

From Butterflies to Bluebirds: Enhancing Biodiversity in the US

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Agenda



- 1. Why Biodiversity Matters**
- 2. Business Case for Biodiversity**
- 3. Wildlife Habitat Council Certification**
- 4. Implementation Roadmap**
- 5. Biodiversity Projects Across the Region**
- 6. Advancing Our Commitment to a Sustainable Future**

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Why Biodiversity Matters

What is Biodiversity?



The variety of life at all levels:



- Genetic diversity



- Species diversity



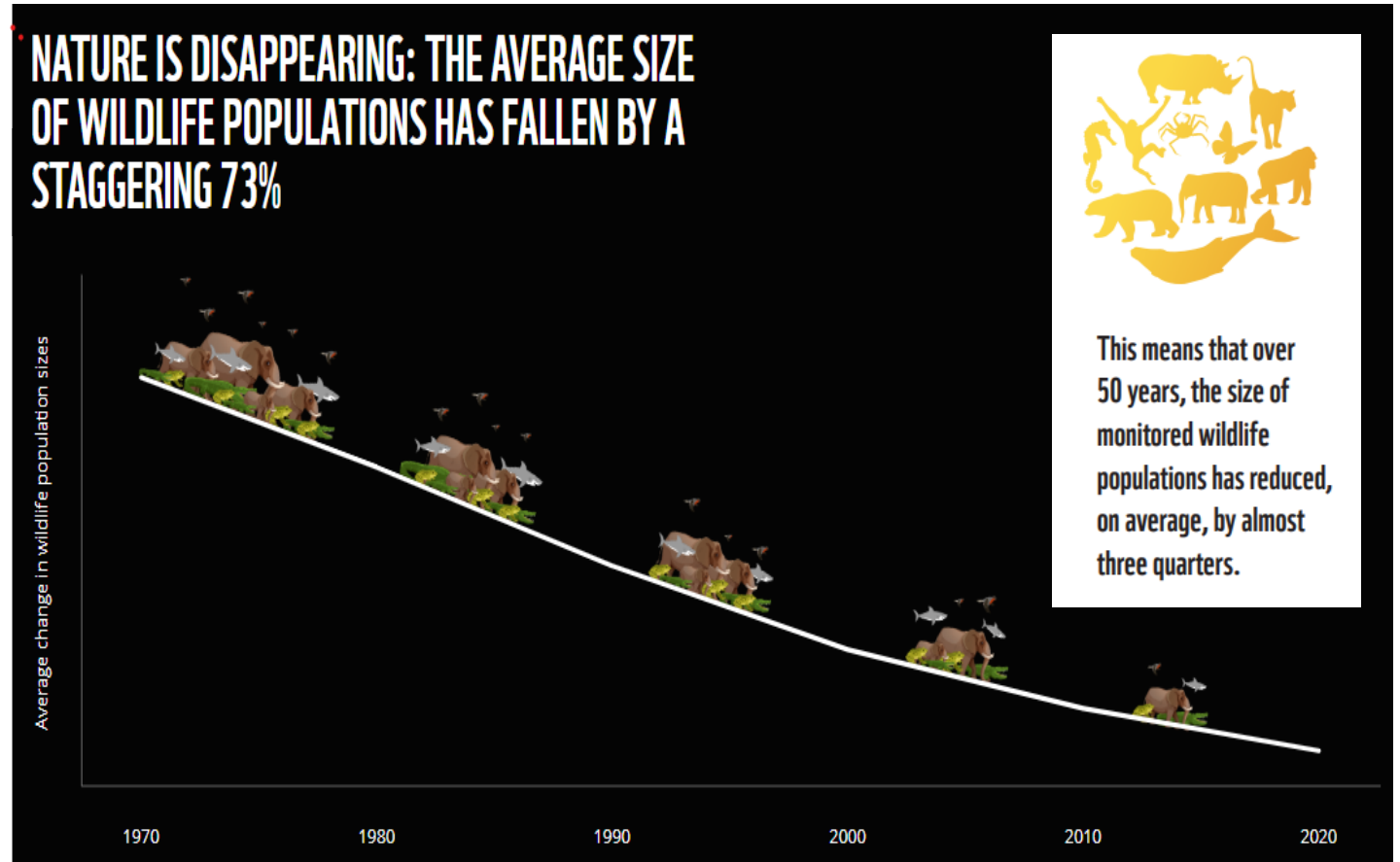
- Population diversity



