of biodiversity.
	ACTION 2.1.4 Expand the presence of biodiversity positive design approaches in ASLA national, regional, and chapter conferences and communications.
	ACTION 2.1.5 Develop a toolkit for speaking with clients, project teams, and community partners to aid in prioritizing conservation and biodiversity in design and planning.
	ACTION 2.1.6 Develop an award for biodiversity in the design and planning categories of the ASLA Professional and Student Awards.

OBJECTIVES	ACTIONS
OBJECTIVE 2.2 Create curated and centralized resources to inform, guide, and support ASLA members' efforts in biodiversity positive design.	**ACTION 2.2.1** Develop toolkits, guides, and professional education webinars specific to biodiversity issues, landscape ecology, ecosystem services, and biodiversity positive design.
	ACTION 2.2.2 Expose landscape architects to international standards for biodiversity and build understanding of their design applications.
	ACTION 2.2.3 Identify, evaluate, and share a range of methods for measuring and monitoring the biodiversity impact of projects.
	ACTION 2.2.4 Connect ASLA members to research and knowledge on biodiversity, landscape ecology, and ecosystem services relevant to their design and planning work.
	ACTION 2.2.5 Promote collaboration between landscape architecture programs and the sciences at colleges and universities.
	ACTION 2.2.6 Curate and prioritize biodiversity positive design, regenerative and restorative landscapes in ASLA national, regional, and chapter conference education sessions.
	ACTION 2.2.7 Form regional working groups to share information about regional biodiversity issues and strategies to support biodiversity positive design.
	ACTION 2.2.8 Promote credentialing and certification programs in landscape ecology and ecosystem services.
OBJECTIVE 2.3 Facilitate a broad network of practice through relationships with allied professions and organizations to support biodiversity positive design and planning.	**ACTION 2.3.1** Increase profile and strengthen partnerships with allied professions and organizations to promote the role of landscape architects in addressing the biodiversity crisis.
	ACTION 2.3.2 Facilitate collaboration with scientists and researchers on biodiversity.
	ACTION 2.3.3 Curate spaces for dialogue within the agriculture, aquaculture, fisheries, and forestry industries to expand the description of integrated nature-based solutions, balancing food security and conservation priorities.

OBJECTIVES	ACTIONS
OBJECTIVE 2.3 (continued)	**ACTION 2.3.4** Advocate for biodiversity positive policies, regulations, planning and development best practices to local, state, national, and global policymakers.
	ACTION 2.3.5 Collaborate with landscape architecture organizations to develop resources, monitoring protocols, and data on biodiversity positive design strategies for ecosystem types.
	ACTION 2.3.6 Develop and maintain a searchable database of landscape ecologists, restoration ecologists, conservation biologists, and other experts.
OBJECTIVE 2.4 Engage product manufacturers, suppliers, vendors, and nurseries to support biodiversity positive design.	**ACTION 2.4.1** Advocate for industry shifts that promote native plants, optimized growing practices, and safer chemicals.
	ACTION 2.4.2 Develop and distribute a toolkit to nurseries and suppliers about biodiversity goals, safer chemicals, and provision of information about the biodiversity impacts of their plant materials and products.
	ACTION 2.4.3 Increase connections between ecologists, local native plant societies, and nurseries to aid in plant selection and plant propagation.
	ACTION 2.4.4 Encourage development and disclosure of practices and policies that reduce the impacts of products and materials on biodiversity.

GOAL 3
EQUITY

Amplify the power of plural and diverse communities and people to achieve equitable climate and biodiversity positive design.

OBJECTIVES	ACTIONS
OBJECTIVE 3.1 Provide resources to support ASLA members' work in equitable climate and biodiversity positive design.	**ACTION 3.1.1** Provide training and resources for ASLA members and educators focused on community self-determination, understanding reparations, justice and privilege, trans-active engagement, empowerment techniques, and cultural literacy training.
	ACTION 3.1.2 Develop a toolkit and webinars for ASLA members about learning from, recognizing, and valuing the environmental knowledge and lived experience of Indigenous cultures, immigrants and other marginalized communities.
	ACTION 3.1.3 Develop a guide on how to identify and address past climate inequities and community environmental history through listening sessions with community members, civic leaders, and gatekeepers.
	ACTION 3.1.4 Provide training for both ASLA members and community leaders about techniques of participatory outreach and engagement that support equity for climate and biodiversity positive design.
	ACTION 3.1.5 Develop a continuing education series that expands cultural awareness of Indigenous nations and traditional knowledge, historic and ongoing stewardship practices, and landscape projects on unceded lands and traditional territories.

OBJECTIVES	ACTIONS
OBJECTIVE 3.1 (continued)	**ACTION 3.1.6** Develop equity measures and metrics that can be applied when executing all goals of the Climate and Biodiversity Action Plan for ASLA Members.
OBJECTIVE 3.2 Build partnerships and facilitate collaboration with allied professions, communities, and organizations to support equity in climate and biodiversity positive design.	**ACTION 3.2.1** Provide tools and resources for communities to address climate and biodiversity equity.
	ACTION 3.2.2 Build relationships with social justice and climate justice organizations.
	ACTION 3.2.3 Develop a communications campaign targeted to allied professionals, policymakers, and organizations about equity issues in climate mitigation, climate adaptation, and biodiversity positive design.
	ACTION 3.2.4 Identify, understand, and act on environmental injustices in collaboration with allied professions, community groups, and policy makers.
OBJECTIVE 3.3 Advocate for equity and equitable practices in climate and biodiversity positive design.	**ACTION 3.3.1** Work with state and local officials, planners, developers, and community advocates to advance equitable development as part of climate and biodiversity action goals.
	ACTION 3.3.2 Advocate for equitable distribution of projects and assets with municipal decision makers, community groups, and policy makers.
	ACTION 3.3.3 Advocate for the development of reconciliation plans for communities that have been separated from their territories and their roles of caring for the land.
OBJECTIVE 3.4 Place equity at the center of all ASLA resources, events, and communications.	**ACTION 3.4.1** Learn from, collaborate with, and support underserved communities in alignment with the ASLA Racial Equity Plan of Action.
	ACTION 3.4.2 Develop an inclusive Youth Climate Leadership Program and invite high school students from host cities to attend ASLA national, regional, and chapter conferences.
	ACTION 3.4.3 Expand the program that invites local climate action, biodiversity action, and environmental and climate justice organizations and community groups to attend ASLA national, regional, and chapter conferences.

OBJECTIVES	ACTIONS
OBJECTIVE 3.4 (continued)	**ACTION 3.4.4** Prioritize cultural inclusion and commemoration using inclusive, participatory processes and engaging community knowledge.
	ACTION 3.4.5 Prioritize equity in all objectives of the Climate & Biodiversity Action Plan for ASLA and ASLA Chapters.

GOAL 4
ADVOCACY

Establish landscape architects as leaders in climate and biodiversity positive design.

Build strong partnerships and advocate for equitable climate and biodiversity positive design.

OBJECTIVES	ACTIONS
OBJECTIVE 4.1 Communicate landscape architects' leadership role in addressing the climate and biodiversity crises.	**ACTION 4.1.1** Develop a communications strategy to disseminate climate and biodiversity positive design success stories to the public and allied professions.
	ACTION 4.1.2 Create a climate and biodiversity communications toolkit for ASLA Chapters to elevate their communications locally and regionally.
	ACTION 4.1.3 Amplify the voices of ASLA members engaging in climate positive and biodiversity positive design through media placement and communications.
	ACTION 4.1.4 Continue the ASLA Climate & Biodiversity Fellowship Program.
	ACTION 4.1.5 Promote a broader advocacy role for landscape architects in the climate and biodiversity crises.
	ACTION 4.1.6 Grow ASLA's social media and video content about climate mitigation, adaptation, and biodiversity work.

OBJECTIVES	ACTIONS
OBJECTIVE 4.2 Make the performance and business case for climate and biodiversity positive design.	**ACTION 4.2.1** Create an economic research agenda to support climate and biodiversity positive design.
	ACTION 4.2.2 Advance a dialogue with the insurance industry to promote landscape architecture's role in risk reduction.
	ACTION 4.2.3 Create a wiki of climate and biodiversity research, strategies, and other resources for members.
	ACTION 4.2.4 Expand the role of the Climate & Biodiversity Action Network to support regional practices in climate and biodiversity positive design.
OBJECTIVE 4.3 Build strong partnerships and support global frameworks.	**ACTION 4.3.1** Expand ASLA's engagement with global forums related to climate and biodiversity.
	ACTION 4.3.2 Encourage ASLA members to incorporate the UN Sustainable Development Goals into their work and their organizations.
	ACTION 4.3.3 Continue to engage international landscape architecture organizations.
	ACTION 4.3.4 Lead discourse among a wide range of environmental, social, and business entities on climate and biodiversity solutions and communications.
	ACTION 4.3.5 Join or form coalitions with industry partners, allied organizations, and climate and biodiversity experts.
	ACTION 4.3.6 Work with specification writing and management systems to support climate and biodiversity positive design in standard specifications.
	ACTION 4.3.7 Work with LAAB and CLARB on educational and professional standards for equitable climate mitigation, adaptation, and biodiversity.
	ACTION 4.3.8 Grow ASLA's Dream BIG with Design and other K-12 awareness programs to create the next generation of landscape architects.

OBJECTIVES	ACTIONS
OBJECTIVE 4.4 Advocate for climate and biodiversity action in local, state, and federal policy, plans, programs, and projects.	**ACTION 4.4.1** Foster relationships with key climate and biodiversity policy officials at federal, state, and local levels.
	ACTION 4.4.2 Lobby for new and updated policies, regulations, and ordinances at the federal, state, and local levels that support climate mitigation, resilience and biodiversity.
	ACTION 4.4.3 Leverage the Climate and Biodiversity Action Network to expand local advocacy networks into effective state and regional grassroots efforts.
	ACTION 4.4.4 Develop a program to help place landscape architects in public service and elected office.

GOAL 1
CLIMATE

Scale up climate positive approaches for mitigation and resilience.

At this 22-acre residence in Minnesota, landscape architects at Coen+Partners used reclaimed ash wood to craft boardwalks through a wetland. Image Credit: ASLA 2020 Professional Residential Design Honor Award. Lake Marion Residence: Connecting Art and Ecology. Woodland, Minnesota. Coen+Partners / Peter Kerze

INTRODUCTION

In 2015, nearly 200 countries signed the Paris Agreement to "pursue efforts to limit the global temperature increase to 1.5° Celsius (2.7° Fahrenheit) above pre-industrial levels to avoid the most severe impacts of climate change." But over the past six years, global temperatures have increased by 1.4°C (2.5°F) and in 2024, global temperatures averaged more than 1.5°C above pre-industrial levels for the first time. It is clear that actions must be immediately intensified to both *mitigate* greenhouse gas emissions and *adapt* the built environment to reduce risk from climate impacts such as extreme heat, flooding and severe storms.

Climate mitigation refers to the urgent challenge of *slowing climate change* by reducing the emission of new greenhouse gases (GHGs) into the atmosphere, while simultaneously increasing the potential for carbon sinks or sequestration. The goal of climate mitigation is to stabilize greenhouse gas (GHG) levels and remain below key thresholds for global warming.

Climate adaptation refers to the ability to *adapt to life in a changing climate* by responding to current and projected climate conditions. These strategies moderate or avoid harm or exploit beneficial opportunities. Many climate adaptation strategies employed by landscape architects are nature-based solutions.

Climate resilience refers to the ability to reduce risk and increase the capacity of communities to withstand both climate shocks and ongoing stressors. Both climate mitigation and climate adaptation strategies work toward this overarching goal.

Landscape architects are in a strong position to address both climate mitigation and adaptation to achieve resilience in our projects and the communities in which we practice. Our work — at the scales of planning and site design — can deliver resilient, climate positive landscapes while also generating a range of economic and other co-benefits.

A climate positive design outcome fundamentally means achieving a net gain in carbon sequestration over a project's life cycle, offsetting emissions from construction materials, construction activities, maintenance, and site operations. In addition to environmental and cultural gains — such as increased sequestration, equity, and resilience — climate positive landscapes can yield significant economic benefits. These include minimized damage from extreme weather events, reduced long-term maintenance costs, and improved health and well-being that reduces healthcare costs.

As the professional organization for landscape architecture, ASLA is:

- Conveying the urgency of this challenge to its members
- Providing clear guidance for a unified path toward a low-carbon, resilient future
- Advocating for better practices, products, and policies

The diverse membership of ASLA — students to professionals, firms large to small, members from every region — is an opportunity to offer universal guidance. Leveraging our collective strength begins with a clear understanding of the goals and a consistent method for tracking progress and success.

The actions supporting this climate goal are organized among four objectives for ASLA and ASLA Chapters:

- Promote awareness of the climate crisis
- Provide guidance, resources, and tools to ASLA members
- Make connections with allied professions and organizations
- Advocate for better practices, policies and products

OBJECTIVE 1.1

Promote awareness of the importance of climate mitigation and adaptation in the practice of landscape architecture.

