

More than Human

Integrating Wildlife Ecology and Urban Design
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ABSTRACT

Urbanization and climate change are creating a cascade of biodiversity loss: the World Wildlife Fund reported a 69% decline in terrestrial wildlife populations between 1970 and 2020. Ecologists understand the spatial needs of non-human species, and architecture, engineering and construction (AEC) practitioners can design and manage urban green spaces to support biodiversity.

AEC designers and planners have the potential to enhance urban habitat quality and connectivity at both the site and system level. However, design professionals and ecologists don't yet know how to collaborate seamlessly to develop, implement, and evaluate urban habitat networks. Our research asked a critical question: How can designers and planners better integrate ecologists and biologists into the design process to create functional spaces and networks for human-wildlife coexistence?

To answer this, we studied successful urban habitat projects at multiple scales, interviewed scientists and designers about their experiences collaborating, and examined public engagement strategies and post-occupancy evaluations. Building on these insights, we convened a series of interdisciplinary roundtables in Chicago, bringing together designers, engineers, planners, ecologists, and academics to discuss our research question.

The interviews and roundtables clarified how designers can integrate biodiversity considerations throughout the AEC industry and on every project. Urban designers can make a project's ecology more legible to the public and more functional for nonhumans. Stakeholder engagement strategies can convince clients and communities to celebrate and welcome nonhumans. Design professionals' role is not to be biology experts; it is translating science into design.

We identified straightforward ways to improve collaboration: build ecology into design scopes and fees, develop a shared lexicon between disciplines, and create opportunities for baseline data collection and post-occupancy evaluation. Further recommended actions at the industry, firm, studio, and individual level are included in Table 4. By folding science into design, AEC practitioners can move beyond anthropocentric planning and create cities that are vibrant, resilient, and welcoming to all forms of life.

1. INTRODUCTION

We are living through an unprecedented urban transition. In 1950, 64 percent of Americans lived in urban areas. Today that number is 83 percent, and it is projected to rise to 89 percent by 2050. Cities are projected to cover 6 percent of total U.S. land area by 2060.ⁱ As we build denser, faster, and higher, our spaces increasingly overlap with wildlife. These encounters are no longer rare, they are inevitable. Without intentional design, they will lead to more conflict than coexistence.ⁱⁱ

Terrestrial wildlife populations have declined by 69 percent since 1970, but the US is failing to meet both national and international biodiversity and conservation targets.ⁱⁱⁱ Urbanization is a major cause of biodiversity loss, but our cities can also be part of the solution. AEC practitioners can design and manage urban green spaces to support biodiversity by increasing regional habitat heterogeneity, fostering community environmental stewardship, and helping species pre-adapt to climate change.^{iv}

We believe that as planners and designers of the built environment, we have a duty to prioritize biodiversity just like we do carbon. Over the past several decades, the AEC industry has made significant strides in reducing both operational and embodied carbon emissions in the built environment.^v Progressive design firms are issuing climate action plans and setting internal carbon targets. But our fields rarely consider the needs of nonhuman plants, animals, and fungi.

This is partially because biodiversity is more complex to measure than carbon. It transcends site boundaries, occurring at scales ranging from single cells to continental migration pathways. Several NGOs and intergovernmental agencies are developing assessments and key performance indicators to quantify biodiversity at a site scale.^{vi} Most planners and designers are not trained to collect baseline measurements, identify target species, or perform post-occupancy wildlife evaluations. But designers don't have to become experts in wildlife biology – we can partner and consult with scientists.

Ecologists understand the spatial needs of non-humans. Designers and planners have the potential to enhance urban habitat quality and connectivity at both the site and system level. However, design professionals and ecologists don't yet know how to collaborate seamlessly across disciplines to develop, implement, and evaluate urban habitat networks. The core challenge is collaboration. Ecologists and designers often work in parallel, not in sync. We share the potential to enhance urban habitat quality and connectivity, but lack shared frameworks, lexicon, and workflows to collaborate effectively.^{vii} Without integration, opportunities to create functional spaces for human-wildlife coexistence are lost.

