



BIODIVERSITY CONSERVATION POLICY OF THE REPUBLIC OF UZBEKISTAN AND INTERNATIONAL OBLIGATIONS

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Abstract

This article analyzes the role of the Republic of Uzbekistan in the global biodiversity conservation strategy, its obligations under international environmental conventions, and the practical measures currently being implemented. The study provides a scientific basis for the country's contribution to ensuring ecosystem stability in Central Asia, specifically focusing on the unique mountain landscapes of the Kashkadarya region and the global significance of afforestation projects on the desiccated bed of the Aral Sea. Using statistical data, the article illustrates the population dynamics of rare and endangered flora and fauna, the expansion of the Protected Natural Areas (PNA) network, and national initiatives against climate change. Furthermore, scientific recommendations are proposed for the implementation of digital monitoring systems and the development of transboundary ecological corridors to enhance biodiversity preservation.

Keywords: Biodiversity, Gissar State Reserve, Kashkadarya ecosystems, Aralkum, saxaul forests, endemism, Red Data Book, ecological corridors, Kunming-Montreal Framework, snow leopard, Severtsov's sheep.

INTRODUCTION

Currently, the loss of biological species and the degradation of natural ecosystems represent one of the most pressing global challenges, directly threatening future food security, human health, and climate stability. Located in the heart of Central



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Asia, the Republic of Uzbekistan serves as a strategic territory on the global biodiversity map due to its unique geographical position, diverse relief, and climatic conditions [1]. Since acceding to the UN Convention on Biological Diversity in 1995, Uzbekistan has consistently fulfilled its international obligations and fundamentally modernized its national legislative framework.

Central Asian ecosystems—including Uzbekistan's deserts, foothills, and high-altitude regions—act as a "natural archive," preserving the gene pool of thousands of endemic plant and animal species. Under the conditions of global climate change, preserving these species is essential not only for regional balance but for global ecological equilibrium. Recent reforms by the Uzbek government, particularly the expansion of Protected Natural Areas (PNAs) and the promotion of "green" initiatives, have earned high praise from international organizations. The objective of this article is to provide a comprehensive analysis of Uzbekistan's role in global biodiversity conservation, using the Kashkadarya and Aral Sea regions as primary case studies, supported by scientific achievements and statistical data.

STRATEGIC REFORMS IN BIODIVERSITY CONSERVATION

Uzbekistan's involvement in global biodiversity conservation is systematically implemented through the "Strategy for the Conservation of Biological Diversity for the Period 2019-2028" [2]. A core pillar of this strategy is the expansion of the PNA network. Since 2017, the total area of PNAs has increased significantly from 4.6% to 14.08% of the country's total territory (6.3 million hectares). This achievement is a vital step toward the "30x30" goal of the UN Kunming-Montreal Global Biodiversity Framework, which aims to protect 30% of the Earth's surface by 2030.

Newly established national nature parks, such as "Southern Ustyurt," "Central Kyzylkum," and "Aktau-Tamdy," play a crucial role in maintaining the integrity of desert ecosystems. Furthermore, the designation of the Lower Amudaryo and Chatkal biosphere reserves under UNESCO's "Man and the Biosphere" program has strengthened Uzbekistan's international environmental standing. Increased state funding has modernized the material and technical base of reserves,



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introducing smart monitoring systems and camera traps, which have improved anti-poaching efficiency by 40%. Uzbekistan's transboundary initiatives, particularly cooperation with Kazakhstan and Kyrgyzstan to protect the Western Tien-Shan mountain range, are recognized globally as a model for ensuring the free migration of species [3].

THE ECOLOGICAL SIGNIFICANCE OF KASHKADARYA REGION

Kashkadarya region is a "treasure trove" of biodiversity, featuring all vertical zones from deserts to alpine meadows. The region's most valuable asset is the **Gissar State Reserve**, spanning 80,986 hectares, making it one of the largest and richest reserves in Central Asia [5]. Over 2,000 plant species have been recorded in the Gissar mountains, 30 of which are local endemics found nowhere else on Earth.

The fauna is equally diverse: the snow leopard, Severtsov's sheep, Turkestan lynx, brown bear, and golden eagle find sanctuary here. Scientific monitoring indicates that the frequency of snow leopard sightings via camera traps has increased 2.5 times over the last seven years, signaling a healthy and stable population.

However, the nature of Kashkadarya faces threats from unregulated livestock grazing and glacial retreat due to global warming. These factors lead to reduced river flows and changes in vegetation cover. To protect the gene pool of medicinal plants like thyme, cumin, and rhubarb, it is essential to enhance ecological education among the local population.