ASLA will help landscape architects understand the urgency of the climate crisis by framing mitigation and adaptation goals within broader project considerations. We will collect and publish data on economic, equity, and health benefits. ASLA and chapters can also incentivize ASLA members to engage in climate positive design and resilience work on all of their projects through awards, publicity, and other measures.

ACTION 1.1.1

Develop practice-centered communications and education campaigns that promote a deeper awareness of landscape architects' role addressing the climate crisis. Improve and maintain the ASLA website and newsletters with climate crisis news and links to curated resources for addressing the climate crisis with climate positive and resilient design. Frame climate mitigation and adaptation goals within broader health, equity, community, and economic goals. Communicate the co-benefits of mitigation and adaptation strategies through case studies and communications, along with the climate risks to business operations and projected futures from inaction. (CL, CM, CG, DE, ECO, EC, HQ, INS, INV, LA, NGO, PL, RE, UNI)

ACTION 1.1.2

Collect and publish data on the economic, equity, and health benefits of climate positive design and nature-based solutions. Develop a handbook based on the data to assist ASLA members in making the case for climate positive design and nature-based solutions to clients and decision makers. Using a triple bottom line approach, landscape architects can help clients and decision makers understand how this approach directly contributes to other client and project goals. (CHP, CG, CL, CM, CN, COE, DE, ECO, EC, ENV, HQ, INS, INV, LCA, LA, PRO, RE, SM, TKB, UNI)

ACTION 1.1.3

Conduct market research to determine new markets for landscape architecture services related to climate mitigation and resilience. Work with third-party analysts who specialize in tracking market trends and opportunities. (DE, EC, GOV, HQ, INV, LA, RE, UNI)

ACTION 1.1.4

Leverage ASLA's own commitment to achieve zero emissions in all of its business operations by 2040 to advocate to and educate the profession. Increase investments in organization-wide emission reduction plans to realize reductions in the carbon footprint of 50-65% by 2030 and zero emissions by 2040. Commit to continuous learning, emissions reporting, and knowledge sharing with ASLA members and events planning organizations in order to further advance best practices to reduce carbon emissions in business operations. Report data and results at ASLA conferences and share with other organizations. (HQ, LA)

ACTION 1.1.5

Launch a climate and biodiversity positive design commitment program to support landscape architecture organizations' and product manufacturers' efforts to measure the climate and biodiversity benefits and impacts of their projects. A commitment program will increase transparency and accountability among the profession and build our credibility with allied professions that have commitment programs. This program will provide opportunities for firms, manufacturers, and suppliers to demonstrate their dedication to climate and biodiversity action. It will increase industry-wide data collection within a clear set of parameters and standards. (AR, CE, HQ, LCA, LA, MFR, HO, NGO, SUP)

ACTION 1.1.6

Develop a climate award category for the ASLA Professional and Student Awards. Criteria for the award would align with the commitment program as well as the goals and objectives of the Climate & Biodiversity Action Plan for

ASLA Members. Require performance data to be included in awards submissions. Include a climate and biodiversity award in state and regional ASLA awards. (CHP, HQ, LA)

Landscape architects at LPA Design Studios designed the Heron K-8 school campus in Sacramento, California to reduce water use and be drought tolerant. The design also preserves mature trees and includes native plants and a mix of low-carbon materials. Image Credit: Heron K-8 Schoolyard. Sacramento, California. LPA Design Studios / Costea Photography

ACTION 1.1.7

Recognize progress on climate and biodiversity positive design at national and state ASLA conferences and events. Give recognition to professionals who share progress on specific projects or within firms, industry allies that provide transparent information about their projects, and academic practitioners and students who engage in the work. Amplify recognition via social media, ASLA.org, in *Landscape Architecture Magazine*, and other communications to ASLA members. (HQ, LA, MFR, HO, SUP, UNI)

OBJECTIVE 1.2

Provide resources to inform, guide, and support ASLA members' efforts in climate positive design and resilience.

Reducing GHG emissions by 50-65% by 2030, achieving zero emissions by 2040, and doubling sequestration from business as usual requires greater metric-based tracking to quantify emissions and sequestration. ASLA will guide the collective action of its members towards meeting the goal

BASELINES, BENCHMARKS, AND BUSINESS AS USUAL

What does it mean to reduce greenhouse gas (GHG) emissions and increase carbon sequestration from business as usual? How is the starting point — or baseline — defined?

Within the field of landscape architecture, there is no universal answer to this question. While allied professions, such as architecture, have sufficiently robust data on greenhouse gas emissions to determine industry baselines for business as usual, this is a new territory for landscape architects.

The following are a range of approaches that can be used to establish a business-as-usual baseline to compare projects:

Project Specific Baselines: Within the Pathfinder tool, users can create a Baseline Design to establish their own business-as-usual version of their project. Throughout the design process, users would then compare their Primary Design Alternative against the baseline to track Climate Positive Design changes.

Case Study Project Baselines: Rather than create a business-as-usual version of a new project, there may be opportunities to develop a baseline from similar existing case study projects instead. Landscape architects should select projects that are similar in location, program, and percentage planted to ensure an accurate comparison.

Firmwide Baselines: For firms that are establishing climate and biodiversity action plans with dedicated expectations for tracking emissions reduction, it may be beneficial to establish firmwide business as usual baselines (see Action 1.4.4). This requires conducting a benchmarking process to calculate the impact of a broader range of projects.

Industrywide Baselines: As more firms and practitioners are tracking and sharing emissions data, landscape architecture will be able to establish industry wide baselines of its own. This targeted data collection effort is discussed further in this volume of the plan, and it is the next critical step for collectively measuring progress toward climate positive design.

of scaling up climate positive approaches. To achieve this goal, a common approach and tangible metrics for tracking progress are required.

ASLA can look to its peers in the Architecture, Engineering, and Construction (AEC) industry for best practices and lessons learned from other efforts to track performance and progress toward established climate goals. The ECHO project, which includes ASLA and Climate Positive Design, has developed normalization and reporting standards that increase alignment among a range of commitment programs.

The creation of a commitment program, which will provide a tracking and data management framework, will require dedicated research and funding and volunteer work from the landscape architecture community. This effort will rely on strategic partnerships between ASLA and the nonprofit and private sectors. Additional resources are likely necessary to expand capacity.

The continued expansion of educational resources for ASLA members is also needed to move the profession towards measuring the benefits and impacts of landscape architecture projects.

ASLA will continue to support member-led committees tasked with generating content that advance climate mitigation and adaptation work in practice. This content includes guides, toolkits, webinars, and more. These resources will respond to evolving topics in the climate action field. Building on work done to date by ASLA and others, future efforts to inform ASLA members will align with goals and actions in this plan.

At a national level, ASLA plays an important role in the curation and distribution of resources, while engagement at the chapter level can expand the audience and highlight regional perspectives. ASLA and ASLA chapters will continue to partner with organizations that provide educational resources for landscape architects on topics ranging from carbon assessment to calculating economic and other co-benefits. This collaboration could include development of tools, guidance and resources, and support for future growth and updates.

ACTION 1.2.1

Develop standard methods for organizations to track GHG emissions on their projects. These methods could be adapted from others in the AEC industry and should be informed by tools such as Pathfinder, Carbon Conscience, and the Athena Pavement Tool. Clear life cycle assessment (LCA) guidance should be established to ensure that all firms are using a consistent LCA method for measuring project emissions. Clarity on items to measure is critical for establishing industry baselines and enabling accurate data comparisons. Guidance should follow typical life cycle stages to facilitate coordination with suppliers and other design partners. (AR, HQ, LCA, LA, MFR, HO, PRO, SUP)

ACTION 1.2.2

Develop landscape architecture industry baselines for embodied carbon emissions, operational carbon emissions, and carbon sequestration. Facilitate embodied and operational carbon data collection from landscape architecture projects to inform progress toward the development of industry baselines and climate goals. Develop a searchable database of data reporting from projects that links to the LAF Landscape Performance Series database. This will help other landscape architects refer to industry standards, set goals, and measure their own progress. Datasets should be managed to facilitate comparison based on a number of factors, including project location, client type, program/type, and ratio of hardscape to softscape. (CHP, HQ, LCA, LA, MFR, HO, PRO, RE, SUP)

ACTION 1.2.3

Promote use of emissions measurement tools, including carbon calculators, such as Pathfinder and Carbon Conscience, and environmental product declarations (EPDs). Provide recommendations and training resources for the tools best suited to different project types and phases. (AR, HQ, LCA, LA, MFR, HO, PUB, RE, SUP)

ACTION 1.2.4

Pursue and fund research on carbon emission and sequestration impacts that are not captured in typical project or product LCAs. Examples include measuring emissions from soil disturbance for excavation of natural resources, carbon sequestration losses from tree clearing, or reductions of transportation-related emissions in community planning projects. (AR, CE, CL, CG, COE, DE, ECO, EC, ENV, GOV, HQ, LA, NGO, PL, PRO, PUB, RE, UNI)

ACTION 1.2.5

Develop and promote metrics for measuring climate resilience strategies. Create standard reporting metrics for nature-based design strategies, such as green infrastructure, heat island mitigation, fire-safe design, and design for sea level rise. This could include data collection methods for resilience strategies employed on a project or community-wide efforts. (CE, ECO, GOV, HQ, LA, PL, PRO, RE, SM, UNI)

ACTION 1.2.6

Coordinate climate mitigation and adaptation efforts within ASLA by aligning goals, resources, and outcomes. Build on existing strengths of the Climate & Biodiversity Action Network (CBAN) and the Climate & Biodiversity Action Committee (CBAC) for a coordinated roll out of the updated Climate & Biodiversity Action Plan and resources to support its implementation. Update ASLA.org to organize a growing library of resources. The website could include definitions of standard terms for use in publications and webinars. (CHP, HQ)

ACTION 1.2.7

Curate and prioritize climate mitigation and adaptation strategies in ASLA national,regional, and chapter conference education sessions. Offer sessions dedicated to the plan and deliver continued professional development specific to the climate crisis, applied design strategies, metric tracking, client communication, and more. (ECO, EC, HQ, INS, INV, LCA, LA, PL, RE, UNI)

ACTION 1.2.8

Continue to develop toolkits, guides, and professional education webinars specific to climate mitigation. Some topics to address are:

- Planning and design to support renewable energy
- Low-carbon materials and specifications
- Strategies for local sourcing and advocating for supplier transparency
- Carbon storage in bio-based materials
- Carbon sequestration of vegetation
- Understanding, protecting, and creating organic carbon in soils
- Evaluating and using carbon offsets

(ECO, HQ, LCA, LA, MFR, HO, PL, RE, SUP, UNI)

ACTION 1.2.9

Provide guidance on tools and techniques for measuring carbon emissions and sequestration impacts. This guidance could be published in toolkits, guides, and professional education webinars. Some topics to address are:

- Life cycle assessment (LCA) stages and boundaries
- Use of environmental product declarations (EPDs)
- Industry baselines and benchmarking
- Carbon assessment tools
- Workflow strategies for quantity takeoffs

(HQ, LCA, LA, MFR, HO, PRO, SUP)

ACTION 1.2.10

Develop toolkits, guides, and professional education webinars specific to climate adaptation. Some topics to address are:

- Reducing urban heat islands and designing cool zones
- Reducing potable water use and managing drought conditions
- Designing for wildfire prone landscapes
- Designing for sea level rise and flooding
- Amplifying local leadership in climate impacted communities

(CE, COE, ECO, ENV, HQ, INS, LA, MFR, HO, NGO, PL, RE, SUP, TKB, UNI)

ACTION 1.2.11

Form regional working groups to share information about specific climate shocks and stressors in the region. ASLA chapters in a region can collaborate to provide toolkits, guides, and webinars for regional climate mitigation and resilience. (CHP, CG, GOV, HQ, INS, LA, NGO, PL, TKB)

ACTION 1.2.12

Develop toolkits, guides, and professional education webinars for organizations and firms to create their own climate and biodiversity action plans. This guidance should apply to a full range of firm types and sizes, with actions that can be phased or adopted depending on capacity. These

Turenscape and Arsomsilp transformed a former tobacco processing plant, a completely concrete landscape, into a biodiverse "green sponge" with constructed wetlands that purify two million gallons of water each day. Image credit: ASLA 2024 Professional General Design Honor Award. Benjakitti Forest Park: Transforming a Brown Field into an Urban Nature. Bangkok, Bangkok, Thailand. Turenscape + Arsomsilp / Turenscape + Arsomsilp

resources should refer to other relevant existing guides, and could be augmented with round table discussions in which firm leaders can share their direct experience with the process. Topics to address are:

- Developing specific climate mitigation and resilience goals, objectives, and actions
- Establishing business-as-usual baselines and targets
- Measuring progress toward goals
- Enhancing communication of this work
- Expanding designer education

(AR, HQ, LA)

OBJECTIVE 1.3

Facilitate collaboration with allied professions and other organizations to support climate positive design and nature-based solutions

Addressing the climate crisis requires a multi-disciplinary effort. ASLA will increase partnerships with allied fields, such as architecture, engineering, ecological restoration, and planning. ASLA and ASLA chapters will facilitate collaboration and advocate for the benefits landscape architects can provide.

