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Utilizing Nature-based Solutions to Promote Biodiversity Conservation Postprint

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Abstract

Biodiversity loss is one of the major crises facing humanity today. Against the backdrop of unfulfilled biodiversity conservation targets such as the Aichi Targets, how to advance transformative change to halt and reverse the trend of biodiversity loss has become a matter of urgency. Nature-based Solutions (NbS), by adhering to principles of holism, systematicity, diversity, stability, sustainability, trade-offs, and inclusivity, have emerged as an important tool for addressing global crises. This article elucidates the pathway through which NbS guides biodiversity conservation by analyzing the relationship between biodiversity and NbS at mechanistic and functional levels, and by leveraging the restoration of ecosystem complexity and trophic levels. It proposes a dual connotation of utilizing NbS to promote biodiversity conservation: first, aiming to enhance ecosystem diversity, stability, and sustainability, and second, harnessing natural ecological processes. Building upon the established cognitive linkage between NbS and biodiversity, this paper further examines the alignment between the conceptual underpinnings of NbS and biodiversity conservation objectives, as well as relevant NbS approaches for biodiversity conservation in ecological spaces, agricultural spaces, and urban spaces. It summarizes domestic and international practical cases of NbS promoting biodiversity, discusses the multiple benefits of NbS in synergistically advancing biodiversity conservation, climate change mitigation and adaptation, and sustainable development, and envisions the integration of NbS into biodiversity conservation strategic planning. The aim is to provide references for facilitating the implementation of frameworks such as the “Kunming-Montreal Global Biodiversity Framework” and for promoting the mainstreaming of NbS in biodiversity conservation.

Full Text

Preamble

Utilizing Nature-Based Solutions to Promote Biodiversity Conservation

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Abstract

Biodiversity loss is one of the major crises facing humanity today. Against the backdrop of unmet biodiversity conservation targets such as the Aichi Targets, advancing transformative change to halt and reverse biodiversity loss has become an urgent priority. Nature-based Solutions (NbS) have emerged as a critical tool for addressing global crises due to their adherence to principles of holism, systems thinking, diversity, stability, sustainability, trade-offs, and inclusivity. This paper elucidates the pathway through which NbS can guide biodiversity conservation by restoring ecosystem complexity and trophic levels from both mechanistic and functional perspectives. We propose a dual framework for leveraging NbS to promote biodiversity conservation: first, enhancing ecosystem diversity, stability, and sustainability as core objectives; and second, harnessing natural ecological processes as the means. Building on this understanding of the NbS-biodiversity nexus, we further examine the alignment between NbS conceptual frameworks and biodiversity conservation goals, review NbS methodologies applicable across ecological, agricultural, and urban spaces, and summarize domestic and international case studies demonstrating NbS effectiveness. We discuss the multiple benefits of NbS in synergistically addressing biodiversity conservation, climate change, and sustainable development, and present a vision for integrating NbS into biodiversity conservation strategic planning. This work aims to provide reference for implementing frameworks such as the Kunming-Montreal Global Biodiversity Framework and mainstreaming NbS in biodiversity conservation.

Keywords: Nature-based Solutions (NbS), biodiversity, ecosystem processes, complexity, trophic levels

Biodiversity is a key determinant of ecosystem health and resilience, and the benefits it provides are crucial to planetary health, human well-being, and sustainable development (Ren and Guo, 2021). The species pool and habitat het-

erogeneity associated with biodiversity promote multiple ecosystem services essential for maintaining ecosystem health and function (Le Provost et al., 2022). While biodiversity serves human welfare, it is simultaneously being altered by human activities. Since the onset of the Anthropocene, intensifying human activities have profoundly impacted the composition, structure, and function of biodiversity and global ecosystems (Steffen et al., 2007). Biodiversity is declining rapidly due to human pressures, particularly habitat loss and degradation from conversion of natural habitats to agricultural and forestry land. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reports that biodiversity is declining faster than at any point in human history, with one million animal and plant species worldwide threatened with extinction. For terrestrial and freshwater ecosystems, land-use change has been the direct driver with the largest relative negative impact on nature since 1970, followed by direct exploitation (IPBES, 2018).