This report explores how we can bridge that gap. Our research asked a critical question: **How can designers and planners better integrate ecologists and biologists into the design process to create functional spaces and networks for human-wildlife coexistence?**

To answer this, we studied successful urban habitat projects at multiple scales, interviewed scientists and designers about their experiences collaborating, and examined public engagement strategies and post-occupancy evaluations. Building on these insights, we convened a series of interdisciplinary roundtables in Chicago, bringing together designers, engineers, planners, ecologists, and academics to discuss our research question.

2. METHODS

We used a mixed-methods approach that combined research, interviews, and interdisciplinary roundtables to capture a wide range of practitioners and research insights.

Case Studies

As part of our mixed-methods approach, we conducted a review of precedent case studies to understand how cities and regions around the world are integrating wildlife considerations into planning and design. We examined projects at multiple scales. Reviewing these diverse examples allowed us to compare strategies across contexts, identify transferable principles, and assess how different jurisdictions operationalize ecological goals through policy, design, and implementation. Insights from these case studies informed both the structure of our toolkit and the recommendations presented in this report.

Location	Case Study	Scale	Interviewee Associated with the Case Study
Los Angeles, USA	Wallis Annenberg Wildlife Crossing	Infrastructure	Robert Rock
Hamburg, Germany	Kirchheim District Animal-Aided Design Masterplan	District	Thomas Hauck
Edmonton, Canada	WildEdmonton	City	Catherine Shier

Table 1: Selected case studies from precedent research

Interviews

We conducted semi-structured interviews with expert ecologists and designers who have direct experience working on wildlife-oriented planning and design projects. Each conversation was documented and distilled into key insights that illuminated best practices, common challenges, and opportunities for integrating ecological science into design processes. These interviews provided essential practitioner perspectives that directly informed the development of our framework, toolkit, and final recommendations.

Date	Interviewee(s)
5/30/2025, 9/10/2025 and 11/19/2025	Seth Magle, PhD, Urban Ecologist, Senior Director of Urban Wildlife Institute at Lincoln Park Zoo
6/3/2025 and 8/18/2025	Stanley Gehrt, PhD, Principal Investigator of the Cook County Coyote Project
6/26/2025	Catherine Shier, Conservation Coordinator at the City of Edmonton, Canada
10/7/2025	Lauren Umek, PhD, Ecologist and Sr. Project Manager at Chicago Park District and Cassi Saari, Botanist and Ecological Restoration Practitioner at Chicago Park District
10/16/2025	Robert Rock, Landscape Architect, President & CEO at Rock Associates
10/22/2025	Thomas Hauck, Landscape Architect and Founder at Studio Animal Aided Design
10/23/2025	Lorrie Ward, Naturalist at Forest Preserves of Cook County
11/6/2025	Sara Egan, Urban Planner, Landscape Architect, Director of Conservation Planning at Openlands

Table 2: Interview schedule and participants

Interdisciplinary Roundtables

Building from the individual interviews, we recognized the need to convene interdisciplinary forums. We convened two interdisciplinary roundtable discussions bringing together ecologists, designers, planners, engineers, and other practitioners. The first session, held on October 21, 2025 at SmithGroup, provided an opportunity to ground the team in disciplinary workflows and planning approaches through presentations and a collaborative habitat-planning exercise focused on coyotes in Chicago. The second session, held on December 16, 2025 at the Lincoln Park Zoo, centered on shared terminology, reviewing a draft toolkit (Appendix A), discussing data needs and policy opportunities, and identifying potential pilot project sites. Together, these roundtables functioned as structured qualitative methods that surfaced cross-disciplinary insights, clarified challenges and opportunities for urban wildlife collaboration, and directly informed the refinement of our deliverables.

Date	Event	# of attendees	Location
10/21/2025	Interdisciplinary Roundtable 1	10	SmithGroup Chicago Office
12/16/2025	Interdisciplinary Roundtable 2	24	Lincoln Park Zoo, Chicago, IL

Table 3: Interdisciplinary roundtable schedule

3. INTERVIEW INSIGHTS

Seth Magle, PhD | Insights on Cross Discipline Collaboration

“Biologists joke about when we’re called too late to join a design project. It’s like, well, I can give you a post-mortem exam – here are the ten things I would have done differently.”