The science around climate mitigation and resilience is rapidly evolving, and landscape architects rely upon the insights of researchers and academia to inform our practice. In addition to curating relevant information from existing studies, ASLA can facilitate new research into topics that will support landscape architects.

Strengthening connections and convening interdisciplinary exchanges will increase landscape architects' role in addressing climate mitigation and adaptation. Now is the time for our industry to hold a seat at the table and advocate for the ways in which climate and biodiversity positive design can add value to projects. ASLA can use data obtained from measuring climate and biodiversity positive design to promote opportunities for collaboration with peers in other fields.

ACTION 1.3.1

Strengthen partnerships with allied professions and organizations engaging in climate and biodiversity positive design, nature-based solutions, low-carbon community

design, sustainable transportation, and social and climate justice. Promote tools, resources and standards from these programs to landscape architects. Collaborate with allied organizations to evolve these products. (AR, CE, CG, CN, COE, ENV, GE, GOV, HQ, NGO, PL, PRO, RE, SE, TE, TKB, UNI)

ACTION 1.3.2

Engage with existing standards and certification programs to enhance and expand credits related to climate positive design. Promote these programs, standards, and tools to landscape architects. Collaborate with allied organizations to evolve these products. (AR, CE, CL, HQ, LCA, LA, NGO, PRO)

Programs to engage include:

- The Sustainable Sites Initiative (SITES)
- Climate Positive Design
- LEED Building Design and Construction
- LEED for Neighborhood Development
- The Living Building Challenge
- The Living Community Challenge
- Envision
- Waterfront Edge Design Guidelines (WEDG)

(AR, CE, ECO, EC, GOV, HQ, RE, TKB, UNI)

ACTION 1.3.3

Work with the Landscape Architecture Foundation (LAF) to expand criteria for measuring embodied carbon and sequestration in their Case Study Investigation projects. This data collection can contribute to industry baseline research by ASLA (Action 1.2.2). (HQ, LCA, LA, MFR, HO, NGO, PRO, RE, SM, TKB, UNI)

ACTION 1.3.4

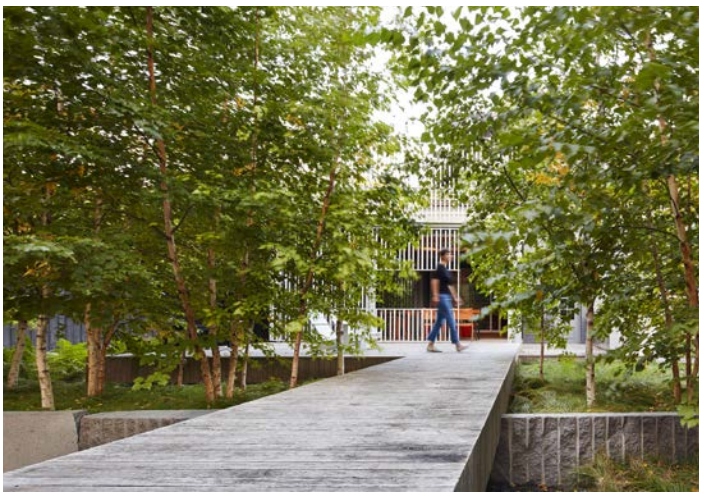
Develop and maintain a searchable database of ASLA members who are climate mitigation or climate resilience experts. Organize the database by region and expertise for use by ASLA members, allied professionals, and the media. Include landscape architecture educators engaged in climate action research. (CHP, CM, ECO, EC, HQ, INS, INV, LCA, LA, MFR, HO, NGO, RE, SUP, TKB, UNI)

ACTION 1.3.5

Expand investment in peer-reviewed, funded research on climate mitigation and resilience topics through the ASLA Fund. Leverage the resources of the ASLA Fund, the charitable foundation of ASLA, to support landscape architecture practice through research and innovation. Topics could include:

- Emissions, sequestration, and storage for landscape construction materials
- Regulated carbon offset markets
- Climate equity in design and planning
- Migration caused by climate change
- Resilience strategies for climate impacts such as drought, sea level rise, and different types of flooding
- Economic and business case for climate mitigation and resilience strategies
- Sustainable transportation, including pedestrian and bicycle networks, electric vehicle charging stations, and public transit systems
- Measurement of nature-based solutions

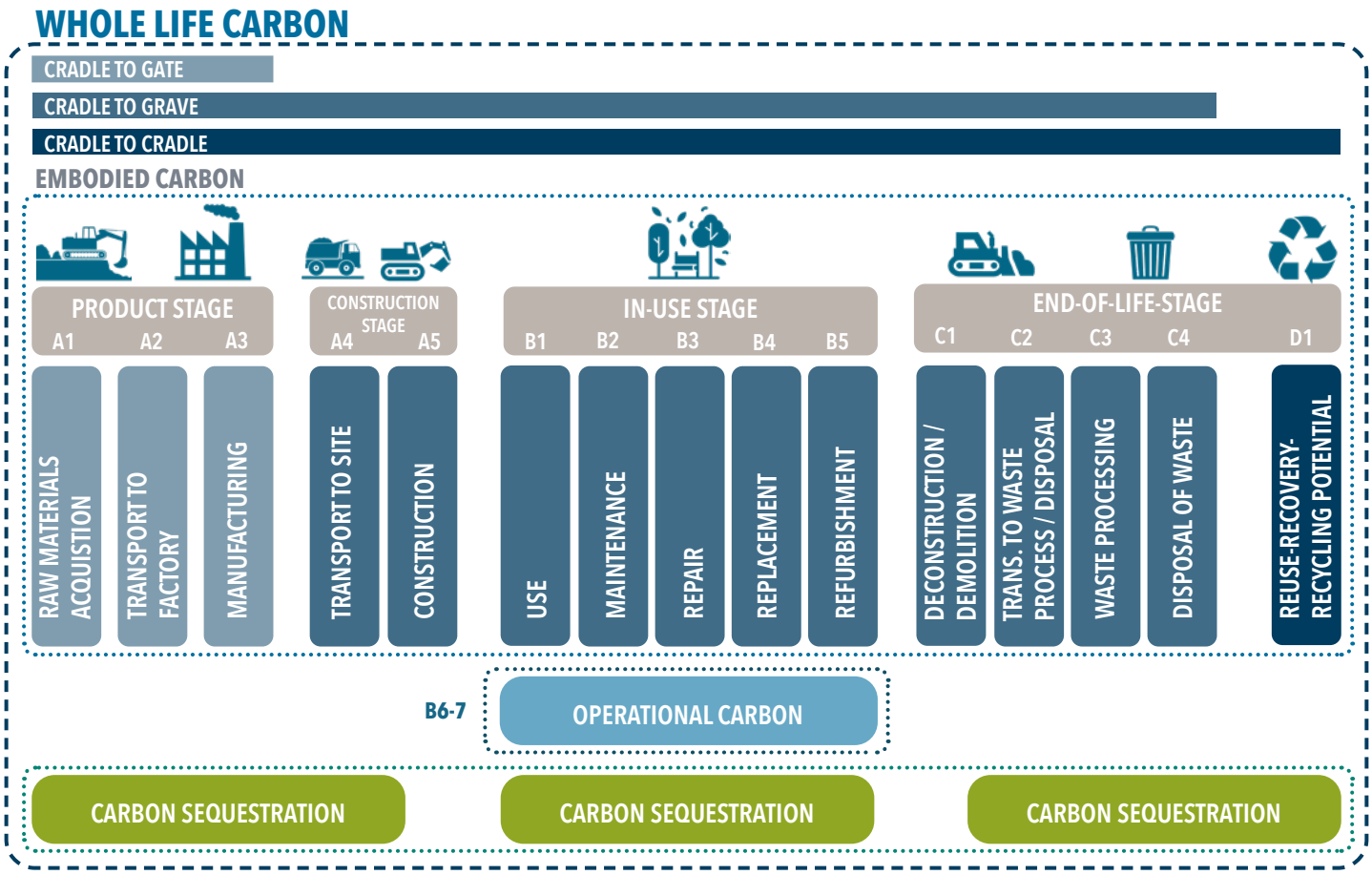
(ECO, EC, HQ, INS, LA, MFR, HO, RE, SUP, TKB, UNI)



Landscape architects at TEN x TEN used Midwestern Black Locust – a sustainable local hardwood and excellent alternative to tropical hardwood – to craft decking for this residence in Minneapolis. Image Credit: ASLA 2021 Professional Residential Design Honor Award. Quarry Garden. Minneapolis, Minnesota. TEN x TEN / Gaffer Photography

OBJECTIVE 1.4

Engage product manufacturers, suppliers, vendors, and nurseries to support climate mitigation and resilience.



Life cycle assessment (LCA) stages as defined by ISO 14040 and 14044. The typical LCA covers stages A1-A3, Cradle to Gate, although a more comprehensive LCA will examine impacts for all stages. Image credit: Meg Calkins

Climate mitigation and resilience efforts require careful measurement, monitoring, and management to ensure successful outcomes. Carbon assessments, a relatively new measurement technique in landscape architecture, requires a clear and consistent process for measuring impacts. Established benchmarks are not widely available for most materials and products used by landscape architects. Tracking embodied carbon and sharing the data is the best way to inform our understanding of business as usual and carbon reduction progress.

Similarly, for resilience efforts, there is a need for tracking quantifiable performance impacts of nature-based solutions. Monitoring can provide insights into the most successful strategies and offer lessons for future projects. As the climate changes, our practices must evolve to meet the changing needs of our communities.

Monitoring sites will ensure the function of mitigation and adaptation strategies and may reveal the need for adaptive management techniques as landscapes grow and change. Maintenance and management plans can ensure performance, and sharing monitoring data in publicly accessible forums will support low-carbon and resilient practices.

ACTION 1.4.1

Advocate for lower embodied carbon products with manufacturers, suppliers, vendors, and nurseries. Organize webinars and meetings to foster dialogue between landscape architects and manufacturers and suppliers. Encourage them to:

- Align with and support ASLA's decarbonization goal of 50-65% emission reductions by 2030 and zero emissions by 2040.
- Provide third party verified, transparent information about their products and practices.
- Optimize their production practices for decarbonization.

(HO, HQ, LA, LCA, MFR, HO, SUP)

ACTION 1.4.2

Provide a toolkit to manufacturers, suppliers, vendors, and nurseries setting expectations for third party verified data and reductions in the climate and biodiversity impacts of materials and products. (HO, HQ, LA, LCA, MFR, HO, SUP). Encourage cradle to cradle life-cycle assessments (LCAs) and publication of Environmental Product Declarations (EPDs). Spotlight manufacturers with EPDs or other third-party certified products on the ASLA website, and in publications and communications. Feature companies in the ASLA Expo directory, on ASLA.org and in *Landscape Architecture Magazine*. As comparing products becomes easier and industry baselines are developed, featured manufacturers should go beyond the creation of EPDs to demonstrate the environmental preferability of their product.

ACTION 1.4.3

Coordinate with existing EPD databases to increase listings and improve the search interface for products specific to landscape architecture projects. As EPDs are increasingly offered by landscape manufacturers and suppliers, it is important for these to be easily accessible. Existing EPD databases include (HO, HQ, LA, LCA, MFR, HO, SUP):

- Embodied Carbon in Construction Calculator (EC3)
- EPD International
- Sustainable Minds Transparency Catalog
- Spot UL Environment

GOAL 2
BIODIVERSITY

Protect, conserve, enhance, restore, and manage for biodiversity. Support the goals of protecting 30% of existing ecosystems and restoring 30% of degraded ecosystems by 2030, with a goal of protecting and enhancing biodiversity on each project.

At Corktown Commons in Toronto, Michael Valkenburgh Associates designed marsh,, woodland, meadow, and aquatic plants to "vigorously interact" and bring natural systems back to a former brownfield site. Image Credit: ASLA 2016 Professional General Design Honor Award. Corktown Common: Flood Protection and a Neighborhood Park, Toronto, Ontario, Canada. Michael Van Valkenburgh Associates / Nicola Betts

INTRODUCTION

Global biodiversity decline has escalated to a crisis point – with 73 percent of wildlife lost by 2024 and one third of all land plants threatened with extinction. In North America, a 60 percent decline in wildlife occurred in just over a generation. This loss of biodiversity creates serious economic and environmental impacts that affect public and environmental health. Most critically, it reduces the planet's ability to fight climate change.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimates that biodiversity loss has resulted in global economic loss of $25 trillion USD annually — a quarter of global GDP. Our lives are dependent on the world's biodiversity — from our access to food and medicines to the health and stability of our communities.

Landscape architects are already fostering biodiversity on some projects, but every project can be an opportunity to protect, conserve, restore, enhance and manage biodiversity. They have a unique skill set to work across a variety of scales, facilitating connections between communities and nature. They interpret a wide swath of data and information, allowing for coordination and integration of knowledge from scientists as well as cultural and community-based knowledge bearers.