- Ecosystem diversity



- Ecosystem functional diversity

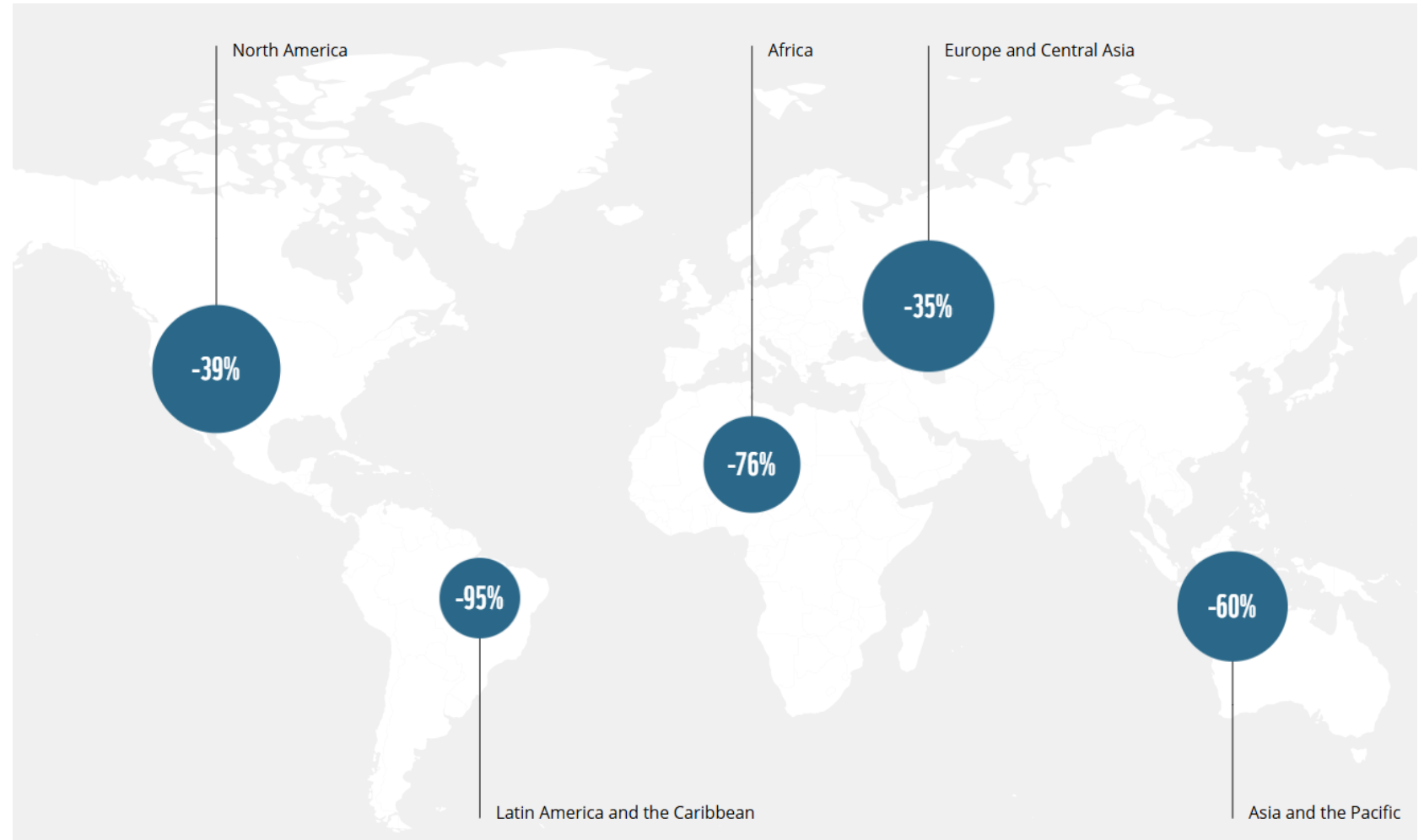


Nature Loss Across the Globe



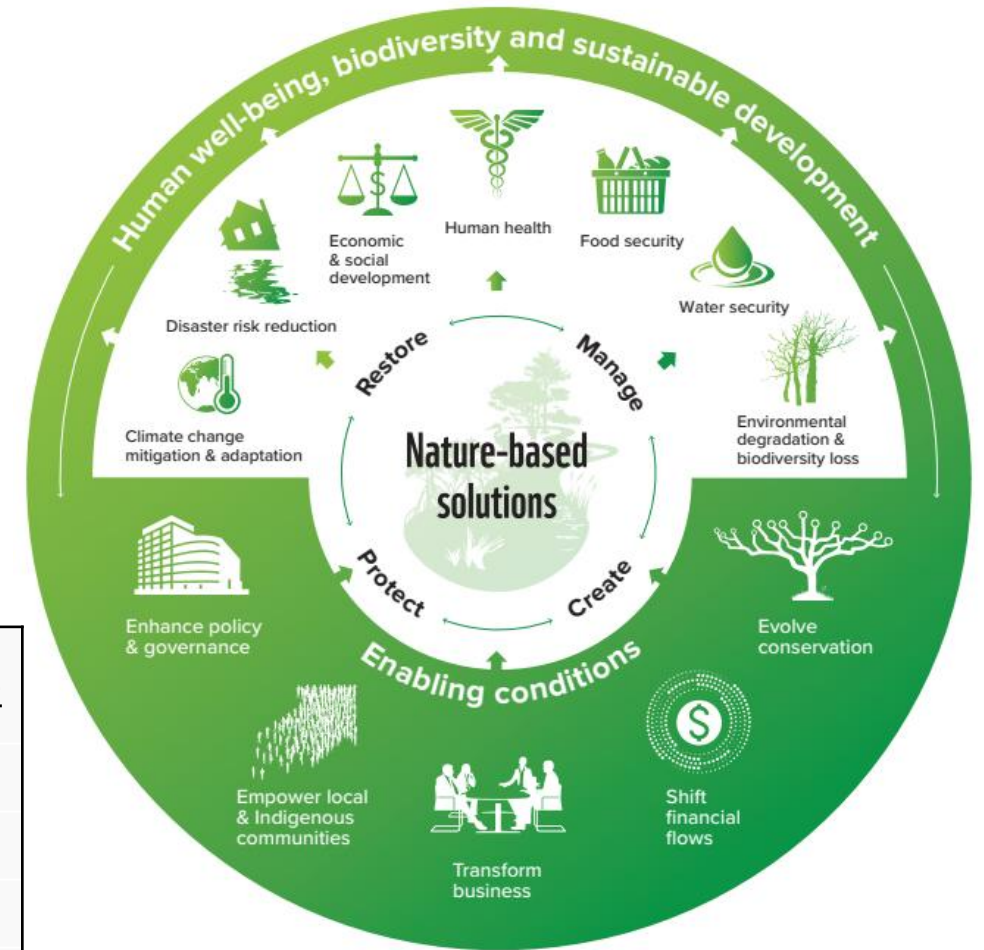
Modern Era Changes:

- Accelerated species loss
- Habitat destruction
- Impact of human activity



Why is Biodiversity Important?