Seth Magle, Director of the Urban Wildlife Institute in Chicago and Executive Director of the Urban Wildlife Information Network, is an urban ecologist who began his career studying prairie dogs and has since spent over 20 years researching urban wildlife to advance global biodiversity conservation.

Seth emphasized that successful wildlife integration in urban design depends on early and continuous collaboration between ecologists and design professionals. He noted that ecologists are often brought in too late, after plans are finalized, leaving them to provide “post-mortem” feedback rather than shaping outcomes. This reactive approach limits impact and creates frustration on all sides. Seth stressed that involving biologists at the earliest design stages is critical for embedding ecological priorities into site planning, building placement, and habitat connectivity.

He highlighted cultural and structural barriers: architects and planners rarely think to consult ecologists during conceptual phases, while academic biologists often prioritize research outputs over applied collaboration. Seth argued for shifting professional norms so interdisciplinary work becomes a recognized metric of success. He also underscored the need for ongoing monitoring post-construction, comparing it to energy audits. Without data on species use, designs cannot improve over time.

Seth’s vision includes creating formal communication channels, such as shared networks or listservs, to make collaboration easier and more routine. Ultimately, his guidance reframes the workflow as a circular system, where ecologists provide actionable insights early and designers integrate those into creative solutions, ensuring projects move beyond aesthetics to measurable ecological performance.

Key Takeaways:

- **Change Industry Norms:** Advocate for interdisciplinary collaboration between ecologists and designers and set up formal communication channels to make teamwork routine.
- **Collaborate Early and Often:** Bring ecologists into the design process from the start to embed ecological priorities in site planning, building placement, and habitat connectivity, avoid late-stage “post-mortem” band-aids.
- **Monitor After Construction:** Establish wildlife monitoring programs post-build to measure ecological performance and improve future designs.

Stan Gehrt, PhD | Insights on Mismanagement and Human-Wildlife Conflict

“These decisions often come down to misunderstanding. Coyotes are doing everything they can to avoid us, and yet we take away the tiny spaces that allow them to do that.”

Stan Gehrt is a wildlife ecologist based in the Chicago region and a professor of Mammalian Wildlife Biology and Management at Ohio State University. Stan is the leading expert on urban coyotes, known for his long-term research in the Chicago metropolitan area. His work uses GPS and radio telemetry to study coyote behavior, habitat use, and human-wildlife interactions. Gehrt’s research has shaped understanding of how carnivores adapt to cities and the challenges that arise when urban development intersects with wildlife needs.

Gehrt emphasized that coyotes succeed in cities but face major risks, especially vehicle collisions, which account for 60–70 percent of deaths annually. Corridors and green spaces are critical for reducing these dangers, yet development frequently removes core habitats, forcing coyotes into fragmented areas and increasing stress. He described how urban coyotes travel long, linear routes, often along rail lines, because green spaces are scarce and disconnected. This makes life energetically demanding, especially during summer when they must feed pups.^{viii}

Mismanagement often stems from reactive decisions. Gehrt shared a striking example from Graceland Cemetery: a site with a history of welcoming coyotes suddenly removed a coyote pair after the female became aggressive toward dogs during denning season. Despite his advice to restrict dogs temporarily, the cemetery opted for lethal removal, leaving pups orphaned. He noted similar cases at golf courses, where coyotes were killed at the request of goose-control contractors, ironically eliminating natural goose predators and deterrents.

Gehrt stressed that killing coyotes is ineffective; new individuals quickly recolonize, perpetuating conflict. He also highlighted systemic gaps between planners and wildlife professionals, citing time constraints and lack of collaboration. Effective coexistence requires proactive design, wildlife-friendly corridors, crossings, and long-term monitoring.

Key Takeaways:

- **Prioritize Connectivity:** Design and maintain green spaces and corridors to keep habitats linked and reduce risky, fragmented routes that increase wildlife mortality.
- **Plan Proactively for Coexistence:** Avoid reactive measures like killing coyotes; instead, create wildlife-friendly corridors, crossings, and implement long-term monitoring to support ecological balance.
- **Collaborate Early and Often:** Bring wildlife professionals into planning from the start to prevent mismanagement and unnecessary lethal actions, ensuring better outcomes for both people and wildlife.

Robert Rock, PLA | Insights on Public Perception

“Helping people understand their relationship to these species in the interconnected web is probably the most functional way we can do good...even at the most modest scale.”