The Global Biodiversity Framework lists 23 action-oriented global targets, many of which are directly relevant to the work that landscape architects do in design, planning, collaboration, community engagement, and policy.

ASLA and ASLA chapters will engage in the following objectives and actions to support practitioners as they work to meet biodiversity goals in the Climate & Biodiversity Plan for ASLA Members. National and Chapter leaders provide the underpinnings for the practice — from lobbying to data-sharing to curating the broad network of knowledge-holders and suppliers who are part of supporting successful biodiversity positive planning and design. Through our collective efforts as a profession, we can affect real change and protect, conserve, enhance, and restore biodiversity.

Biodiversity goals supported by science-based design approaches will be positioned as a professional standard. ASLA will integrate this into communications, resources, collaboration, and advocacy. ASLA chapters will further expand the reach of this work through support of state advocacy efforts, regional information resources, and connections to local knowledge bearers, researchers, and scientists.

Actions supporting the biodiversity goal are organized among four objectives:

- Promote awareness of the importance of biodiversity in the practice of landscape architecture.
- Provide resources to inform, guide, and support ASLA members' efforts in biodiversity positive design to meet the global 30x30 global biodiversity goal.
- Facilitate relationships with scientists, ecologists, allied professions and organizations to support biodiversity positive planning and design.
- Engage product manufacturers, suppliers, vendors, and nurseries to support biodiversity positive design and regenerative practices.

"The biosphere, upon which humanity as a whole depends, is being altered to an unparalleled degree across all spatial scales... Nature can be conserved, restored, and used sustainably while other global societal goals are simultaneously met through urgent and concerted efforts fostering transformative change."

— The Kunming-Montreal Global Biodiversity Framework, Convention on Biological Diversity (2022)

Landscape architects with Nelson Byrd Woltz designed the Duke University Water Reclamation Pond in Durham, North Carolina to include over 40 herbaceous native plant species. The new habitat supports numerous species of birds, insects, fish, and mammals, including this blue heron. Image Credit: ASLA 2021 Professional General Design Honor Award. Duke University Water Reclamation Pond. Durham, North Carolina. Nelson Byrd Woltz Landscape Architects / Mark Hough

OBJECTIVE 2.1

Promote awareness of the importance of biodiversity in the practice of landscape architecture.

ASLA will help landscape architects understand the urgency of the biodiversity crisis and their role in addressing it in all planning and design projects. ASLA will continue to collect and publish data on the cascading benefits of enhancing biodiversity and provide resources to landscape architects to communicate with clients and decision makers about those benefits. ASLA and ASLA chapters will also incentivize ASLA members to engage in biodiversity positive design work on all of their projects through awards, recognition, and communications campaigns.

ACTION 2.1.1

Develop communications and education campaigns that promote landscape architects' role in addressing biodiversity in design and planning. Position biodiversity as a core value and professional responsibility within the profession. Information and data will help landscape architects better advocate for the tools and resources they need to engage in biodiversity positive design. Communicate success stories and challenges of biodiversity-positive design

THE KUNMING-MONTREAL BIODIVERSITY FRAMEWORK TARGETS

These targets are directly applicable to the practice of landscape architecture and will be supported by ASLA and ASLA chapters.

TARGET 1: Plan and Manage all Areas to Reduce Biodiversity Loss

TARGET 2: Restore 30% of all Degraded Ecosystems

TARGET 3: Conserve 30% of Land, Waters and Seas

TARGET 4: Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts

TARGET 5: Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species

TARGET 6: Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact

TARGET 7: Reduce Pollution to Levels That Are Not Harmful to Biodiversity

TARGET 8: Minimize the Impacts of Climate Change on Biodiversity and Build Resilience

TARGET 9: Manage Wild Species Sustainably To Benefit People

TARGET 10: Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry

TARGET 11: Restore, Maintain and Enhance Nature's Contributions to People

TARGET 12: Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity

TARGET 13: Increase the Sharing of Benefits From Genetic Resources, Digital Sequence Information and Traditional Knowledge

TARGET 14: Integrate Biodiversity in Decision-Making at Every Level

on ASLA.org, in *Landscape Architecture Magazine*, and other communication venues to ASLA members (LA, HQ, CHP, STU).

ACTION 2.1.2

Improve and maintain the ASLA website with biodiversity news and links to curated resources for addressing the biodiversity crisis. Frame biodiversity goals within broader health, equity, community, and economic goals. Communicate the co-benefits of biodiversity strategies along with future risks from inaction.

ACTION 2.1.3

Collect and publish data on the economic, equity, and health benefits of long-term resilience in landscapes and the key role of biodiversity. Outline the benefits of biodiversity positive design and science-based ecological restoration approaches to promote biodiversity. Develop resources based on the data to assist ASLA members in making the case for biodiversity positive design to clients and decision makers.

ACTION 2.1.4

Expand the presence of biodiversity positive design approaches in ASLA national, regional, and chapter conferences and communications. Highlight professionals who share progress on specific projects or within firms, industry allies who provide transparent information about their plants or soil products, and academic practitioners and students who engage in the work. Share on social media, ASLA.org, *Landscape Architecture Magazine* (LAM), and in other communications to ASLA members.

ACTION 2.1.5

Develop a toolkit for speaking with clients, project teams, and community partners to aid in prioritizing conservation and biodiversity in design and planning. Using a holistic systems-based approach, landscape architects can help clients and decision makers understand how this directly contributes to client, project, and community goals.

THE KUNMING-MONTREAL BIODIVERSITY FRAMEWORK TARGETS (CONTINUED)

TARGET 15: Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts

TARGET 16: Enable Sustainable Consumption Choices to Reduce Waste and Overconsumption

TARGET 17: Strengthen Biosafety and Distribute the Benefits of Biotechnology

TARGET 18: Reduce Harmful Incentives by at Least $500 Billion per Year, and Scale Up Positive Incentives for Biodiversity

TARGET 19: Mobilize $200 Billion per Year for Biodiversity From all Sources, Including $30 Billion Through International Finance

TARGET 20: Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity

TARGET 21: Ensure That Knowledge Is Available and Accessible to Guide Biodiversity Action

TARGET 22: Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all

ACTION 2.1.6

Develop an award for biodiversity in the design and planning categories of the ASLA Professional and Student Awards. Criteria for the award would align with the commitment program as well as the goals and objectives of the Climate Action & Biodiversity Plan for ASLA Members. Require performance data to be included in awards submissions. Include a climate and biodiversity award in state and regional ASLA awards. (CHP, HQ, LA)

OBJECTIVE 2.2

Create curated and centralized resources to inform, guide, and support ASLA members' efforts in biodiversity positive design.

ASLA will guide the collective action of its members towards meeting the goal of protecting, conserving, enhancing, and restoring biodiversity. Even when biodiversity is not explicitly required as a goal, landscape architects can view each site as a potential response to the biodiversity crisis. With a minimum of 10% net increase in biodiversity as the goal, almost all projects can find a way to be part of the global solution.

Resources for biodiversity positive design, including guides, toolkits, webinars, and other communications, will align with the objectives and actions in the Climate & Biodiversity Action Plan for ASLA Members.

ASLA will promote design for a combination of ecosystem biodiversity, taxonomic biodiversity, and functional biodiversity. Working in collaboration with ASLA chapters, scientists, and local experts, ASLA will help define regional priorities. ASLA will partner with other organizations that provide educational resources for landscape architects on topics such as biodiversity, native plants, and ecosystem services.

ACTION 2.2.1

Develop toolkits, guides, and professional education webinars specific to biodiversity issues, landscape ecology, ecosystem services, and biodiversity positive design. Support ongoing efforts by the ASLA Climate & Biodiversity Action Committee Subcommittee on Biodiversity to expand available resources for practitioners and chapters. Update ASLA.org to organize a library of resources including definitions of standard terms for use in publications and webinars. Some topics to address are:

- Current information on the biodiversity crisis and its causes related to landscape architecture and the built environment.
- Applying principles of landscape ecology in landscape architecture projects.
- Using native plants and native plant communities in urban and suburban environments.
- Techniques for collaborating with scientists, researchers and local communities.
- Techniques for Adaptive Management.

ACTION 2.2.2

Expose landscape architects to international standards for biodiversity and build understanding of their design applications. This action will support the goal of protecting and enhancing biodiversity in support of net positive biodiversity impacts on all projects by interpreting international standards, providing information on their application in landscape architecture, and creating a central repository of approaches to planning and design that prioritize biodiversity. Standards, techniques, performance indicators, and information can be found in the ASLA Biodiversity Primer and other detailed resources being developed by the ASLA Biodiversity Subcommittee. While these goals and standards can be used in many landscape architecture projects, practitioners may not be aware of them or understand how to support them. Selected global standards for biodiversity are:

- Kunming-Montreal Biodiversity Framework Targets-30x30 global Convention for Biodiversity (CBD) goal
- UN Sustainable Development Goals (SDG) associated with biodiversity
- UN Decade for Ecosystem Restoration
- Society for Ecological Restoration Standards

ACTION 2.2.3

Identify, evaluate, and share a range of methods for measuring and monitoring the biodiversity impact of projects. Because each project and location is unique, methods for measuring and monitoring biodiversity performance must be developed in response to ecological context. ASLA will disseminate information on the wide range of techniques for measuring biodiversity and ecosystem dynamics so landscape architects can establish baselines and measure performance specific to a site's unique conditions. Aggregate and adapt a range of key performance indicators and develop recommendations for different types of biodiversity monitoring and measurement protocols, based on input from the ecosystem sciences fields that are accessible to landscape architects. Regularly report out the professions' success in meeting relevant targets set forth in the Kunming Montreal Framework.

ACTION 2.2.4

Connect ASLA members to peer-reviewed research and knowledge on biodiversity, landscape ecology, and ecosystem services relevant to their design and planning work. Create bioregional/watershed resource lists to engage local expertise and data on regional and site ecology and ecosystem services. Access to the scientific underpinnings of best practices in biodiversity positive design will lessen the burden on individual practitioners to source this information. Organize this information, both peer-reviewed and cultural, in a searchable database. Explore access pathways if the research is in peer-reviewed journals behind paywalls. Encourage landscape architecture educators and allied organizations to increase their research on ecosystem services, landscape ecology, biodiversity, functional ecology, and ecological restoration. (HQ, CHP, LA, STU, NGO, UNI, RE, ECO, TKB)

ACTION 2.2.5

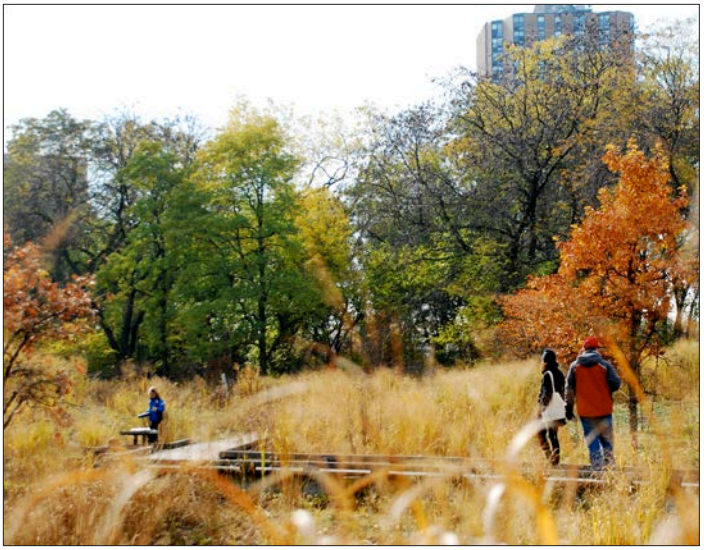
Promote collaboration between landscape architecture programs and the sciences at colleges and universities. ASLA can ensure that practitioners are prepared to embed landscape ecology, ecosystem services and biodiversity in design through enhanced educational offerings and engagement. (STU, NGO, UNI, RE, ECO)

ACTION 2.2.6

Curate and prioritize biodiversity positive design, regenerative and restorative landscapes in ASLA national, regional, and chapter conference education sessions. Offer sessions dedicated to biodiversity for ASLA members and deliver continued professional development on biodiversity positive design, restoration of biodiversity, and designing for ecosystem services.