Global efforts to curb and reverse biodiversity loss, led by the UN Convention on Biological Diversity, have achieved certain results but remain far from effective conservation targets (CBD, 2020). These efforts are still insufficient, necessitating exploration of a transformative pathway (Stokstad, 2020). In recent years, Nature-based Solutions (NbS) have gained international recognition as an important approach to addressing environmental and social challenges. NbS harness nature's work to protect, conserve, restore, and sustainably manage natural and modified ecosystems, enhancing human well-being and biodiversity while addressing multiple societal challenges. NbS can directly maintain biodiversity by improving the health, extent, and connectivity of species and habitats through protection, conservation, management, and restoration actions, while indirectly maintaining biodiversity by adapting to and mitigating climate change impacts on species and habitats. This paper systematically reviews the relationship between NbS and biodiversity conservation from the perspectives of their connotations, criteria, and methodologies, analyzes the multifunctionality of NbS in synergistically addressing multiple challenges, and summarizes empirical experiences from China and abroad. We conclude with a future outlook on NbS for biodiversity conservation.

1.1 The Connotation of Biodiversity

Biodiversity encompasses the diversity and variability of living organisms and their compositions, representing the totality of all biological species and their genetic variations, differences in ecosystems formed by organisms and their environments, and related ecological processes within a given region (Ren and Guo, 2021). The mechanisms underlying biodiversity formation and maintenance constitute a major research topic in ecology (Wang et al., 2022). Biodiversity at different organizational levels holds significant meaning and function. Intraspecific genetic variation constitutes genetic diversity, which is essential for understanding species adaptation mechanisms. Species diversity in the context of biodiversity differs from that in ecological diversity research, as it describes the overall

status of species in a given area rather than studying community organization levels. Ecosystem diversity refers to the diversification of habitats, biological communities, and ecological processes within the biosphere, as well as the diversity of habitat differences and ecological process variations within ecosystems. Recent research suggests that functional diversity is a crucial factor influencing organisms and ecosystem functions, while phenotypic diversity and landscape diversity also hold important significance and have received widespread attention (Lefcheck et al., 2015; Provost et al., 2022).

1.2 The Interactive Relationship Between Ecosystems and Biodiversity

The relationship between biodiversity and ecosystems represents a core principle in biology and ecology: the relationship between form and function. Numerous studies have demonstrated a strong synergistic relationship between biodiversity and ecosystem function, though the underlying mechanisms remain important scientific questions. Understanding how local community diversity is regulated by regional communities is crucial for elucidating multi-scale biodiversity maintenance (Zhang et al., 2022). Interactions among species within communities form network structures known as community structures (Wang et al., 2022), which together with their abiotic environment constitute ecosystems. Ecosystems with high biodiversity typically exhibit multiple components, numerous connections between units, self-adaptive and evolutionary capabilities, and dynamic properties, representing high complexity (Zhang et al., 1998). As complex biophysical systems formed by organisms and their living environments through causal relationships, ecosystems' structure, function, and dynamics are their most critical characteristics, with biodiversity being the primary determinant. Although the mechanisms of community structure and species coexistence remain challenging topics in ecological research (Song, 2020), studies have amply demonstrated that species interactions not only influence community structure but also generate emergent properties that make communities more than the simple sum of their individual components (Wang, 2002). Species interactions—ecosystem processes—and self-organization processes such as the spontaneous formation of ordered spatial patterns produce a series of emergent properties, creating a whole greater than the sum of its parts and delivering diversified ecosystem functions (Ge and Liu, 2020). The ecological niche overlap or species redundancy associated with high biodiversity can effectively enhance ecosystem stability and its four dimensions: resistance, resilience, persistence, and variability. Stability provides a safety guarantee for ecosystem functions in the face of disturbances, enabling adaptation to natural fluctuations in environmental factors and maintaining self-preservation and reproduction.

1.3 NbS Encompassing Ecosystems and the Mechanism of Biodiversity Conservation

The interaction between self-organizing processes at individual and ecosystem levels is a key factor determining ecosystem function and resilience. While restoring target species' short-term presence is relatively easy, their long-term survival requires support from stable, healthy ecosystems. Particularly when disturbances occur, ecosystem stability plays a crucial role in whether target species can respond and survive. The IPBES report (2019) notes that without progress in addressing the root causes of biodiversity loss, policies focused solely on conservation are unlikely to overcome the various pressures driving biodiversity decline. Effective biodiversity conservation still faces several key challenges, including the intrinsic mechanisms and evolutionary consequences of human impacts on biodiversity, key influencing factors and driving mechanisms behind declines in critical taxonomic groups, and community responses and adaptations to increasing extreme climate events.