Robert Rock is a landscape architect and founder of Rock Design Associates based in Chicago, with deep experience in wildlife infrastructure projects, including the ~\$100 million Wallis Annenberg Wildlife Crossing in Agoura Hills, California. His work bridges architecture, ecology, and engineering, focusing on how built environments can coexist with wildlife.

Rock emphasized that negative public perception of wildlife in urban environments has the tendency to be shaped by misconceptions and personal or cultural narratives. Many people view animals like coyotes or mountain lions as threats, even when they are simply behaving as they would naturally. Alarmist reactions, such as neighborhood warnings after normal predator behavior, stem from misunderstanding their ecological role and pre-existing assumptions. Education and storytelling can shift these attitudes, as seen in the case of P-22, the mountain lion whose story galvanized support for the Wallis Annenberg Wildlife Crossing. This demonstrates how compelling narratives can transform fear into advocacy.

He stressed that social perception is not a minor factor, it can determine whether projects succeed. Sharing data about the movements of certain species of wildlife in urban environments can also backfire if it motivates a fear response for people, so communication strategies must be thoughtful in providing education on coexistence with these species. Rock advised meeting people where they are, listening actively, and engaging with humility. Passion and authenticity, he said, resonate even with skeptics. Ultimately, fostering coexistence requires patience, dialogue, and framing wildlife as integral to healthy urban ecosystems rather than as intruders. Public understanding can transform design interventions into community-supported efforts that benefit both people and nature.

Key Takeaways:

- **Turn Public Perception into Support:** Use education and storytelling, like the P-22 example, to replace fear with advocacy. Frame wildlife as essential to healthy urban ecosystems so communities champion your design interventions.
- **Communicate Strategically:** Don't just share raw data; provide context, listen actively, approach with humility, and craft messages that educate and spark curiosity instead of alarm. Always position wildlife as a vital part of the urban fabric.

Thomas Hauck | Insights on the Role of Design

“You need the ecologist, but you need also the ecologically educated designers. The biologists speak a completely different language. We are important as translators -managing the communication and translating from biology into the design language.”

Thomas Hauck is a landscape architect based in Berlin, Germany, and a professor at TU Wein in Vienna, Austria. He co-founded a firm, Studio Animal Aided Design, with zoologist Wolfgang Weisser. Together, Hauck and Weisser co-developed Animal-Aided Design (AAD) as a distinct methodology defined approach for integrating biodiversity into design, to bridge the gap between conservation and landscape architecture. Overall, Hauck emphasizes that design plays a critical role in creating space for wildlife and advocates for an organism-centered approach rather than generic habitat solutions.

AAD begins with analyzing biodiversity data from global and local sources to identify a regional species pool. From there, his team uses ecological connectivity analysis and participatory workshops with stakeholders to select target species that can realistically thrive under future urban conditions. Hauck stressed that designers must anticipate transformation. Urban development changes habitat structure, so planning must align with species able to adapt.

AAD translates species-specific life cycle needs, such as nesting, hibernation, and foraging, into practical design measures like green roofs for wild bees, bat roosts in facades, and bird-friendly glass. Connectivity modeling ensures corridors and networks support movement and resource access.

To maintain consistency through long development timelines, Hauck produces detailed toolkits with quantitative targets (e.g., number of nesting boxes per building block) for architects and developers. This approach combines data-driven analysis, creative design translation, and stakeholder engagement, making ecological integration both functional and aesthetically appealing.

Hauck sees designers as translators between biology and architecture, bridging technical requirements and visual design. Success is measured by species use, but the ultimate goal is fostering resilient ecosystems. His advice: keep solutions simple, prioritize maintenance, and communicate creatively to build public awareness.

Key Takeaways:

- **Start with Species-Centered Design:** Identify target species first who can thrive on the project site, then translate their life cycle needs, i.e. nesting, foraging, hibernation, into design features such as green roofs, bat roosts, and bird-friendly glass.
- **Act as a Translator Between Biology and Design:** Use clear ecological toolkits to guide architects and developers, bridging technical requirements with creative solutions that foster thriving ecosystems.

Lauren Umek, PhD | Insights on Equitable Access to Wildlife

“Nobody in Chicago should have to get on a plane to experience nature. You should be able to walk to it.”