ACTION 2.2.7

Form regional working groups to share information about regional biodiversity issues and strategies to support biodiversity positive design. ASLA chapters in a region can collaborate to provide toolkits, guides, and webinars for regional biodiversity positive design strategies and issues. (HQ, CHP, LA, STU, NGO, UNI, RE, ECO, TKB)



Burnham Nature Sanctuary in Chicago provides habitat for a variety of wildlife and a resting place for migratory birds along this major flyway. Confluence consulted Ornithologists and birders during the design of this project. Image Credit: Confluence

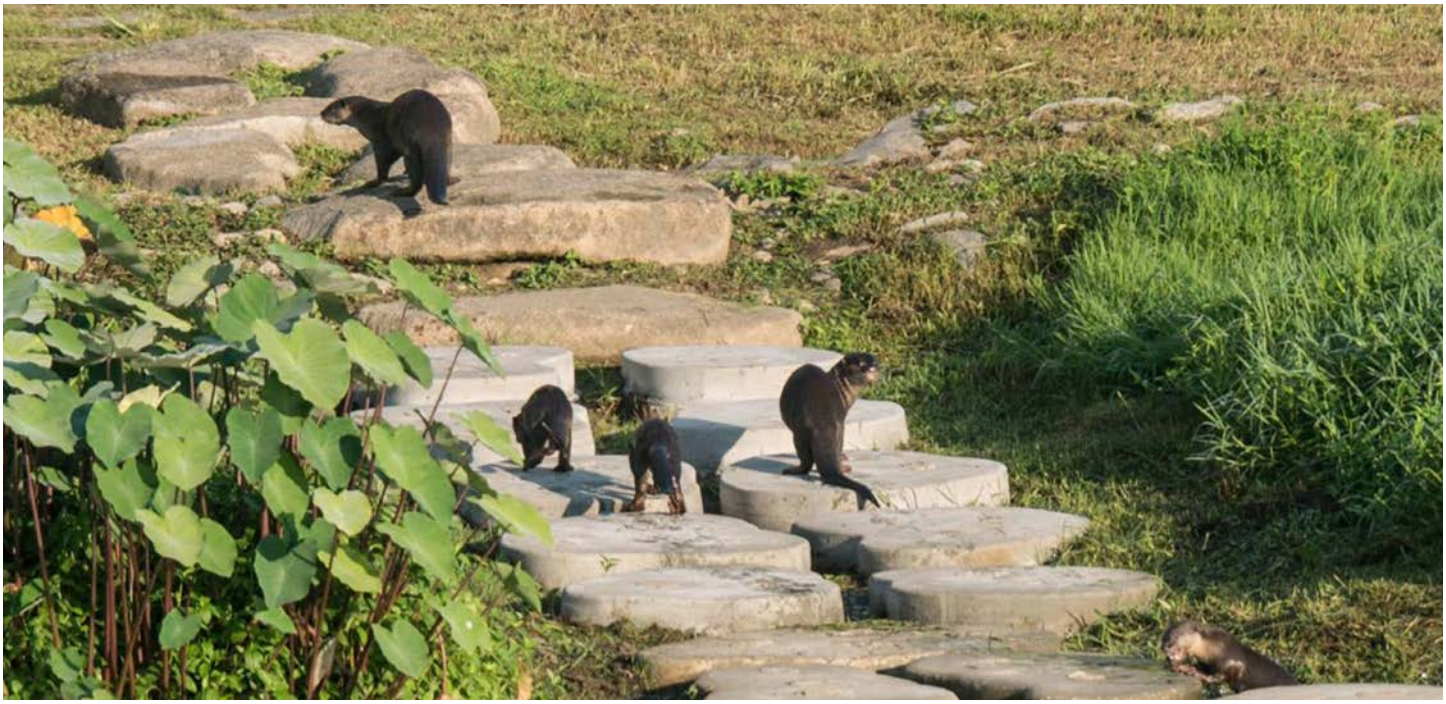
ACTION 2.2.8

Promote credentialing and certification programs in landscape ecology and ecosystem services. The Ecological Society of America's Professional Ecologist Certification is one example certification. Identify others as they become available. (HQ, CHP, LA, NGO, UNI, STU, ECO)

OBJECTIVE 2.3

Facilitate a broad network of practice through relationships with allied professions and organizations to support biodiversity positive design and planning

Engagement and collaboration with experts from ecology, conservation biology, traditional knowledge holders, and local community members will lead to stronger biodiversity outcomes. Facilitate these relationships and collaborations through dialogue and a formalized network of collaboration. Articulate the benefits landscape architects can provide in biodiversity work. (HQ, CHP, CE, AR, PL, NGO, GOV, ECO, RES, UNI, SUP)



Landscape architects with Ramboll Studio Dreiseitl took out the concrete, restoring a river in Bishan, Singapore. One result has been the return of otters, which captured international media attention. Image credit: ASLA 2016 Professional General Design Honor Award. Bishan-Ang Mo Kio Park, Bishan, Singapore. Ramboll Studio Dreiseitl / Max Khoo

ACTION 2.3.1

Increase ASLA's profile and strengthen partnerships with allied professions and organizations to promote the role of landscape architects in addressing the biodiversity crisis. Allied professions include architecture, engineering, planning, restoration ecology, conservation biology, and others. Communicate landscape architecture success stories and challenges of biodiversity-positive design in architecture, engineering, and planning publications. Present case studies, projects, and research that highlight biodiversity-positive design and the goals of the landscape architecture profession at allied professions' conferences. Promote tools, resources, research, and standards from these professions and organizations to landscape architects. Increase the profile of the landscape architecture profession within allied fields working to address the biodiversity crisis. Organizations to strengthen relationships with include: (HQ, CHP, LA, TKB, CM, CE, AR, PL, ECO, RE, UNI, STU, NGO)

- Society for Ecological Restoration
- Society for Conservation Biology
- Ecological Society of America
- International Union for the Conservation of Nature
- North American Native Plant Society

ACTION 2.3.2

Facilitate collaboration with scientists and researchers on biodiversity. Develop training and toolkits to improve collaboration between landscape architects and scientists engaging in research about biodiversity, landscape ecology, and ecosystem services. Promote landscape architects' role in addressing the biodiversity crisis in peer-reviewed scientific publications. Create space for dialogue with the scientific community to foster a shared land and ecosystem ethic. (HQ, CHP, LA, STU, NGO, UNI, GOV, RE, ECO, TKB)

ACTION 2.3.3

Curate spaces for dialogue within the agriculture, aquaculture, fisheries, and forestry industries to expand the description of integrated nature-based solutions, balancing food security and conservation priorities. The design process is richer and more robust when it is inclusive of all voices. Cultivate spaces for landscape architects to contribute to dialogue on the economics of functional designed landscapes. (HQ, CHP, LA, STU, NGO, UNI, GOV, RE, ECO, TKB)

ACTION 2.3.4

Advocate for biodiversity positive policies, regulations, planning and development best practices to local, state, national, and global policymakers. Inform or help develop policies, regulations, planning and development best practices that promote biodiversity positive design and the role of landscape architects. (HQ, CHP, LA, STU, NGO, UNI, GOV, RE, ECO, TKB)

ACTION 2.3.5

Collaborate with landscape architecture organizations to develop resources, monitoring protocols, and data on net biodiversity positive design strategies for ecosystem types. Monitoring protocols and data collected can contribute to industry baseline research and be published in peer reviewed outlets. (HQ, LCA, LA, MFR, HO, NGO, PRO, RE, SM, TKB, UNI) Organizations include:

- Landscape Architecture Foundation (LAF)
- Canadian Society of Landscape Architects (CSLA)
- International Federal of Landscape Architects (IFLA)
- Australian Institute of Landscape Architects (AILA)
- New Zealand Institute of Landscape Architects (NZILA)

ACTION 2.3.6

Develop and maintain a searchable database of landscape ecologists, restoration ecologists, conservation biologists, and other experts. Organize the database by region and specific expertise. Include academics in the database. (HQ, CHP, LA, TKB, CM, CE, AR, PL, ECO, RE, UNI, STU, NGO)

OBJECTIVE 2.4

Engage product manufacturers, suppliers, vendors, and nurseries to support biodiversity positive design.

Materials, plants, soils and other products used for landscapes can impact biodiversity both on and distinct from project sites, making product manufacturers, suppliers, vendors, and nurseries important industry partners. Their practices determine our achievement of biodiversity goals and biodiversity positive design.

ASLA will work with industry partners to communicate biodiversity goals and advocate for optimized production practices. They will encourage partners to provide transparent, third party verified-information about their materials and products and advocate for the elimination of invasive species from the nursery trade.

ACTION 2.4.1

Advocate for industry shifts that promote native plants, optimized growing practices, and safer chemicals. Engage with nursery associations, nurseries, and allied plant supply professionals to address industry risks to biodiversity up and down the supply chain. Encourage alignment with biodiversity goals. Advocate for the elimination of the sale of invasive species. Promote the use of integrated pest management in lieu of chemical pesticides and herbicides. ASLA chapters will expand the reach of this work through state and regional advocacy efforts and professional development opportunities that promote awareness. (HQ, CHP, HO, LA, CL, NGO, SUP, CN, GOV, UNI, RE, ECO)

Coordinate with organizations including:

- The American Nursery and Landscape Association
- The American Public Gardens Association
- The Garden Club of America
- The National Association of Invasive Plant Councils
- The Xerces Society for Invertebrate Conservation
- The Perennial Plant Association
- State Nurserymen and Growers Associations
- Regional exotic and pest plant councils

ACTION 2.4.2

Develop and distribute a toolkit to nurseries and suppliers about biodiversity goals, safer chemicals, and provision of information about the biodiversity impacts of their plant materials and products. Encourage cradle to cradle life cycle assessments (LCAs) and publication of third party-verified Environmental Product Declarations (EPDs). Spotlight manufacturers with EPDs or other third party-certified products in ASLA publications and communications. Feature companies in the ASLA Expo directory, on ASLA.org, and in *Landscape Architecture Magazine*. As comparing products becomes common and industry baselines are developed, featured manufacturers should go beyond the creation of EPDs to demonstrate the environmental preferability of their products. (HQ, CHP, LA, HO, CL, NGO, SUP, CN, GOV, UNI, RE, ECO)

ACTION 2.4.3

Increase connections between ecologists, local native plant societies, and nurseries to aid in plant selection and plant propagation. These connections can support the sale of plant species that contribute to biodiversity, availability of regional natives, and healthy plant communities. They can also eliminate invasive species in the nursery industry. (HQ, CHP, LA, HO, CL, NGO, SUP, CN, GOV, UNI, RE, ECO)

ACTION 2.4.4

Encourage development and disclosure of practices and policies that reduce the impacts of products and materials on biodiversity. Inspire and motivate industry partners throughout the supply chain to address the negative upstream and downstream impacts to biodiversity from sourcing to construction to waste disposal. (HQ, CHP, LA, CL, HO, MFG, NGO, SUP, CN, GOV, UNI, RE, ECO)

GOAL 3
EQUITY

Amplify the power of plural and diverse communities and people to achieve equitable climate and biodiversity positive design.

Partnering with the eight communities of Caño Martín Peña District in Puerto Rico, landscape architects at OLIN created a Comprehensive Infrastructure Master Plan that "incorporates nature-based strategies and climate change risk analysis...while safeguarding communities' deep social bonds." The plan is rooted in a social and environmental justice framework. Image Credit: ASLA / IFLA 2021 Global Impact Award. Caño Martín Peña Comprehensive Infrastructure Master Plan. San Juan, Puerto Rico. OLIN

The benefits of environmental action must be distributed fairly among all communities. Therefore, equity is a key consideration in climate and biodiversity positive design. Marginalized groups such as Indigenous people, immigrants, and people living on lower incomes have historically experienced — and continue to experience — the most harm from pollution and climate change. At the same time, they are frequently excluded from taking part in decisions that affect them and getting the resources they need.

Equitable climate and biodiversity positive design addresses these problems by:

- Supporting local priorities and community leaders
- Recognizing power inherent in communities
- Acknowledging the work a community may already have underway
- Working to address past inequities

Landscape architects must understand deeper issues like environmental racism, land dispossession, and historical disinvestment that still shape our built environment today.

ASLA and ASLA chapters will advance equitable design and development by:

- Equipping practitioners with resources and techniques
- Building partnerships with aligned organizations and communities
- Advocating for policies and practices that support equitable development
- Putting equity at the center of ASLA communications, programs, and publications

OBJECTIVE 3.1

Provide resources to support ASLA members' work in equitable climate and biodiversity positive design.

Develop toolkits, guides, and webinars for design and planning that honors and integrates the environmental knowledge and lived experiences of Indigenous peoples, immigrants, and marginalized communities. Emphasize cultural literacy, participatory engagement, community self-determination, and environmental justice. Establish equity-focused metrics and continuing education opportunities.