Ecological restoration primarily occurs through the recombination of population components within communities to reallocate ecological niches. Walker (1995) found in exploring species conservation that ecosystem-based approaches, or ecosystem resilience approaches, are superior to species-only conservation. Huang et al. (2019) analyzed biodiversity in China's ecological restoration projects and found that restored ecosystems showed greatly improved structural characteristics compared to degraded ecosystems, suggesting that biodiversity recovery in restored ecosystems may be reflected more in structural features than in biodiversity characteristics per se. Therefore, determining restoration targets for degraded ecosystems and rebuilding ecosystem stability and sustainability, including complex trophic levels, constitutes the core issue of restoring ecosystem stability to protect biodiversity. Given that mechanistic analysis of species composition, abundance, interspecific relationships, and their effects on ecological processes and ecosystem structure and function remains a challenge in ecological research, using NbS to fully apply natural processes of species interactions and community succession, ensuring restoration and maintenance of ecosystem structure and complexity, and thereby continuing to deliver holistic structure and function becomes the most effective pathway for ecological restoration and biodiversity conservation (Figure 1 [Figure 1: see original paper]).

Meanwhile, in exploring the relationship between diversity and ecosystem stability, biodiversity should not be confined to a specific level (e.g., species) or a single aspect of that level (e.g., species richness). Instead, the influence of diversity across all biological organizational levels and different aspects of the same level on system stability should be comprehensively examined. NbS's cross-scale philosophy transcends the narrow concept of biodiversity (species count in one location) by protecting and restoring ecosystem integrity and diversity, thereby providing effective support for biodiversity at large scales and even globally. Overall, NbS implementation involves restoring and enhancing ecosystem

structure, function, processes, health, and services. In this process, biodiversity conservation is both a goal and a means; only by protecting and restoring this crucial ecological foundation can regional ecological improvement and security be achieved. NbS fundamentally represents a consideration of the biodiversity effects of ecosystem management measures, balancing and coordinating ecological benefits with biodiversity.

2.1 The Conceptual Connotation of NbS is Closely Related to Biodiversity

Against the complex backdrop of biodiversity loss and frequent environmental problems, humanity has gradually recognized that while conservation actions alone are effective, they are insufficient to meet current challenges. Maintaining human survival and strengthening nature conservation and sustainable use are complementary and interdependent goals (IPBES, 2019). When dealing with complex systems, NbS transcends traditional mechanical problem-solving approaches, building upon the ecosystem approach, which also forms the foundation of the Convention on Biological Diversity. Since the World Bank first explicitly proposed the NbS concept in its 2008 report, scholars and research institutions have extensively explored its definition. Although their understandings emphasize different aspects, they consistently demonstrate that NbS represents solutions beneficial to both human well-being and biodiversity. The 2022 UN Environment Assembly, as the first UN body to officially define and endorse NbS, proposed a widely accepted definition: “Nature-based Solutions are actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing benefits for human well-being, ecosystem services, resilience and biodiversity.” This definition explicitly establishes ecosystem resilience and biodiversity as core NbS objectives.

The IUCN Global Standard for NbS and its guidance, which proposes eight basic criteria and 28 corresponding indicators, aims to unlock NbS potential at large scales and reflects core biodiversity conservation content and objectives. Criterion 3 and its indicators directly clarify that NbS applications should deliver net benefits for biodiversity and ecosystem integrity (Luo et al., 2020).

2.2 NbS Constructs a Comprehensive Methodological System for Biodiversity Conservation

Traditional biodiversity conservation has primarily focused on protection within natural ecosystems or protected areas. For natural ecosystems, NbS proposes area-based conservation approaches that recognize the important role of local communities, with protected areas themselves serving as important NbS vehicles that conserve the integrity of natural ecosystem structure and function and protect biodiversity in key regions. However, achieving comprehensive biodiversity protection solely within limited protected areas presents considerable challenges

(IUCN, 2022). Constructing ecological corridors to connect protected area nodes into networks represents a necessary means for coordinated implementation and management of biodiversity conservation at national or regional scales (Saura et al., 2017). NbS approaches such as ecosystem restoration, green infrastructure, and ecosystem-based management can be fully applied in ecological corridor planning, construction, and management.