Lauren Umek, an ecologist with a background in plant and soil science, oversees capital construction projects with natural areas for the Chicago Park District. She emphasized that most park district sites are created habitats, not remnants, and success often depends on establishing resilient plant communities rather than direct wildlife interventions. Wildlife planning focuses primarily on birds, pollinators, and small fauna, with the philosophy that diverse plantings will support diverse wildlife. Large mammals and reintroductions are rare due to complexity and resource constraints.

Lauren highlighted soil challenges in urban restoration, noting that many sites have compacted, fill-heavy soils or even industrial byproducts like slag. Surprisingly, these “urban wastelands” can mimic rare ecosystems such as dolomite prairies, offering unexpected opportunities for conservation.^{ix} She also stressed the importance of maintenance and establishment, especially under climate-driven variability in rainfall, which demands more resources and adaptive strategies like multiple seedings.

Connectivity and expansion of natural areas are approached opportunistically, often driven by community input or spatial gaps. Citizen science tools like iNaturalist and eBird provide critical, but limited data, often used as a result of limited in-house wildlife expertise. Barriers include funding, plant availability, and long-term care. Ultimately, Lauren underscored a core mission: ensuring equitable access to nature, so every Chicagoan can experience biodiversity without leaving the city.

Key Takeaways:

- **Design Resilient Plant Communities:** Establish diverse plant communities to support birds, pollinators, and small fauna, if a direct wildlife intervention is out of reach.
- **Ensure Equitable Access Through Adaptive Management:** Address soil challenges, funding limits, and climate variability with adaptive strategies and community-driven connectivity so every resident can experience nature locally.

Catherine Shier | Insights on using an Ecological Network Approach

Catherine Shier is a Conservation Coordinator and Ecological Planner for the City of Edmonton, Canada.

Catherine highlighted Edmonton's long-term commitment to integrating biodiversity into urban planning through an ecological network approach rather than isolated protected areas. This paradigm shift began in 2007 with the Natural Connections Strategic Plan, emphasizing connectivity between core habitats via corridors and "stepping stones." The 2010 Municipal Development Plan and 2020 City Plan reinforced this vision, mandating the protection, restoration, and enhancement of interconnected natural systems.

Key strategies include wildlife passage design and construction to maintain habitat connectivity and reduce genetic isolation and human-wildlife conflict. Since 2007, Edmonton has implemented over 17 wildlife passages, ranging from culverts for small mammals to large overpasses for moose and other species. These efforts are supported by ecological network planning tools, such as mapping paths of least resistance, allowing planners and designers to understand which movement corridors best suit species like chickadees.

Monitoring is also central to Edmonton's approach. Wildlife monitoring programs and natural area assessments revealed both successes, such as moose using underpasses, and challenges, including habitat loss within designated areas. To address this, Edmonton developed a biodiversity monitoring framework promoting systems thinking, intergovernmental collaboration, and scalable planning from neighborhood to continental levels.

Overall, Edmonton's model demonstrates how cities can embed ecological connectivity into growth plans, infrastructure design, and long-term monitoring to sustain biodiversity in urban landscapes.

Key Takeaways:

- **Embed Biodiversity through Ecological Networks:** Connect core habitats with corridors and stepping stones, build wildlife passages, and use resistance mapping to maintain connectivity and reduce conflict.
- **Monitor and Adapt Collaboratively:** Continuously track wildlife use, apply systems thinking, and work across government to refine strategies and sustain biodiversity at multiple scales.

4. INTERDISCIPLINARY ROUNDTABLE INSIGHTS

Interdisciplinary Roundtable #1

The first interdisciplinary roundtable emerged organically from our early interviews, which consistently highlighted a critical gap in collaboration between ecologists and design professionals. What began as a series of one-on-one interviews revealed a shared desire among practitioners to connect across disciplines, compare workflows, and confront the communication barriers that often limit ecological integration in design. In response, we convened a roundtable at SmithGroup that brought these voices together for the first time. The session functioned as an exploratory forum to test the premise that deeper, structured collaboration could meaningfully improve outcomes for urban wildlife planning. The

roundtable provided a live, interdisciplinary exchange that helped validate themes emerging from our interviews and underscored the need for collective frameworks, shared lexicon, and more intentional collaboration practices moving forward.