ACTION 3.1.1

Provide training and resources for ASLA members and educators focused on community self-determination, understanding reparations, justice and privilege, empowerment techniques, and cultural literacy training. Emphasize that everyone has a piece of the truth and can teach and learn something. (HQ, CHP, LA, NN, RE, TKB, UNI)

ACTION 3.1.2

Develop a toolkit and webinars for ASLA members about learning from, recognizing, and valuing the environmental knowledge and lived experience of Indigenous cultures, immigrants, and other marginalized communities. Communicate techniques to respect peoples' traditions, religions, cultures, work, and abilities. Focus on methods to support the power that is exercised independently and directly by marginalized and indigenous communities to address climate change and biodiversity loss. Encourage chapters to develop regionally specific resources. (HQ, CHP, LA, NN, RE, TKB, UNI)

Landscape architects with Field Operations designed Tongva Park and Ken Genser Square in Santa Monica, California to include a universally-accessible restroom near the entrance of the park, providing access to all visitors, including unhoused people in the community. Image Credit: ASLA 2018 Professional Residential Design Honor Award. Tongva Park and Ken Genser Square. Santa Monica, California. James Corner Field Operations LLC / Tim Street Porter

ACTION 3.1.3

Develop a guide on how to identify and address past climate inequities and community environmental history through listening sessions with community members, civic leaders, and gatekeepers. Emphasize that everyone has a piece of the truth and can teach and learn something. Encourage chapters to develop regionally specific guides. (HQ, CHP, LA, NN, RE, TKB, UNI)

ACTION 3.1.4

Provide training for both ASLA members and community leaders about techniques of participatory outreach and engagement that support equity for climate and biodiversity positive design. Emphasize the need to create safe and inclusive environments for all participants. ASLA chapters will serve as liaisons with community leaders. (HQ, CHP, LA, NN, RE, TKB, UNI, CG, CM)

ACTION 3.1.5

Develop a continuing education series that expands cultural awareness of Indigenous nations and traditional knowledge, historic and ongoing stewardship practices, and landscape projects on unceded lands and traditional territories. Emphasize the need to create safe and inclusive environments for all participants. Encourage chapters to develop regionally specific continuing education events. (HQ, CHP, LA, NN, RE, TKB, UNI)

ACTION 3.1.6

Develop equity measures and metrics that can be applied when executing all goals of the Climate & Biodiversity Action Plan for ASLA Members. Use the ASLA Racial Equity Plan, and collaborate with the Black Landscape Architects' Network (BlackLAN), the Indigenous Collective Group (ICG), American Indian Council of Architects and Engineers (AICAE), Indigenous Society of Architecture, Planning & Design, and other organizations for guidance in their development. (HQ, CHP, LA, NN, RE, TKB, UNI)

OBJECTIVE 3.2

Build partnerships and facilitate collaboration with allied professions, communities, and organizations to support equity in climate and biodiversity positive design.

Build strong relationships with social and climate justice organizations and raise awareness among allied professionals and policymakers about equity issues in climate mitigation, resilience, and biodiversity. Create accessible tools and resources tailored for community use, particularly for marginalized groups and decision-makers. (HQ, CHP, LA, AR, CE, CN, ECO, EC, ENV, GE, MFR, HO, SUP, TE, HO)

ACTION 3.2.1

Provide tools and resources for communities to address climate and biodiversity equity. Work with ASLA members, chapters, and community advocates to make sure there is online access for those who need it, including community leaders, marginalized groups, and decision makers. Empower chapters to serve as liaisons with community leaders. (HQ, CHP, LA, CG, CM, NN, RE, TKB, UNI)

ACTION 3.2.2

Build relationships with social justice and climate justice organizations. Develop resources for landscape architects to build relationships with community-based organizations. Create a series of webinars with the organizations focused on strategies for equitable climate and biodiversity positive design. (HQ, CHP, LA, NN, RE, TKB, UNI)

ACTION 3.2.3

Develop a communications campaign targeted to allied professionals, policymakers, and organizations about equity issues in climate mitigation, climate adaptation, and biodiversity positive design. Make the case for the urgent need to address these issues and inspire action. Highlight the work of landscape architects and encourage collaboration across disciplines. Encourage chapters to serve as liaisons with local community groups and policymakers. (HQ, CHP, LA, AR, CE, CN, ECO, EC, ENV, GE, MFR, HO, SUP, TE, HO)

ACTION 3.2.4

Identify and understand environmental injustices and take intentional steps towards environmental justice in collaboration with allied professionals, community groups, and policymakers. Empower chapters to serve as liaisons with local community groups and policy makers. (HQ, CHP, LA, AR, CE, CN, ECO, EC, ENV, GE, HO, MFR, NN, SUP, TE, TKB)

OBJECTIVE 3.3

Advocate for equity and equitable practices in climate and biodiversity positive design.

Collaborate with state and local officials, planners, developers, and community advocates to promote equitable development. Advocate for reconciliation plans that restore Indigenous communities' relationships with their lands.

ACTION 3.3.1

Work with state and local officials, planners, developers, and community advocates to advance equitable development as part of climate and biodiversity action goals. Empower chapters to serve as liaisons. (HQ, CHP, LA, CG, DE, EC, GOV, PL, NGO)

ACTION 3.3.2

Advocate for equitable distribution of projects and assets with municipal decision makers, community groups, and policy makers. Work toward a web of interconnected impactful projects that start with the communities in the greatest need. (HQ, CHP, LA, CG, DE, EC, GOV, PL)

ACTION 3.3.3

Advocate for the development of reconciliation plans for communities that have been separated from their territories and their roles of caring for the land. Plans will focus on both climate change and biodiversity loss. Provide ASLA members with information on the land back movement and Indigenous taxes and other measures. Work with the Indigenous Collective Group to develop that information. (HQ, CHP, LA, CG, DE, EC, GOV, PL, NGO, NN, TKB)

Cloud Song, an 8-acre development in Arizona's Sonoran desert, is the only public community college on Indigenous land. Colwell Shelor Landscape Architecture partnered with the Onk Akimel O'odham (Pima) and Xalychidom Piipaash (Maricopa) tribal communities to design social and educational spaces among an Indigenous plant palette and rain gardens. Image Credit: ASLA 2023 Professional General Design Honor Award. Cloud Song: SCC Business School + Indigenous Culture Center. Scottsdale, Arizona. Colwell Shelor Landscape Architecture / Marion Brenner

ACTION 3.3.4

Advocate for equitable practices along the construction material and product supply chain. Inspire and motivate industry partners throughout the supply chain to address inequitable and unethical labor conditions from sourcing raw materials to manufacturing to construction. (HQ, CHP, LA, MFG, HO, SUP, CN, UNI, NGO)

OBJECTIVE 3.4

Place equity at the center of all ASLA resources, events, and communications.

Embed equity within all guides, toolkits, webinars and publications. Communications should place equity issues front and center, broadening the membership's understanding of community engagement, cultural literacy, community self-determination, reparations, justice, and privilege.

ACTION 3.4.1

Learn from, collaborate with, and support underserved communities in alignment with the ASLA Racial Equity Plan of Action. Review and update on a regular basis. Chapters will serve as liaisons with local communities. (HQ, CHP, LA, CG, CM, NN, PL, PUB, TKB)

ACTION 3.4.2

Develop an inclusive Youth Climate Leadership Program and invite high school students that live in host cities to attend ASLA national, regional, and chapter conferences. Involve students from underrepresented groups. Guide students at the conference. Visit students chosen for the program at their high schools before they attend the conference. Support local chapters in coordinating these activities. (HQ, CHP, LA)

ACTION 3.4.3

Expand the program that invites local climate action, biodiversity action, and environmental and climate justice organizations and community groups to attend ASLA national, regional, and chapter conferences. Provide guidance to the attendees during events. Local chapters will coordinate these activities. (HQ, CHP, LA, CG, CM, NN, PL, PUB, TKB)

ACTION 3.4.4

Prioritize cultural inclusion and commemoration using inclusive, participatory processes and engaging community knowledge. Respect peoples' traditions, religions, and cultures. Respect the work and abilities of others; and remember that everyone has a piece of the truth. Acknowledge that everyone can teach and learn something; and create safe and inclusive environments for all participants. (HQ, CHP, LA, CG, CM, NN, PL, PUB, TKB)

ACTION 3.4.5

Prioritize equity in all objectives of the Climate & Biodiversity Action Plan for ASLA and ASLA Chapters. Review all objectives and actions in the plan and identify opportunities for incorporating equity into actions. (HQ, CHP, LA)

GOAL 4
ADVOCACY

Establish landscape architects as leaders in climate and biodiversity positive design.
Build strong partnerships and advocate for equitable climate and biodiversity positive design.

Tom Lee Park in Memphis, Tennessee was designed by SCAPE Landscape Architecture and Studio Gang to be an inclusive, accessible park that educates the public and K-12 students about the many climate and biodiversity benefits of landscape architecture. The park is now part of the local school district's curriculum and visited by every 3rd and 9th grader in the city. Image Creit: ASLA 2024 Professional General Design Honor Award. Tom Lee Park: "Come to the River." Memphis, Tennessee. SCAPE Landscape Architecture, Studio Gang / Brad Howe

Landscape architects are leading the planning and design of climate and biodiversity solutions around the world, but our work is not always noticed. ASLA and ASLA chapters will continue to leverage relationships with other organizations, the media, policy makers, and allied professionals to raise awareness about the expertise and contributions of landscape architects. By showing how climate and biodiversity positive design can reduce emissions, sequester carbon, boost resilience, and increase biodiversity, we can help more people understand the value of this work.

More public awareness can lead to greater connections with a wider audience and key decision makers. This will help landscape architects move into stronger leadership roles where they can influence major decisions. ASLA and its members should be seen as trusted experts who are called on by local, state, and national leaders to give advice on climate change, equity, and biodiversity.

ASLA will continue to take part in global efforts, such as the UN Climate Change Conference (UNFCCC), the UN Convention on Biodiversity (CBD), and the International Federation of Landscape Architects (IFLA). ASLA already aligns with the UN Sustainable Development Goals and IFLA's Climate Action Commitment and should keep building international partnerships. As one of the largest groups of landscape architects in the world, ASLA has the power to lead the way in climate and biodiversity action — and inspire others to do the same.

OBJECTIVE 4.1

Communicate landscape architects' leadership role in addressing the climate and biodiversity crises.

ASLA and ASLA chapters will continue to highlight the important role landscape architects play in these crises, both internally to ASLA members and externally to the public. Internal communications will be focused on education, with the aim of equipping members with the tools and information necessary to lead climate and biodiversity projects. Communications externally will leverage lessons learned from the FrameWorks Institute Report of how to bridge the gap between the public's knowledge of landscape architecture and what we do. These communications strategies will expand our reach and strengthen our message.

ACTION 4.1.1

Develop a communications strategy to disseminate climate and biodiversity positive design success stories to the public and allied professions. These communications should demonstrate climate mitigation, resilience, and biodiversity as core values and professional responsibilities within the landscape architecture profession. Chapters can foster awareness and support by telling stories of the places in our communities that the public knows and loves. (HQ, CHP, MED)

ACTION 4.1.2

Create a climate and biodiversity communications toolkit for ASLA chapters to elevate their communications locally and regionally. Create social media training and tips for chapters to develop and share climate and biodiversity content. Support chapters through communications templates, article writing assistance, and press release support. (HQ, CHP)

ACTION 4.1.3

Amplify the voices of ASLA members engaging in climate positive and biodiversity positive design through media placement and communications. Track annual media mentions of landscape architecture, climate change, and biodiversity and report on performance. (HQ, CHP, MED)

ACTION 4.1.4

Continue the ASLA Climate & Biodiversity Fellowship Program. This program can develop climate and biodiversity positive design thought leaders. It can also support work on the actions in this plan. (HQ)

ACTION 4.1.5

Promote a broader advocacy role for landscape architects in the climate and biodiversity crises. Engage with researchers, professional organizations, and policymakers through communications, article placement, and published research. (HQ, CHP, MED, RE, UNI, PRO)

ACTION 4.1.6

Grow ASLA's social media and video content about climate mitigation, adaptation, and biodiversity work. Engage members, influencers, and the public with this content. (HQ, CHP, LA)

The Chicago riverwalk had narrow paths, limited vendors, and no direct engagement with the Chicago River. Landscape architects with Sasaki reimagined the riverbank as a destination, with flood-resilient promenades that connect to the water and increase space for amenities. The design revitalized recreation and economic activity along the river, doubling the number of vendors, increasing profits by 164 percent and generating nearly $50 million in revenue in 2018. Image Credit: ASLA 2018 Professional General Design Honor Award. Chicago Riverwalk | State Street to Franklin Street.Chicago, Illinois. Sasaki and Ross Barney Architects / Copyright Christian Phillips Photography

OBJECTIVE 4.2

Make the performance and business case for climate and biodiversity positive design.

Demonstrating how climate and biodiversity projects improve the bottom line adds validity to the work of landscape architects. ASLA will support members by equipping them with the resources and data to show clients the economic and performance benefits of climate and biodiversity positive design, facilitating a shift away from traditional development practices.

Landscape architects need access to credible research and tools on a range of economic benefits of landscape architecture projects — from increasing return on investment, to reducing risk, and lowering operational costs. They can use this research to communicate the value of their work to clients, communities, the insurance industry, and policy makers. ASLA will continue to publicize existing resources and invest in the development of new studies.