- Ecosystem benefits: reduced pollination, water purification, climate regulation, soil fertility.
- Resilience: Biodiversity increases ecosystem stability and resilience to disturbances.
- Economic and health benefits: Pharmaceuticals, food security, raw materials.



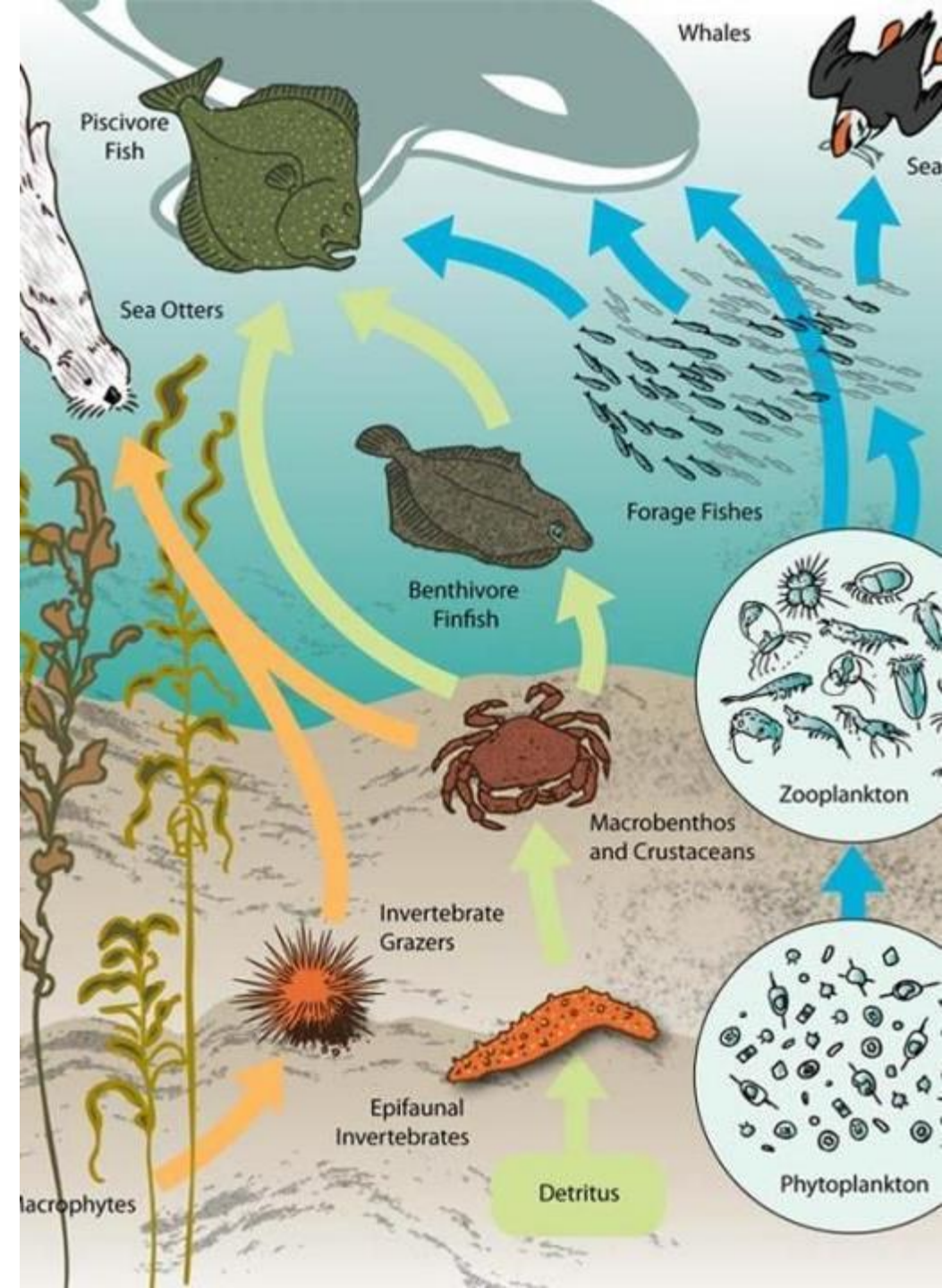
<u>Ecosystem Service</u>	<u>Species/Process</u>	<u>Estimated Global Value</u>
Pollination	Bees, butterflies	\$235–\$577 billion
Water Purification	Wetland plants	\$2.3 trillion
Carbon Sequestration	Forests, peatlands	\$1.7 trillion
Disease Regulation	Bats, birds	Not easily quantified