Roundtable 1 Agenda (October 21, 2025 – hosted at SmithGroup)

Welcome and Opening Discussion

- Participant introductions
- Overview of the research grant, including project goals, progress to date, and initial framing considerations

Presentation: Urban Wildlife Institute

- Presentation by Seth Magle, introducing the mission and work of the Urban Wildlife Institute
- Discussion of typical workflows, methods, and decision-making processes from a wildlife biologist's perspective

Collaborative Planning Exercise

- Scenario-based exercise focused on developing a wildlife habitat plan for the City of Chicago, with emphasis on coyote habitat
- Walkthrough of a typical planning framework and schedule
- Group discussion of key questions, challenges, and opportunities at each stage of the planning process

Attendees:

- Seth Magle, Wildlife Biologist and Director of Urban Wildlife Institute at LP Zoo
- Sevin Yildiz, Professor of Ecological Urban Design, UIC
- Phil Enquist, Professor of Ecological Urban Design, UIC
- Grace Hebert, Urban Planner at Lochner, Wildlife Advocate, Documentarian
- Kris Lucius, Landscape Architect at SmithGroup
- Rob Kish, Landscape Architect at SmithGroup
- Gregg Calpino, Landscape Architect and Cities Studio Leader at SmithGroup
- Mark Wagstaff, Civil Engineer at SmithGroup
- Anna Jursik, Landscape Architect at SmithGroup
- Bridget Barnes, Urban Designer at SmithGroup

Key Takeaways:

- **Build Ecology into Design Scopes and Fees:** Impactful collaboration between our disciplines requires time and funding. Including ecologists in the fee from pre-design through construction.
- **Develop a shared lexicon:** Designers, planners, and ecologists do not always use the same vocabulary to communicate. This creates collaboration barriers. Develop a glossary of commonly used terms in each field so that each discipline is on the same page when communicating.
- **Create Opportunities for Post-Occupancy Evaluation:** To evaluate whether and how wildlife is using our designs, ecologists need access to the project sites after construction. Designers and planners can leverage our relationships with clients to enable ongoing monitoring of wildlife.



Photo 1: Seth Magle (Sr. Director of Urban Wildlife Institute at Lincoln Park Zoo) presents to design practitioners during Roundtable 1 at SmithGroup, sharing information about the Urban Wildlife Information Network.



Photo 2: Interdisciplinary conversation between Seth Magle (Ecologist, Sr. Director of Urban Wildlife Institute at Lincoln Park Zoo), Rob Kish (Landscape Architect, SmithGroup), Bridget Barnes (Urban Designer, SmithGroup), Phil Enquist (Former Urban Design Partner, SOM), and Grace Hebert (Planner, Lochner) at Roundtable 1.



Photo 3: Interdisciplinary conversation between Mark Wagstaff (Civil Engineer, SmithGroup), Sevin Yildiz (Professor of Ecological Urban Design, UIC), Kris Lucius (Landscape Architect, SmithGroup) and Anna Jursik (Landscape Architect, SmithGroup) at Roundtable 1.

Interdisciplinary Roundtable #2

The strong enthusiasm and cross-disciplinary energy generated during the first roundtable created a clear path forward to continue the conversation, leading to the organization of a second session. Building on the momentum of that initial gathering, and responding to participants' desire for more structured, ongoing collaboration, Seth Magle hosted the second roundtable at the Lincoln Park Zoo, allowing us to bring an even broader group together, particularly additional ecologists whose voices are critical to this work. This convening expanded the dialogue beyond identifying challenges to actively testing early solutions, including drafting elements of a shared lexicon and exploring how emerging themes from Roundtable 1 could translate into tools, processes, and collaborative structures. The session served as a deeper, more generative iteration of the first, reinforcing the value of interdisciplinary exchange and advancing the collective thinking that shaped our final recommendations.