Meanwhile, managing and restoring biodiversity outside protected areas and incorporating other regionally important areas into holistic conservation frameworks holds great significance for biodiversity. Two NbS pathways—achieving sustainability and multifunctionality in human-managed ecosystems and designing and managing new ecosystems—serve as important means for advancing Other Effective Area-Based Conservation Measures (OECMs) (IUCN, 2016).

For urban ecosystems, NbS provides nature-based infrastructure tools including blue-green infrastructure, increasing the area, quality, and connectivity of blue-green spaces, ensuring biodiversity-inclusive urban planning, enhancing local biodiversity, ecological connectivity, and integrity, and promoting biodiversity conservation and green socio-economic development in urban spaces. For agricultural ecosystems, agricultural NbS offers sustainable management tools for food production in ways that restore nature, protecting soil health and farmland biodiversity.

Beyond consistency with ecosystem-based approaches, the NbS methodological framework is innovative. NbS requires integrating management activities with landscape-scale planning and policies, distinguishing it from other species or ecosystem conservation methods and highlighting its role as a sustainable development tool based on healthy ecosystems—core to successfully improving ecosystems and human well-being (Cohen-Shacham et al., 2019).

2.3 NbS Pursues Synergy Between Biodiversity Conservation and Other Objectives

The global environmental crises of biodiversity loss, climate change, ecosystem degradation, and impeded sustainable development are intertwined and mutually causal, creating cascading effects with severe and already-perceptible consequences that are inextricably linked to human survival and global sustainable development. For example, climate change is a driver of biodiversity loss, while ecosystem destruction and biodiversity loss exacerbate climate change; human activities reduce biodiversity, which in turn negatively feeds back on socio-economic risks, further triggering climate disasters under this mutual feedback. The concept of a shared community of life between humans and nature reveals that conservation actions alone are insufficient to meet current challenges, necessitating systematic and integrated approaches that promote synergies among biodiversity conservation, climate change response, and human well-being.

NbS project actions differ from pure conservation actions because their definition includes the connotation of addressing multiple societal challenges in a

resource-efficient, adaptive manner (Cohen-Shacham et al., 2019). The seven societal challenges defined in NbS principles and methods include climate change mitigation and adaptation, disaster risk reduction, economic and social development, human health, food security, water security, and environmental degradation and biodiversity loss.

Applying NbS to synergistically advance climate and biodiversity actions can effectively address climate change to slow global warming, reduce its impacts on species distribution, phenology, population dynamics, community structure, and ecosystem function, and lower the risks of ecosystem degradation and species extinction from increasing extreme weather and meteorological disasters. Simultaneously, strengthening biodiversity conservation to curb biodiversity loss and enhance ecosystem quality and stability helps improve overall environmental quality, increase ecosystem carbon sequestration capacity, and effectively address climate change.

Moreover, traditional biodiversity conservation actions often lack sufficient channels for translating conservation outcomes into social and economic benefits, making it difficult to mobilize conservation enthusiasm. By comprehensively considering the ecological, economic, and social benefits of interventions, NbS can effectively promote participation from all stakeholders.

2.4 NbS Constructs a Global Discourse System for Ecological Governance

The UN Convention on Biological Diversity has gradually adopted NbS principles and methods. The Kunming Declaration calls for “strengthening the application of ecosystem-based approaches to address biodiversity loss, restore degraded ecosystems, and enhance resilience” (CBD, 2021), explicitly equating ecosystem-based approaches with NbS, marking international recognition of NbS for achieving and expanding biodiversity conservation. The second phase of COP15 adopted the Kunming-Montreal Global Biodiversity Framework, whose Target 11 incorporates NbS from the perspective of enhancing ecosystem services (Luo et al., 2022).

NbS also represents an important measure for achieving the UN Framework Convention on Climate Change and Paris Agreement goals, as well as the Sustainable Development Goals, making it a hot topic in current biodiversity conservation and climate change response. The IPBES-IPCC co-sponsored report indicates that safeguarded NbS could contribute 37% of climate change mitigation needed for the 2°C temperature target by 2030 while benefiting biodiversity conservation.