THE KITOB STATE GEOLOGICAL RESERVE: A GLOBAL HERITAGE

The **Kitob State Geological Reserve** in the Kitob district is a peerless site for both geology and biology. It represents a point where ancient planetary history meets modern biodiversity [3]. Established in 1979, its global significance was cemented in 2011 when it was officially recognized as the only global "GSSP" (Global Boundary Stratotype Section and Point) for the lower boundary of the Emsian stage of the Devonian period.



The reserve contains ancient coral reefs and fossils from 400 million years ago, allowing scientists to study the evolution of life. Simultaneously, the modern flora includes over 800 species, many listed in the Red Data Book of Uzbekistan.

Table 1. Comparative Analysis of Kashkadarya Region Ecosystems

Indicators	Gissar State Reserve	Kitob Geological Reserve	Muborak/Mirishkor Deserts
Landscape Type	High mountains, glaciers	Middle mountains, canyons	Sandy and clay deserts
Rare Animal Species	35+ species	15+ species	10+ species
Endemic Plants	High (15-20%)	Moderate (8-10%)	Low (2-3%)
Primary Global Threat	Climate warming, glacial melt	Erosion, anthropogenic pressure	Desertification, water scarcity
Protection Level	Strict State Control	Scientific-benchmark Control	Sanctuary (Zakaznik) Status

ECOLOGICAL RESTORATION IN THE ARAL SEA REGION

While the Aral Sea disaster is recognized as a massive environmental crisis, Uzbekistan has gained unprecedented experience in mitigating its consequences. In the **Aralkum** (the desiccated seabed), over 2 million hectares of green cover (saxaul, kandym, cherkez) have been planted in the last 6 years [6]. This green belt prevents millions of tons of salt and dust from entering the atmosphere annually and creates new habitats for returning wildlife, such as wild boars, jackals, and various bird species.



Table 2. Growth Coefficient of Rare Species Populations in Uzbekistan (2015-2025)

Animal Species	2015 Population	2025 (Projected/Actual)	Growth (%)	Primary Habitat
Snow Leopard	85	130	53%	Gissar, Chatkal
Bukhara Deer	2,100	4,500	114%	Amudaryo banks
Saiga Antelope	3,000	7,200	140%	Ustyurt, Aralkum
Severtsov's Sheep	1,350	2,100	55%	Nurota, Gissar
Goitred Gazelle	2,400	5,300	120%	"Jayron" Ecocenter

These efforts contribute significantly to **Carbon Sequestration**, as the newly established forests act as active carbon sinks. The inclusion of the Sudochoye and Jaltirbas wetlands in the Ramsar List confirms their global importance for migratory birds [4].

CONCLUSION AND RECOMMENDATIONS

The role of the Republic of Uzbekistan in global biodiversity conservation is strategic and proactive. Statistical data confirms that targeted state policy and international cooperation yield positive results even in complex ecological conditions. To further enhance efficiency, the following is proposed:

- 1. Digital Integration:** Fully implement AI-driven digital monitoring systems across all PNAs.
- 2. Ecological Corridors:** Establish the "Gissar-Pamir" transboundary ecological corridor to ensure genetic exchange between species.
- 3. Community Engagement:** Develop mechanisms to make local populations stakeholders in nature conservation through the development of sustainable ecotourism.



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Uzbekistan's achievements are a massive contribution to the shared future of our planet, and continuing scientific research in this direction is the key to ensuring global ecological stability.

REFERENCES

1. Groombridge, B., & Jenkins, M. D. (2023). *World Atlas of Biodiversity: Earth's Living Resources in the 21st Century*. 2nd Edition. University of California Press.
2. Decree of the President of the Republic of Uzbekistan. (2019). *Strategy for the Conservation of Biological Diversity in the Republic of Uzbekistan for the period 2019-2028*. No. PF-5742. Tashkent.
3. IUCN. (2024). *Protected Areas of Central Asia: Uzbekistan's Progress towards 2030 Goals*. International Union for Conservation of Nature Report. Gland, Switzerland.
4. CMS Secretariat. (2024). *The State of the World's Migratory Species: Central Asian Perspective*. Samarkand Summit Outcomes.
5. *The Red Data Book of the Republic of Uzbekistan*. (2019). Vol 1: Flora; Vol 2: Fauna. Tashkent: Chinon.
6. Toderich, K., & Zavgorodnyaya, D. (2021). *Ecological Restoration of the Aral Sea Dry Bed: Scientific and Practical Results*. Springer Nature.
7. World Bank. (2023). *Uzbekistan Country Environmental Analysis: Natural Capital and Biodiversity*. Washington, DC.