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ACTION 4.2.1

Advance an economic research plan to support climate and biodiversity positive design. Work with economic research professionals to engage in research on the economic benefits of climate mitigation, climate adaptation, and biodiversity. Continue to partner with environmental economists, economic and market analysts, and economic valuation firms to develop new data and research for quantifying the economic benefits of nature-based solutions. Facilitate the development of new research agendas focused on economic benefits for landscape architecture educators. (HQ, CHP, UNI, RE, INS, EC, INV, DE)

ACTION 4.2.2

Advance a dialogue with the insurance industry to promote landscape architecture's role in risk reduction. Encourage collaboration among property insurers, insurance experts, landscape architects and educators on developing data and research on the risk reduction benefits of nature-based solutions. Encourage ASLA chapters to engage in regional insurance industry dialogues. (HQ, INS)

ACTION 4.2.3

Create a wiki of climate and biodiversity research, strategies, and other resources for members. Make existing research, guides, articles, case studies and other resources more searchable and readily available and provide links or

access to third-party resources. Enable the ASLA Climate & Biodiversity Action Committee, ASLA chapters, and other member leaders to submit resources and manage updates. (LA, HQ, CHP)

ACTION 4.2.4

Expand the role of the Climate & Biodiversity Action Network to support regional practices in climate and biodiversity positive design. Identify regional issues and generate regionally-specific resources to address them. Together with chapters, engage in local advocacy addressing climate and biodiversity issues. (LA, HQ, CHP)

OBJECTIVE 4.3

Build strong partnerships and support global frameworks.

Addressing the urgent challenges of climate change and biodiversity loss requires strong collaboration — we cannot succeed alone. Building and maintaining strategic partnerships is essential, both within the United States and around the world.

ASLA will deepen its existing relationships with organizations such as IFLA, the United Nations, and Canadian Society of Landscape Architects (CSLA) through sustained engagement and shared initiatives. At the same time, we will seek opportunities to connect with new partners, domestically and internationally. Aligning our efforts with global frameworks — such as the United Nations Sustainable Development Goals — will enhance the impact and visibility of our work.

ASLA will continue to work with our partner organizations like the Landscape Architecture Foundation (LAF), Council of Educators in Landscape Architecture (CELA), and the Council of Landscape Architectural Registration Boards (CLARB) to facilitate equitable climate and biodiversity positive design. Strengthening relationships with allied professions and climatefocused organizations will also help amplify our collective impact. Our success will be measured by the extent to which ASLA and its members are recognized as credible, collaborative leaders in climate mitigation, climate resilience, and biodiversity.

ACTION 4.3.1

Expand ASLA's engagement with global forums related to climate and biodiversity. Forums include the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Framework Convention on Biological Diversity (UNCBD), International Union for the Conservation of Nature (IUCN), The World Economic Forum, World Bank, and others. To advance engagement on climate issues at a global level, expand the ASLA observer delegation at the UNFCCC. To increase engagement on biodiversity issues at a global level, become an official observer of the UNCBD and join IUCN as a member organization. Sign on to global commitments for climate and biodiversity work that align with ASLA public policies. (HQ, CHP)

ACTION 4.3.2

Encourage ASLA members to incorporate the UN Sustainable Development Goals into their work and their organizations. Provide resources for members to incorporate the goals into projects, practices, and business plans. (LA, HQ, CHP)

ACTION 4.3.3

Continue to engage international landscape architecture organizations. Support IFLA, CSLA, Australian Institute of Landscape Architects (AILA), and others in their work on global climate and biodiversity leadership. Encourage ASLA members to participate in international events from these organizations. (LA, HQ, CHP)

ACTION 4.3.4

Lead discourse among a wide range of environmental, social, and business entities on climate and biodiversity solutions and communications. Collaborate with climate leaders outside of the field of landscape architecture to develop common goals and share resources. Develop outreach materials to assist in common messages. Grow awareness among other climate and biodiversity businesses and organizations of the role landscape architects can play in addressing climate change and biodiversity loss. (LA, HQ, CHP, PRO, MFR, HO, NGO, AR, CE, RE, UNI, CG, ECO, EC, SE, TE)

ACTION 4.3.5

Join or form coalitions with industry partners, allied organizations, and climate and biodiversity experts. Create unified messages, share resources, and work toward common interests. To find opportunities, strengthen relationships with allied professions implementing climate and biodiversity actions. Undertake regular reviews of their priorities and initiatives to find areas of common interest. (LA, HQ, CHP, PRO, MFR, HO, AR, CE, SE, TE)

ACTION 4.3.6

Work with specification writing and management systems to support climate and biodiversity positive design in standard specifications. Advocate with MasterSpec, Speclink, and other organizations providing standard specifications for language that supports equitable climate mitigation, resilience, and biodiversity. Work to remove harmful products and practices from standard specifications. (HQ, SUP)

ACTION 4.3.7

Work with LAAB and CLARB on educational and professional standards for equitable climate mitigation, adaptation, and biodiversity. Address the climate and biodiversity crises as components of Health, Safety and Welfare. Consult with university programs and CELA on this work. (LA, HQ, CHP, UNI, PRO)

Topics to address are:

- Climate mitigation and adaptation
- Biodiversity strategies, ecology, ecosystems, and traditional ecological knowledge
- Equity, cultural literacy, and community engagement
- Advocacy strategies

ACTION 4.3.8

Grow ASLA's Dream BIG with Design and other K-12 awareness programs to create the next generation of landscape architects. Broaden the reach through increased participation in the programs and an increased focus on equitable climate and biodiversity positive design. (HQ, UNI, PRO)

During Advocacy Day, ASLA members prepare for meetings with U.S. Senators on Capitol Hill in Washington, D.C. Image Credit: ASLA

OBJECTIVE 4.4

Advocate for climate and biodiversity action in local, state, and federal policy plans, programs, and projects.

One of the most effective ways to promote climate mitigation, resilience, nature-based solutions and equity is through policy and regulation. ASLA will continue to build relationships and advocate with federal agencies and policymakers to influence current and future legislation that may affect the practice of landscape architecture in these areas. We need to leverage what we know about the social and economic benefits of our work to help promote climate resilience, nature-based solutions, and biodiversity in policymaking.

In order to shape local and state policies, ASLA will empower chapters to build advocacy networks by creating training opportunities and developing advocacy resources and tools. ASLA will strengthen its grassroots networks, such as the ASLA Climate & Biodiversity Action Network, which are capable of working quickly and nimbly for climate and biodiversity positive design.

Active engagement between landscape architects, elected officials, and public agency leaders and staff is crucial to securing a seat at the table as decisions are being made about the built environment, infrastructure, and our

collective response to the climate and biodiversity crises. Through this engagement, we can position ourselves as trusted experts to be called upon to advise, craft, evaluate,and execute climate and biodiversity positive policy.

ACTION 4.4.1

Foster relationships with key climate and biodiversity policymakers at federal, state, and local levels. Identify and contact potential allies in governments that can create opportunities to shape policy at all levels. Support legislative efforts by engaging subject matter experts, research, supporting data, and policy recommendations. Target and engage with landscape architects in government to advocate for change at the policy level and build connections between private and public sector actions. (HQ, CHP, GOV)

ACTION 4.4.2

Lobby for new and updated policies, regulations, and ordinances at the federal, state, and local levels that support climate mitigation, resilience and biodiversity. Monitor state and federal policy trends and anticipate threats to existing policies. Scale up ASLA's iAdvocate communications tool and other advocacy channels to nimbly respond to policy threats or changes. (HQ, CHP, GOV)

Items to lobby for include:

- Embodied carbon limits and standards
- Funding for training in long-term adaptive maintenance and management approaches that tie to economic recovery and jobs
- Resilient nature-based solutions for flooding, sea level rise, extreme heat, and stormwater control
- Sustainable transportation
- Biodiversity protections and land conservation measures
- Equitable access to open space
- Equitable responses to climate change and biodiversity loss

ACTION 4.4.3

Leverage the Climate & Biodiversity Action Network to expand local advocacy networks into effective state and regional grassroots efforts. Advocate for local and state policy to support climate mitigation and resilience and biodiversity. Develop sample policy responses for regional climate-related issues that replace language that has been politicized in some communities (i.e. "climate change" and "sustainability") with language that relays similar concepts. Provide resources and training for ASLA members to advocate on climate and biodiversity-related policy issues.(HQ, CHP)

ACTION 4.4.4

Develop a program to help place landscape architects in public service and elected office. In formal policymaker roles, landscape architects can further promote policies and regulations for climate mitigation and resilience, nature-based solutions, biodiversity, and habitat protection. (HQ, CHP, GOV)

RESOURCES

EMBODIED CARBON

- Decarbonizing Specifications: Guidelines for Landscape Architects, Specifiers, and Contractors
- Decarbonizing the Design Process: A Phase by Phase Approach for Landscape Architects
- Navigating Environmental Product Data: A Guide for Landscape Architects, Specifiers, and Industry Partners
- Towards Zero Emission Business Operations: A Landscape Architect's Guide to Reducing the Climate Impacts of Offices
- Guideline for Project Performance Data Takeoff: Sustainability and Carbon Evaluations in BIM projects and related platforms
- Collaborating with Industry Partners on Climate Action and Biodiversity: A Guide to Conversations Among Landscape Architects, Vendors, and Product Manufacturers
- Climate Positive Design Toolkit (CPD) and Pathfinder
- Designing with a Carbon Conscience V2
- Carbon Leadership Forum (CLF) - The Embodied Carbon Challenge and CLF North American Material Baselines Report
- Embodied Carbon in Construction Calculator (EC3)
- EPD International
- Sustainable Minds Transparency Catalog
- Spot UL Environment
- *Details and Materials for Resilient Sites: A Climate Positive Approach* by Meg Calkins
- Whole Life Carbon, LETI

CARBON SEQUESTRATION AND STORAGE

- Landscape Design for Carbon Sequestration by Deanna Lynn
- *Planting Soils for Landscape Architectural Projects* by Barrett L. Kays
- Climate Positive Design Toolkit (CPD)
- *Planting in a Post-Wild World: Designing Plant Communities for Resilient Landscapes* by Thomas Rainier and Claudia West
- *Principles of Ecological Landscape Design* by Travis Beck
- *The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden* by Rick Barke and Douglas W. Tallamy
- *The Dynamic Landscape: Design, Ecology and Management of Naturalistic Urban Planting* by Nigel Dunnett and James Hitchmough

MULTI ATTRIBUTE CERTIFICATIONS AND ECOLABELS

- Cradle to Cradle
- Nordic Swan Ecolabel
- UL ECOLOGO
- Living Product Challenge
- DECLARE
- Oeko-Tex Standard 100
- TRUE Certified Zero-Waste Facility
- SCS Recycled Content Standard
- USDA Certified BioPreferred
- Forest Stewardship Council (FSC) Certified
- Programme for the Endorsement of Forest Certification (PEFC)
- Rainforest Alliance Certified
- Water Sense
- Energy Star
- Climate Positive Design Challenge

NATURE-BASED SOLUTIONS

- Economic Benefits of Nature Based Solutions by ASLA
- Nature Based Solutions Evidence Platform
- Naturebase
- The Natured Based Solutions Knowledge Database
- The Nature-Based Solutions database
- Network for Engineering with Nature
- Naturance

FIRE SAFE DESIGN

- Playbook for the Pyrocene: Design Strategies for Fire-Prone Communities (SWA)
- Wildland Urban Interface Wildfire Resilience Homeowner Handbook
- California Wildfire Rebuilding Guide
- US Green Building Council California Wildfire Defense- Home Hardening and Defensible Space Toolkit
- Sustainable Defensible Space
- CalFire
- Wildfire Home Hardening Guide, Prepare for Wildfire, CalFire
- Theodore Payne Foundation Wildfire Resource
- Insurance Institute for Business & Home Safety (IBHS) Wildfire Prepared
- ASLA Guide to Resilient Design: Fire

HEAT ISLANDS

- Landscape Architecture Solutions to Extreme Heat by Daniella Hirchfeld and Amy Guenther
- Cool Science, Heat Island Group, Berkeley Lab
- ENVI-met (3D modeling software)
- Thermal Toolkit: Technologies and Techniques for Visualizing Heat by Keenan Gibbons and Salvador Lindquist, ASLA
- Cool Kit. Landscape-Based Solutions to Combat Extreme Heat + Advance Cool Equity by Atlas Lab

STORMWATER CONTROL MEASURES AND REDUCED FLOOD RISK

- Cities and Flooding: A Guide to Integrated Urban Flook Risk Management for the 21st Century
- Urban Street Stormwater Guide
- Environmental Protection Agency (EPA) National Stormwater Calculator
- Federal Emergency Management Agency (FEMA) Flood Map Service Center

WATER CONSERVATION

- What to Plant, EPA Watersense
- California Dept of Water Resources Model Water Efficient Landscape Ordinance (MWELO)
- Water Use Classification of Landscape Species (WUCOLS)
- SelecTree

SEA LEVEL RISE

- FEMA Flood Map Service Center
- Coastal Risk Screening Tool
- Coastal Flood Exposure Mapper, National Oceanic Atmospheric Administration
- Cities and Flooding: A Guide to Integrated Urban Flood Risk Management for the 21st Century
- *Coastal Infrastructure: A Typology for the Next Century of Adaptation to Sea-level Rise* by Kristina Hill
- San Francisco Bay Conservation and Development Commission Resources and Mapping
- *Landscape Architecture for Sea Level Rise, Innovative Global Solutions* by Galen Newman and Zixu Qiao
- *Salty Urbanism: A Design Manual for Sea Level Rise Adaptation in Urban Areas* by Jeffrey Huber with Brooks + Scarpa
- *Adapting Cities to Sea Level Rise: Green and Gray Strategies* by Stefan Al