International support for NbS to address biodiversity conservation, climate change, and other challenges demonstrates that NbS has become an important link and bridge for synergistically addressing biodiversity conservation alongside environmental and social challenges, promising innovative solutions for the critical window of global governance in the coming decade. NbS is thus regarded

as one of the few important means for jointly advancing the UN Convention on Biological Diversity (CBD), UN Framework Convention on Climate Change (UNFCCC), and UN Convention to Combat Desertification (UNCCD), and for promoting the Sustainable Development Goals (SDGs).

3.1 International Practice

The EU Horizon 2020 program prioritized NbS as an investment area, aiming to advance NbS research on biodiversity and ecosystem services toward sustainable development innovation, investing €240 million in NbS-related projects (Favre et al., 2017). A comprehensive assessment of EU climate change NbS projects showed that 88% of interventions produced positive outcomes for climate adaptation, while 67% simultaneously benefited species richness. All projects reported benefits for climate mitigation and adaptation while supporting ecosystem health, achieving a “triple win” (Key et al., 2022).

The UK has implemented a Biodiversity Net Gain policy, requiring developers to first achieve 10% net biodiversity gain through impact mitigation, then conduct on-site enhancement or offsetting elsewhere. This regulatory policy incentivizes social capital investment in NbS biodiversity conservation projects or compensates for losses in one area with gains elsewhere.

European cities have integrated NbS into “healthy urbanization” to mainstream biodiversity, establishing co-financing to promote public-private partnerships that foster shared funding and responsibility. These cities often adopt specific, quantifiable targets to guide NbS actions, developing and maintaining urban biodiversity-friendly NbS (Xie and Bulkeley, 2020). Most urban NbS projects treat biodiversity as a fundamental element of local urban planning, achieving multiple conservation, restoration, and development objectives through natural habitat protection and green infrastructure construction, creating a series of typical urban NbS and biodiversity cases (Table 1).

In developing countries, governments collaborate with NGOs and other institutions to broadly engage stakeholders in adopting NbS to address dual challenges of biodiversity loss and coastal socio-economic development. For example, IUCN Asia launched the Markets and Mangroves project in Vietnam to address mangrove destruction from shrimp farming, protecting and restoring mangrove ecosystems while conducting capacity training and establishing organic shrimp farming industry chains to increase ecological product value (Table 1).

3.2 Domestic Practice

China’s biodiversity conservation has directly benefited from the philosophy of harmonious coexistence between humans and nature and from Nature-based Solutions, generating many beneficial explorations and practices with remarkable results. The National Master Plan for Major Ecosystem Conservation and Restoration (2021-2035) (“Double Planning”), promulgated in 2020, serves as the basic guideline for advancing ecological conservation and restoration

work. The 2021 Guiding Opinions on Coordinating and Strengthening Climate Change Response and Ecological Environmental Protection emphasizes the importance of applying NbS to mitigate and adapt to climate change while synergistically advancing biodiversity conservation and integrated mountains-rivers-forests-farmlands-lakes-grasslands governance.

Under the guidance of Double Planning, China's integrated mountains-rivers-forests-farmlands-lakes-grasslands-ecosystem conservation and restoration projects ("Shan-Shui Projects") have deployed 44 projects across the "Three Zones and Four Belts," restoring 3.5 million hectares of land and benefiting millions of people while promoting synergy between biodiversity conservation and socio-economic development. These projects have been recognized as a UN Decade on Ecosystem Restoration flagship initiative. From planning guidance to design guidelines and project implementation, Shan-Shui Projects have continuously absorbed and integrated NbS, adapting them to China's national context and fostering a series of NbS practices. Following NbS principles and standards, these projects adopt a systems approach that treats all ecosystems as a "life community," incorporating landscape-scale NbS design (Luo et al., 2019; Zhou et al., 2021). Through holistic protection and systematic governance, Shan-Shui Projects employ a series of NbS tools and methods to restore biological habitats and ecological corridors in degraded forests, grasslands, wetlands, rivers, lakes, and farmlands, emphasizing protection of native zonal vegetation, rare and endangered wildlife, and their habitats, thereby enhancing regional ecosystem diversity, stability, and sustainability and continuously improving wildlife habitats (Luo et al., 2020).