Ecosystem interdependence

- The decline or removal of a species can collapse the ecosystem or cause conditions that are out of balance.
- The ecosystem becomes less resilient
- Undermining the benefits that ecosystems provide to people – like food, clean water or regulating our climate.
- Adding diversity supports balanced food webs.

"If we replaced half of the more than 40 million acres of lawn [in the US] with native plants, that would be more land than all of the national parks combined."

- Doug Tallamy in his book, *Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard*.



Regulatory issues



Wetland Protection and Mitigation

- *Clean Water Act (Section 404)*: Regulates the discharge of dredged or fill material into waters of the U.S., including wetlands.
- *EU Water Framework Directive*: Requires protection and sustainable use of water bodies, including wetlands.

Endangered Species Protection

- *Endangered Species Act (ESA)*: Prohibits activities that harm listed species or their habitats.
- *EU Habitats Directive*: Requires assessment of impacts on protected species and habitats.
- Environmental Impact Assessment (EIA) Migratory Bird Treaty Act (U.S.): Protects migratory birds from harm due to industrial activities.

Ramsar Convention (International): Promotes conservation and wise use of wetlands globally.

Convention on Biological Diversity (CBD): Encourages countries to integrate biodiversity considerations into business and land use planning.

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Business Case for Biodiversity

Align company and stakeholder values



American Chemistry Council:

Integrating biodiversity initiatives into Corporate Stewardship programs can help chemical companies advance sustainability goals, enrich local habitats, empower employees, and engage communities.



Growing Importance

67% of employees are more willing to apply for jobs at environmentally sustainable companies (2022 IBM Institute for Business Value survey).

Biodiversity Awareness

70% of employees believe companies should prioritize biodiversity with climate action (2023 Capgemini report).

Stakeholder engagement



Brands that demonstrate commitment to sustainability and biodiversity see increased customer loyalty and trust.

70% of global consumers want companies to provide clear information about their environmental and biodiversity impacts (2022 Ipsos survey).

In addition to ecological benefits, these efforts can also support long-term business resilience—such as securing water resources through wetland conservation or enhancing supply chain stability via ecosystem services. (American Chemistry Council)



A clear path to support biodiversity



A clear path to support biodiversity

To minimize risks from accidental releases, fires, or explosions, chemical plants generally have ample green space for recommended buffer zones such as US EPA's Risk Management Program, EU, the Seveso III Directive, ACC recommendations, and local zoning laws.

Effective land use such as using native plants which grow better and naturally has other benefits:

- Less labor required cutting costs
- No pesticides
- No or reduced fertilizers
- Educate on the aesthetics
- Positive community engagement



Creating a culture of caring



- Opportunities for growth and leadership at all levels
- Develops leadership competencies: collaboration, problem solving, project management, communication
- Experiential learning like volunteering helps employees develop empathy, adaptability, and strategic thinking
- Builds camaraderie across divisions, units and departments
- A culture of caring driven by employees lifts morale
- 92% of surveyed HR executives believe volunteering improves leadership skills
- 60% of job seekers consider corporate social responsibility when evaluating job offers
- Employees participating in company volunteering are 57% more likely to feel connected to the company's purpose

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Wildlife Habitat Council Certification

Wildlife Habitat Council (WHC) - Certification



Objectives

- Encourage the creation, enhancement, and conservation of wildlife habitats on corporate, industrial, or community lands.
- Promote biodiversity and ecosystem health.
- Recognize and reward organizations for responsible land stewardship.
- Foster environmental education and community engagement.