BIODIVERSITY

- Society of Ecological Restoration (SER) Principles of Ecosystem Restoration.
- UN Convention on Biological Diversity
- UN Convention on Biological Diversity (CBD) Kunming-Montreal Global Biodiversity Framework
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
- Global Assessment Report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
- Assessment of Invasive Alien Species and Control (IPBES)
- UN Environment Program Human Rights and Biodiversity
- Five Key Drivers of the Biodiversity Crisis
- Ecology of Place Petal: Living Building Challenge
- International Federation of Landscape Architects (IFLA) Landscape Architect's Guide to the UN Sustainable Development Goals
- Australian Institute of Landscape Architects (AILA) Biodiversity Positive Design Statement
- The Global Biodiversity Standard: Manual for Assessment and Best Practices
- New Zealand Biodiversity Action Plan – 2016- 2020
- Living Planet Report 2022 – Building a Nature Positive Society
- Guidelines for Biodiversity Monitoring
- Monitoring Biodiversity: Quantification and Interpretation
- US Department of Interior Guidance for Adaptive Management
- The Role of Landscape Architects in Promoting Biodiversity
- Plant Diversity in a Changing World: Status, Trends, and Conservation Needs
- Impacts of Climate Change on the Future of Biodiversity
- Reimagining Infrastructure for a Biodiverse Future
- The Benefits of Environmental Stewardship
- The Landscape Institute's Commitment to Addressing the Climate and Biodiversity Emergencies
- Dark Skies Lighting Recommendations
- Noise Impacts to Resident or Migratory Species
- Best Practices for Water Quality
- How we can go Nature Positive
- Our World in Data: Biodiversity
- Plant diversity in a changing world: Status, trends, and conservation needs
- Biodiversity - our strongest natural defense against climate change
- Impacts of climate change on the future of biodiversity
- Successful Ecological Restoration: A Framework for Planning/Design Professionals
- ASLA Invasive Species Policy Statement

- The St. Louis Declaration on Invasive Plants, Codes of Conduct, and What They Mean to Propagators
- Thomas Crowther — No Economies Without Biodiversity: Why Our Markets Rely on the Complexity of Nature - The Great Simplification
- Strengths and complementarity of systematic conservation planning and Key Biodiversity Area approaches for spatial planning

EQUITY

- "Louisiana's Response to Extreme Weather," *Adapting to a Smaller Climate: Restoration, Protection, and Social Justice in Coastal Louisiana* by Scott A. Hammering, Shirley Laska (editor)
- *Black Flags and Windmills: Hope, Anarchy, and the Common Ground* by Scott Crow
- *Race, Place, and Environmental Justice After Hurricane Katrina: Struggles to Reclaim, Rebuild and Revitalize New Orleans and the Gulf Coast* by Robert D. Bullard and Beverly Wright.
- *Environmental Health and Racial Equity in the United States: Building Environmentally Just, Sustainable, and Livable Communities* by Robert D. Bullard, Glenn S. Johnson, Angel O. Torres. American Public Health Association.
- *The Just City* by Susan S. Fainstein.

ADVOCACY

- UN Sustainable Development Goals (UN SDGs)
- ASLA Guide to Hosting Project Site Tours
- ASLA iAdvocate Network
- ASLA Coalition Building Toolkit
- Find My Legislators
- United Nations Framework Convention on Climate Change
- Reframing Landscape Architecture, FrameWorks Institute

GENERAL LANDSCAPE ARCHITECTURE RESOURCES FOR CLIMATE AND BIODIVERSITY

- ASLA Climate and Biodiversity Action
- Landscape Performance Series Case Study Briefs
- IFLA Climate Action Commitment
- Australian Institute of Landscape Architects Climate Positive Design

CLIMATE GOAL DEFINITIONS

AEC: Architecture, Engineering, and Construction

Albedo: Albedo is a measure of the percentage of sunlight that a surface reflects away. Different elements of the Earth's surface have different albedos. (NASA)

Benchmark: A set of environmental impact results that serve as a reference point from which the relative performance of other landscapes can be evaluated. It is sometimes called a baseline when it is the starting point for a business as usual design.

Biogenic carbon: Biogenic carbon refers to carbon that is derived from or contained in biomass (e.g. plants and trees) (EN 16485:2014). This is in contrast to fossil carbon, which comes from organic matter that has been deposited in the ground and is often emitted from the burning of fossil fuels.

Business as usual: A term used in this plan to describe ordinary practices prior to use of climate or biodiversity positive design strategies. A business as usual scenario can be used as a baseline or benchmark when measuring embodied carbon, carbon sequestration, or biodiversity.

Carbon drawdown: Removing carbon dioxide from the atmosphere, ultimately to the point that global warming starts reversing.

Carbon neutral: Describes an activity that removes as much carbon dioxide (CO_2) from the atmosphere as it emits.

Carbon positive: Describes an activity that sequesters more carbon than it emits.

Carbon sequestration: The process of capturing and storing atmospheric carbon dioxide to mitigate climate change by reducing the amount of greenhouse gases in the atmosphere. This can happen naturally through biological processes, like trees absorbing CO_2, or through engineered geological methods, such as injecting captured CO_2 into concrete.

Climate positive design: Design that reduces emissions and increases sequestration over a project's life span while also providing environmental, cultural, and economic co-benefits such as biodiversity, equity, and resilience.

Design for disassembly: The design of landscapes to facilitate future change and the eventual dismantlement (in part or whole) for recovery of systems, components, and materials.

Deconstruction: The systematic dismantling of a landscape, typically in the opposite order it was constructed, to maximize the salvage of materials for reuse, in preference over salvaging materials for recycling, energy recovery, or sending the materials to the landfill.

Embodied carbon emissions: The greenhouse gas (GHG) emissions generated by the manufacturing, transportation, installation, maintenance, and disposal of construction materials used in landscapes, transportation infrastructure, and buildings. The terms "embodied carbon," "embodied carbon emissions," and "embodied emissions" can be used interchangeably.

Environmental product declarations (EPDs): Standardized, third-party-verified documents that report the environmental impacts of a product based on a product life cycle assessment (LCA). EPDs are the best available mechanism for requiring product embodied carbon reporting and transparency.

Emissions scenarios: In the context of the UN Intergovernmental Panel on Climate Change assessments, scenarios are directed at exploring possible future emissions pathways, their main underlying driving forces, and how these might be affected by policy interventions.

Emission Scopes 1, 2, and 3: These terms come from the Greenhouse Gas Protocol, which is the world's most widely-used greenhouse gas accounting standard.

- **Scope 1** emissions come from sources that an organization owns or controls directly – for example, from burning fuel in company vehicles.
- **Scope 2** emissions are those that a company causes indirectly when the energy it purchases and uses is produced. For example, energy purchased to heat and cool offices.
- **Scope 3** emissions are not produced by the company itself, but by those that are indirectly responsible for. Project emissions fall into the Scope 3 category.

Global Warming Levels (GWLs): The global mean surface temperature change, or "global warming level" (GWL), is a "dimension of integration" that is highly relevant across scientific disciplines and socio-economic actors.

Global Warming Potential (GWP): The potential climate change impact of a product or process as measured by an LCA. GWP is reported in units of carbon dioxide equivalent (CO2e) and is the agreed-upon metric for tracking embodied carbon.

Greenhouse gas emissions (GHG): Any gas in the atmosphere emitted by human activity that absorbs and re-emits heat. There are seven GHGs covered by Kyoto Protocol: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF6), and Nitrogen trifluoride (NF3).

Life Cycle Assessment (LCA): A systematic set of procedures for compiling and evaluating the inputs and outputs of materials and energy, and the associated environmental impacts directly attributable to a product or process throughout its life cycle.

Material reuse: Installation of a previously used material or product that requires limited to no processing for reinstallation and use on a different project.

Nature-based solutions: Climate solutions that incorporate the processes and functions of nature.

Net zero emissions: An activity that removes as much greenhouse gases – inclusive to all, such as carbon dioxide, methane, or sulfur dioxide – from the atmosphere as it emits.

Operational Carbon Emissions: In contrast to embodied carbon, operational carbon refers to the greenhouse gas emissions due to building energy consumption. Associated with the life cycle phase B (use stage).

Product category rule (PCR): A set of specific rules, requirements, and guidelines for conducting an LCA and developing EPDs for one or more product categories.

Service life: The duration for which a site effectively serves its intended purpose, meeting the functional needs of users without requiring substantial reconstruction. When performing whole site life cycle assessments, a service life of 60 years is typically assumed although individual structures such as decks and pavements are often planned for 30 years.

Transit-oriented development (TOD): An approach to support creating communities with dense, mixed-use housing and commercial districts adjacent to transit corridors.

Whole Life Carbon: Whole Life Carbon emissions are the sum total of all asset related GHG emissions and removals, both operational and embodied over the life cycle of an asset including its disposal (Modules: A1-A5 Upfront; B1-B7 In Use; C1-C4 End of Life). Overall Whole Life Carbon asset performance includes separately reporting the potential benefit from future energy recovery, reuse, and recycling (Module D).

Wildland-urban interface (WUI): The WUI is the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Zero emissions: An activity that releases no greenhouse gases to the atmosphere. As opposed to net-zero emissions, which allows for offsetting of emitted carbon to reach a balance of zero, the zero emissions approach focuses on the absolute emissions.

BIODIVERSITY GOAL DEFINITIONS

Adaptive management: A structured, cyclical approach to managing biodiversity interventions that explicitly acknowledges uncertainty and incorporates learning from ongoing monitoring and evaluation to inform maintenance and management activities.

Behavioral diversity: Changes or shifts in behaviors due to environmental conditions, amongst species or between species. .

Biomes: Biomes can be differentiated by the organisms residing within and by the climate. Organisms within a biome share adaptations specific to that particular environment.

Bioregions/ecoregions: An ecoregion is a geographically distinct assemblage of ecological communities, which share a majority of their species and ecological dynamics, and have similar environmental conditions critical for their long-term success.

Conservation: Preservation and protection of nature to prevent decay or damage to resources, wildlife or ecosystems.

Ecological characteristics: Composition, structure, function, connectivity, and species composition and diversity that occur within a natural range of variation.

Ecological (ecosystem) integrity: With reference to ecological restoration or enhancement, the similarity of a site to its reference conditions inclusive of composition, structure, and function.

Ecological niches: Ecological niches describe the role an organism plays in a community. A species' niche includes the physical and environmental conditions required for species survival (ie. Temperature, habitat, or terrain) and the interactions it has with other species.

Ecosystems: Ecosystems are the interactions between biota, such as plants and animals, as well as energy and nutrient flows within an environment. Multiple ecosystems may inhabit a single biome.

Emergence: Novel characteristics or patterns in the landscape that can occur due to interactions and self-organizing processes within an ecosystem or community of plants or animals.

Gene flows: A change in the genes of a particular group of plants due to the movement of pollen, seed, or live plants carrying modified DNA sequences (transgenes) between populations with different genetic profiles.

Genetic diversity: Measured by the gene flow across a population that provides genetic diversity within species.

Habitat: A space that provides for all the needs for species survival. For wildlife this includes food conditions that support reproductive success, and shelter. For plants those conditions include appropriate access to light, air, water, nutrients, and soil media.

Populations: Populations are subsets of individuals of one species that occupy a particular geographic locale, having evolved for the specific conditions of that site.

Protection: Prevents damage to an existing natural area, feature, or ecosystem.

Reference ecosystem: Typically a functional intact ecosystem used to establish restoration targets on a site. This involves describing the specific compositional, structural, and functional ecosystem attributes requiring restoration to meet a desired restoration outcome.

Regeneration: Natural renewal or recovery of ecological function following an impact or disturbance event (storm, fire, development, etc.); sometimes spontaneous, sometimes with assistance of land stewards or ecological restoration approaches.

Relative abundance: The number of a specific species in an area relative to other species.

Restoration: The act of aiding a degraded ecosystem to achieve a more natural and functional state, similar to an undisturbed condition.

Species diversity: Both species richness and species evenness.

Species evenness: The relative abundance of each specific species in the ecosystem.

Species richness: The number of distinct species (variety) that characterize an ecosystem.

Taxonomic or phylogenetic diversity: The genetic relationship between different groups of species.

EQUITY GOAL DEFINITIONS

Equity: Ensures fair and just access to public spaces, green spaces, and environmental resources. Equity offers protection from environmental hazards for all people, regardless of their socio-economic, racial, cultural or gender identity. It involves addressing systemic inequalities in the distribution of environmental benefits and burdens.

Equality: Focuses on providing the same level of benefits and addressing the same level of burdens for everyone.

Distributive justice: Addresses the distribution of projects, resources, services, and opportunities in addressing climate and biodiversity issues, and recognizes the social, economic, and environmental diversity and complexity in impacted communities.

Procedural justice: Addresses who is in control and leading the process and ensures community participation is substantial and real.

Contextual justice: Addresses the social impact of climate and biodiversity projects through understanding the current and past social conditions and origins of any existing environmental inequities. Generational justice, ensuring that today's decisions protect the rights of future generations, is a part of contextual justice.