NbS methods and tools for ecological, agricultural, and urban spaces have been applied in China's territorial spatial planning, generating a series of typical practices. In 2021, the Ministry of Natural Resources and IUCN co-published typical NbS cases from China, demonstrating the continuous integration of NbS concepts and principles into territorial spatial planning. In ecological spaces, planning advocates protection-first approaches that work with nature, protecting and restoring core natural habitats and key species, where NbS methods based on ecosystem protection and rewilding play important roles. China's "Ecological Conservation Redlines, Climate Change Mitigation and Adaptation Action Initiative" was selected as one of 15 UN NbS flagship cases. In agricultural spaces, planning clarifies that NbS-based eco-agricultural methods can deliver multifunctionality, maintaining and increasing natural or semi-natural habitats such as buffer strips in farmlands, strengthening ecological corridor functions, increasing crop diversity and beneficial insect populations, and ensuring national food security, agricultural product quality safety, and ecological security. For example, the Black Soil Conservation NbS Project, addressing black soil degradation, adopted straw mulching as an NbS action. In mulched fields, earthworm density reached six times that of conventional ridge tillage per square meter, effectively protecting the black soil layer, reducing chemical fertilizer use by 20%, and increasing yields by 5-10%. Increased earthworm populations improve soil biological properties, while straw mulch also provides cover

and food for birds of prey and small animals, enhancing farmland biodiversity. In urban spaces, NbS tools such as green infrastructure have been applied in constructing hybrid infrastructure and optimizing ecological corridors, bringing nature into cities and enhancing urban biodiversity conservation capacity. For example, facing increasing human-land conflicts from rapid urbanization, the Chongqing Urban Renewal Project relied on existing natural landscapes, controlling and protecting important ecological spaces, working with natural topography in development, integrating sponge city concepts, using water as a thread to connect internal urban ecological restoration, and using park construction as a buffer between humans and nature in cities, achieving dual improvements in ecological and economic benefits.

NbS demonstrates strong relevance and consistency with biodiversity conservation in conceptual connotation, target criteria, and technical methods. NbS serves the core objectives of ecosystem resilience and biodiversity, adopting nature-based conservation and management actions to restore ecosystem structure, processes, functions, and services, thereby enhancing ecosystem diversity, integrity, stability, and sustainability. A series of domestic and international NbS practices for biodiversity conservation highlight their adherence to systematic, holistic, and scale-based principles, as well as their multifunctionality, comprehensiveness, and inclusiveness in synergistically addressing multiple challenges, further expanding and validating NbS pathways and effectiveness for biodiversity conservation. NbS aligns closely with China's traditional philosophy of "Tao follows nature" and ecological civilization concepts such as harmonious coexistence between humans and nature and the life community of mountains-rivers-forests-farmlands-lakes-grasslands. Applying NbS to territorial spatial planning, integrated mountains-rivers-forests-farmlands-lakes-grasslands-ecosystem conservation and restoration projects, and responses to extreme climate events has achieved positive results in synergistically addressing biodiversity loss, environmental pollution, ecosystem degradation, and climate change. Nevertheless, NbS applications for biodiversity conservation remain insufficient, with specific implementation methods and pathways requiring further clarification and conservation effectiveness needing further evaluation, necessitating continued development of relevant theories and methods.

Biodiversity conservation represents a critical action for building a Beautiful China characterized by harmonious coexistence between humans and nature in China's new era. Centered on post-2020 global biodiversity governance targets, NbS, as a comprehensive tool dedicated to protecting biodiversity and enhancing human well-being, requires deepened research and exploration in several areas to continue playing a key role in supporting implementation of the Kunming-Montreal Global Biodiversity Framework: (1) Research and application of NbS in restoring and maintaining ecosystem functional services and meeting human well-being, including differentiated integration of NbS in protected areas and OECMs outside protected areas, sustainable management measures supporting Shan-Shui Projects, and innovative methods for enhancing ecosystem resilience in urban and agricultural ecosystems to maintain nature's contributions and

benefits to humans; (2) Exploration and practice of NbS in synergistically addressing multiple crises including climate change and biodiversity loss, including deep interactions and impact mechanisms between climate change and biodiversity, and experience summarization and promotion of implementing NbS to mitigate and adapt to climate change, reduce climate disaster risks, and protect biodiversity; and (3) Promoting mainstreaming of NbS in biodiversity conservation, such as integrating NbS into biodiversity conservation strategies, territorial spatial planning, and related management policies and mechanisms, and guiding enterprises to adopt NbS in biodiversity conservation practices.

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