WHC Certification - Projects



- Sites may implement one or more project types, often in combination, to meet certification criteria.
- Each project type is evaluated based on its design, implementation, and impact on biodiversity.
- Points or recognition may be awarded for the number, quality, and effectiveness of projects in each category.

<u>Project Type</u>	<u>Focus Area</u>	<u>Example Activities</u>	<u>Objective</u>
Species	Target species	Nest boxes, pollinator gardens, amphibian ponds	Support specific wildlife populations
Education	Awareness	Signage, workshops, school programs, citizen science	Build knowledge and stewardship
Habitat	Ecosystem health	Native plantings, wetland creation, invasive removal	Enhance overall habitat and biodiversity

WHC Certification - Checklists and Scoring



The site is evaluated against a set of criteria tailored to the project type:

- Provision of food, water, cover, and space for wildlife.
- Use of native plants and sustainable landscaping.
- Management practices that minimize negative impacts (e.g., chemical use, invasive species).
- Enhancement projects (e.g., pollinator gardens, wetlands, nesting structures).
- Community involvement and education efforts.

WHC Certification - Recognition



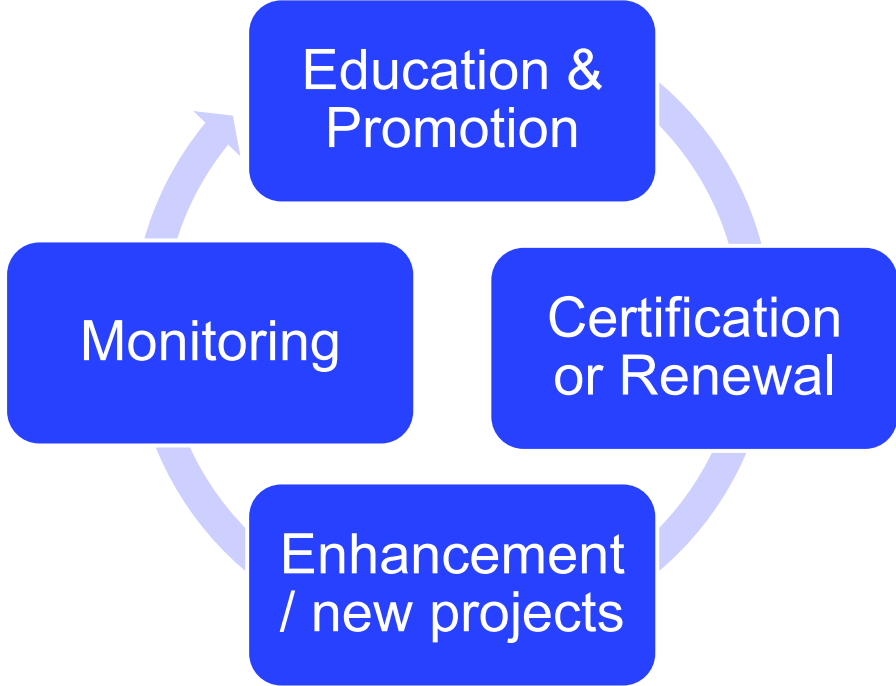
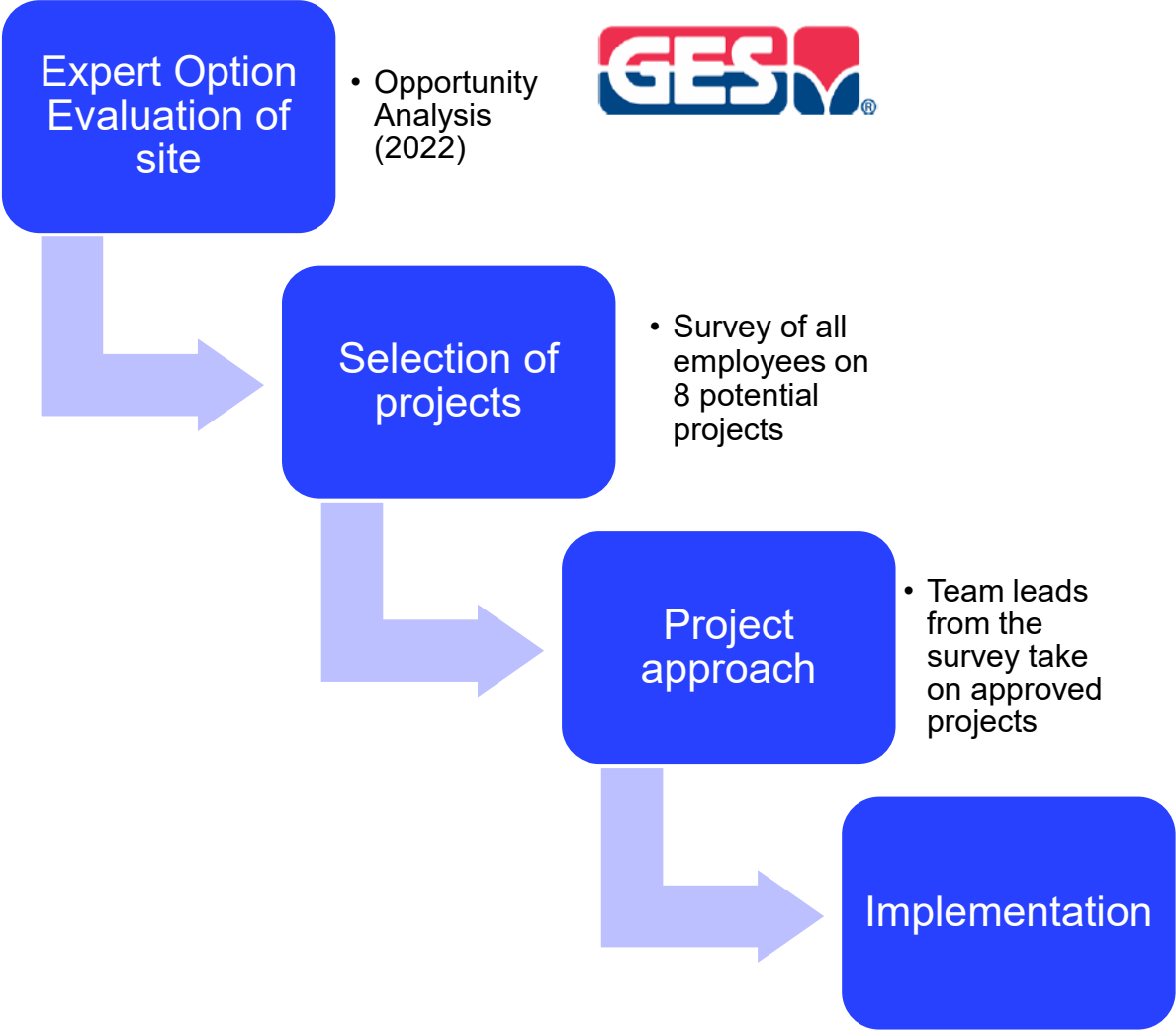
A minimum score or threshold must be met for certification, with higher scores potentially earning higher levels of recognition (e.g., Silver, Gold, Platinum).

- Certified sites receive formal recognition, signage, and may be listed in Tandem Global's registry.
- Certification is typically valid for a set period (e.g., 3-5 years) and may require periodic renewal or re-assessment.