Roundtable 2 Agenda (December 16, 2025 – hosted at Lincoln Park Zoo)

Welcome and Introductions

- Participant introductions
- Overview of the session goals and how the discussion builds on insights from Roundtable 1

Toolkit Review and Discussion

- Group review of the printed draft toolkit (Appendix A)
- Discussion of structure, key components, and opportunities to strengthen clarity, shared lexicon, and cross-disciplinary usability

Map Exercise and Pilot Project Exploration

- Collaborative mapping activity to identify potential pilot project sites across Chicago

- Discussion of partnerships, ecological considerations, and opportunities for alignment with public agencies and community organizations

Attendees:

- Seth Magle, Wildlife Biologist and Director of Urban Wildlife Institute at LP Zoo
- Sevin Yildiz, Professor of Ecological Urban Design, UIC
- Phil Enquist, Professor of Ecological Urban Design, UIC
- Grace Hebert, Urban Planner at Lochner, Wildlife Advocate, Documentarian
- Kris Lucius, Landscape Architect at SmithGroup
- Rob Kish, Landscape Architect at SmithGroup
- Mark Wagstaff, Civil Engineer at SmithGroup
- Anna Jursik, Landscape Architect at SmithGroup
- Bridget Barnes, Urban Designer at SmithGroup
- Mason Fidino, Quantitative Ecologist at Lincoln Park Zoo
- Mikko Jimenez, Outreach Biologist at Lincoln Park Zoo
- Henry Adams, Wildlife Management Coordinator at Lincoln Park Zoo
- Andrea Flores, Research Intern at Urban Wildlife Institute at Lincoln Park Zoo
- Ling-Ling Menez, Computational Biologist and Researcher at Lincoln Park Zoo
- Samantha Chavez, Ecologist at Openlands
- Robert Rock, Founder, Landscape Architect at Rock Associates
- Lauren Umek, Urban Ecologist and Project Manager at Chicago Park District
- Sarah Rodriguez, Senior Proposal Specialist at SmithGroup
- Kelli Duff, Civil Engineer at SmithGroup
- Jerry Adelman, President Emeritus at Openlands
- Charles McDonald, Investment Analyst at Chicago Arch Angels
- Mark Johnston, Senior Research Ecologist, UIC
- Lydia Link, Urban Ecology Specialist at Studio Gang
- Amy Greene, Nature Center Director at Belle Isle Nature Center

Key Takeaways:

- **Ecologists have collected huge amounts of urban wildlife data, but it's not always organized and is rarely publicly available:** Scientists have access to more wildlife datasets than designers and planners. Designers should consult them in pre-design and site analysis to understand what information is available and how it could influence our design.
- **Design timelines are linear, while science timelines are more cyclical:** Ecologists hypothesize; designers declare. Designers should consider not only how science can improve their work, but how design can support scientific inquiry.
- **There are significant interest and enthusiasm for these types of collaboration in the Chicago area.**



Photo 4: The second interdisciplinary roundtable was hosted at Lincoln Park Zoo at the Kovler Lion House and Pepper Family Wildlife Center conference room.



Photo 5: The second interdisciplinary roundtable was hosted at Lincoln Park Zoo at the Kovler Lion House and Pepper Family Wildlife Center conference room.



Photo 6: Twenty-four individuals attended Roundtable 2, including ecologists, designers, engineers, urban designers, landscape architects, and an economist.



Photo 7: Anna Jursik (Landscape Architect, SmithGroup) kicks off the meeting at Roundtable 2.



Photo 8: Bridget Barnes (SmithGroup) guides participants through a mapping activity incorporating coyote GPS data to explore opportunities for pilot projects at Roundtable 2.



Photo 9: Interdisciplinary conversation at Roundtable 2 among Seth Magle (Sr. Director of Urban Wildlife Institute at Lincoln Park Zoo), Bridget Barnes (Urban Designer, SmithGroup), Anna Jursik (Landscape Architect, SmithGroup) and Mason Fidino (Quantitative Ecologist at Lincoln Park Zoo)



Photo 10: Participants at Roundtable 2 received printed copies of the “Coyotes Are Chicagoans, Too” toolkit (Appendix A), which served as a shared reference for exploring clearer communication, common terminology, and stronger collaboration across ecology and design.



Photo 11: Kelli Duff (Civil Engineer, SmithGroup) shares her perspective to the group at Roundtable 2.

5. RECOMMENDED ACTIONS

Throughout this work, practitioners repeatedly emphasized the need for stronger collaboration, a shared lexicon, and a deeper integration of ecological thinking across all stages of planning and design. The table below translates the major insights from our research, interviews, and interdisciplinary roundtables into clear, scalable actions. By organizing these priorities across industry, firm, studio, and individual scales, we provide implementable actions that AEC firms and professionals can embed into everyday practice.

Scale	Actionable Insights	Practical Implementation
Industry-wide <ul style="list-style-type: none"> ASLA APA AIA ASCE 	Normalize Early Ecologist Involvement	Require ecological input from early planning stages and build model scopes including ecological services.
	Develop Shared Lexicon & Knowledge	Create cross-disciplinary glossaries, guidelines, and shared training across fields.
	Set Connectivity & Biodiversity Standards	Advocate for policies mandating habitat connectivity and biodiversity metrics.
	Make Post Occupancy Monitoring Standard Practice	Encourage long-term wildlife monitoring requirements in municipal and client standards.
	Expand Access to Wildlife Data	Promote centralized wildlife data platforms accessible for planning and design.
SmithGroup Firm-wide <ul style="list-style-type: none"> Across all 20 offices 	Integrate Ecology into Project Delivery	Include ecologists in teams and budgets; standardize ecological review points for QAQC, project closeout, and post occupancy evaluation (add to life of the project roadmap).
	Develop a Biodiversity Action Plan	Demonstrate pioneering, innovative leadership by creating a firmwide biodiversity action plan, which would be the first in the AEC industry.
	Build Capacity	Offer firmwide training on wildlife-informed design and ecological basics. Support individuals sitting on industry-wide biodiversity advisory committees.
	Codify Collaboration Processes	Include ecological protocols in SmithGroup Manual of Practice and add biodiversity goals to leadership kickoff meeting agenda.
	Invest in Monitoring Partnerships	Establish master agreements with ecologists to support post-occupancy wildlife assessment and engage with key clients to seek opportunities for long term partnerships.
	Create a Firmwide Knowledge Library	Use SharePoint to host a repository of ecological datasets, case studies, and tools.
Midwest Cities Studio <ul style="list-style-type: none"> Across 7 Midwest locations 	Identify Target Clients	Map priority municipalities and agencies; identify private-sector clients with sustainability interests or commitments; develop outreach aligned with regional ecological goals.
	Advance Pilot Projects	Partner locally to test wildlife-friendly designs on real sites.
	Define Regional Ecological Priorities	Identify regional target species and ecological opportunities / threats; embed priorities into studio workflows.
	Strengthen Local Networks	Join or convene local ecology–design networks and knowledge exchanges.
	Develop Midwest-Specific Design Toolkits	Develop Midwest-specific habitat and connectivity toolkits.
Individual Practitioner <ul style="list-style-type: none"> 1600 individuals 	Advocate within Projects	Promote ecological priorities and early collaboration within each project.
	Apply Species-Centered Thinking	Identify feasible species and translate needs into design features.
	Improve Ecological Literacy	Increase personal knowledge of wildlife, habitats, and conservation science.
	Pursue Continuous Learning through Fieldwork	Participate in fieldwork and monitoring to refine ecological design intuition.

Table 4: Summary of Recommended Actions for the AEC Industry to Advance Wildlife-Supportive Urban Environments

6. CONCLUSION

Biodiversity must become a design imperative in the architecture, engineering and construction (AEC) industry, not an optional consideration, if humans are to adapt to a changing climate and ensure resilient networks of life that support both humans and wildlife. By folding science into design workflows, the AEC industry can move beyond anthropocentric planning and create cities that are vibrant, resilient, and welcoming to all forms of life.

As biodiversity considerations become more mainstream, more project opportunities are going to arise. Measuring and mitigating carbon emissions may have once been a niche service but are now a core consideration for many clients in the AEC industry. At present, biodiversity focused projects represent a small share of the market, pursued by a limited group of owners and delivered by specialized firms. However, we anticipate broader recognition of biodiversity's value in the years ahead. SmithGroup is well positioned to become a leader in this emerging market, and we recommend action across multiple scales. The recommendations presented in Table 4 are the culmination of our research, turning collective expertise into actionable steps that can strengthen partnerships between ecologists and designers and advance wildlife-supportive urban environments.

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