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Implementation Roadmap

Implementation Roadmap



- Volunteers for each project along with intern teams

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Biodiversity Projects Across the Region

Adrian leads the way



Wildlife Habitat Certification since 1999

WHC Silver Status Certification 2024

Certification projects:

- Bluebird houses
- Bat Houses
- 1.3 Mile Nature Trail through wildlife habitat refuge

260 acres diverse landscape including wetland, forest, and riparian area along the River Raisin



Ann Arbor Innovation Center & Regional Headquarters, MI



Projects:

- Bluebird Nestboxes
- Pollinator Habitat
- Monarch Butterfly
- Mitchell's Satyr Butterfly
- Bat Houses
- Nature trail



Ann Arbor - Finished Projects



Pollinator Garden Team

- Monitors garden conditions & records the different pollinators observed.
- Specific plants in the garden include coneflowers, daisies, and coreopsis.
- Gardens filled with a variety of native flowers, shrubs, and trees that provide food and shelter for bees, butterflies, and other pollinators.



Bluebird Team

- Monitors 14 bluebird boxes
- 23 bluebird fledglings since 2022, also sparrow, wren, and swallow fledglings.
- Known for vibrant blue feathers, bluebirds are small, brightly colored songbirds native to NA.
- Diet is insects and berries, making them beneficial for gardens & farms.



Monarch Butterfly Team

- Supported each year by WACKER interns.
- Travel up to 3,000 miles from North America to central Mexico each year.
- Bright orange & black wings warn predators that they are toxic from chemicals absorbed from milkweed plants during the caterpillar stage.

Native Plant Conversion - Allentown, PA



- Conversion began in 2019 replacing old foundation plantings - a variety of Microbiota not native to the area.
- More than 50 plant species chosen for the growing conditions and to bloom at different times of the year April - October.
- Building design only provides small alcoves but team found a variety of plants native to the mid-Atlantic or Northeast region.
- Building also features solar panels on roof.



Wetlands Restoration – Charleston, TN



- Created three wetland mitigation areas across more than 13 acres and re-naturalized an existing stream.
- Planted about 800 trees along a 490-meter stretch of the South Mouse Creek bank and stabilized the stream bank by planting 1,320 new trees adjacent to it.
- Planted trees native to Tennessee - American witch hazel, river birch, sycamore, eastern redbud, black cherry, black walnut and tulip trees.
- Helps to maintain the natural habitat on the stream bank and naturally filter the water.



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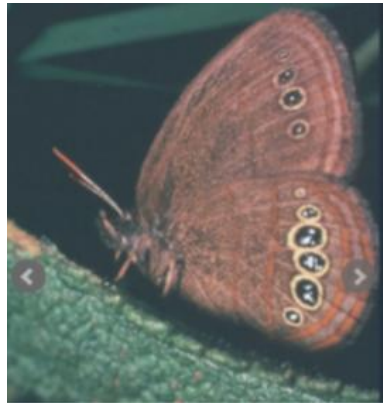
Advancing Our Commitment to a Sustainable Future

Ann Arbor - Future Certification Projects



Mitchell's Satyr Butterfly (MSB) Team

- Nationally endangered species, only 11 groups of this butterfly are left in the U.S., and almost all live in Southern Michigan.
- Live in a rare habitat – fens. The team plans to plant native seeds and sedges, ideal food for the species.
- The team will monitor for caterpillars, larvae, and butterflies within the habitat.
- Called a “canary in a coal mine” for America’s wetlands.



Bat House Team

- Bats are among the most misunderstood animals in the world, but they are warm-blooded mammals - like us!
- The team has installed bat houses around AIC, including seed mix to attract insects that bats feed on.
- They quietly provide an invaluable service by feasting upon millions of insects each night.

2026 Responsible Care® & Sustainability Conference



Advancing Corporate Stewardship Through Biodiversity Initiatives

- Selected by the ACC to present biodiversity projects at annual conference.
- Demonstrates how biodiversity projects fit into the Responsible Care® framework.
- The session will feature speakers who will share real-world examples.
- Highlighting key successes and lessons learned from developing habitat projects.
- Practical steps for building a roadmap to implement and maintain a biodiversity initiative.

WACKER

References



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