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Wildlife and Fauna of Bangladesh

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Introduction

Bangladesh, nestled in the heart of South Asia and shaped by the fabled Ganges and Brahmaputra rivers, boasts a remarkable natural heritage that is at once ancient, diverse, and vibrant. Blessed with a unique geography—from the world's largest deltaic plain to the lush forests of the Chittagong Hill Tracts—the nation's subtropical climate and varied ecological zones have given rise to an exceptional array of flora and fauna. Its rich biodiversity encompasses dense mangrove forests, winding rivers, sprawling wetlands, coastal ecosystems, and hilly terrains, each acting as a haven for distinctive and often rare species.

Estimates point to a truly impressive array of wildlife: over 1,600 vertebrate species and around 1,000 to 1,952 invertebrate species, depending on the source. Among these are nearly 700 types of birds, myriad fishes—including freshwater, brackish, and marine species—a suite of mammals ranging from the iconic Bengal tiger to the endangered Asian elephant, and a host of reptiles, amphibians, and insects. Whether one explores the mysterious Sundarbans in search of tigers and crocodiles or visits the haor wetlands thronged by migratory birds, it is clear that Bangladesh's ecological wealth is both a national treasure and a crucial part of the global biodiversity mosaic.

Yet, beneath this vibrant tableaux lies an urgent reality. Bangladesh's wildlife faces unprecedented pressures—habitat loss through deforestation and wetland drainage, expanding urban and agricultural frontiers, pollution, poaching, illegal wildlife trafficking, and the rapidly intensifying consequences of climate change. The fragile balance of its ecosystems is threatened by both human intervention and natural disasters, leading to the alarming decline and, in some cases, regional extinction of numerous species. Iconic animals such as the greater one-horned rhinoceros and Indian wolf have disappeared, while many more, like the Bengal tiger and Ganges river dolphin, teeter on the brink.

Conservation efforts have galvanized in response, with the government and non-governmental organizations establishing protected areas, recognizing Ecologically Critical Areas, and promoting sustainable management and local community involvement. Bangladesh's commitment is evident in its network of national parks and wildlife sanctuaries, its alignment with international environmental conventions, and the enactment of laws to safeguard its natural resources. Still, the challenges of enforcement, resource allocation, and raising public awareness persist, demanding a sustained and integrated approach.

This book, "Wildlife and Fauna of Bangladesh: A Guide to the Wildlife and Fauna of Bangladesh," strives to offer a comprehensive exploration of this extraordinary natural

legacy. It examines the geography and habitats that define the nation, profiles its diverse animal groups, assesses the major threats they face, and documents the ongoing struggles and successes in conservation. Each chapter is designed to enrich understanding, inspire stewardship, and underscore the urgent need to protect Bangladesh's irreplaceable natural heritage.

By illuminating not only the marvels but also the vulnerabilities of Bangladesh's wildlife, this guide seeks to foster a deeper appreciation and a collective sense of responsibility. The fate of the country's extraordinary fauna and the ecosystems they inhabit ultimately rests in our hands—a testament to both the beauty of nature and the profound challenge of preserving it for future generations.

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CHAPTER ONE: The Geography and Climate of Bangladesh

Nestled in the northeastern corner of South Asia, Bangladesh occupies a unique and often challenging position on the world's map. Imagine a land sculpted by water, born from the immense power of some of the world's mightiest rivers. This is Bangladesh, a country primarily defined by its location on the vast delta formed by the confluence of the Ganges (locally known as the Padma), Brahmaputra (Jamuna), and Meghna rivers. This deltaic plain, sprawling and largely flat, makes up the majority of the country's 147,570 to 148,460 square kilometers. Bordered by India to the west, north, and east, Myanmar to the southeast, and the mighty Bay of Bengal to the south, Bangladesh is intrinsically linked to the rhythms of these major water bodies and the influences that shape them, stretching back to the imposing Himalayas in the north.

The topography of Bangladesh is, for the most part, a study in flatness. About 80% of the landmass is composed of fertile alluvial lowland, aptly named the Bangladesh Plain. This plain, part of the larger Plain of Bengal, rarely rises more than 10 meters above sea level, and in the coastal south, elevations are often at sea level. This low elevation, while contributing to incredibly fertile soils, also leaves the country remarkably vulnerable to the whims of water, a theme we will revisit often. While flatness is the dominant feature, Bangladesh isn't entirely without elevation. There are slightly uplifted areas, often referred to as uplifted blocks, including the Madhupur and Barind Tracts, which account for about 9 percent of the land. The most significant hilly areas are found in the southeastern part of the country, the Chittagong Hill Tracts, which are the western extension of the north-south mountain ranges of Myanmar and eastern India. These hills rise steeply, with altitudes generally ranging from 600 to 900 meters above sea level, though the highest point in the country, Saka Haphong, is located here at an elevation of 1,064 meters. The northeast, in the Sylhet region, also features some lower hills.

The lifeblood of Bangladesh flows through its intricate network of rivers. The country is famously riverine, crisscrossed by innumerable rivers, rivulets, and their tributaries, estimated to be around 700 in total. These rivers are not just geographical features; they are integral to the landscape, the climate, and the very existence of the country's ecosystems and the wildlife they support. The three principal river systems are the Ganges-Padma, the Brahmaputra-Jamuna, and the Meghna. The Ganges enters Bangladesh from the west and becomes the Padma, while the Brahmaputra flows in from the north, known as the Jamuna. These two mighty rivers eventually converge, and their combined waters then join with the Meghna, which itself is formed by rivers originating in the hilly regions of eastern India, before emptying into the Bay of Bengal.

through a vast estuarine system.

The sheer volume of water carried by these rivers is staggering, particularly during the monsoon season when they are fed by rainfall and snowmelt from the Himalayas. This influx of water deposits enormous amounts of silt, which over millennia has built the fertile deltaic plain. The rivers are dynamic, constantly shifting their courses, particularly the upper Padma, whose main channel can change every few years. This natural process creates temporary islands of highly fertile land, known as "chars," which, while agriculturally valuable, have historically been sources of conflict over ownership. The river systems also include important rivers in the Chittagong Hill Tracts, such as the Karnaphuli, Feni, Sangu, and Matamuhari, which flow into the Bay of Bengal. The Karnaphuli is notable as it is dammed at Kaptai, forming the largest artificial lake in Bangladesh.

The climate of Bangladesh is characterized as a tropical monsoon climate, marked by significant seasonal variations in rainfall, temperature, and humidity. Straddling the Tropic of Cancer, the country experiences high temperatures and humidity throughout much of the year. According to the Bangladesh Meteorological Department, there are typically six seasons, though they are often broadly categorized into three main periods: a mild, dry winter from December to February, a hot and humid pre-monsoon or summer season from March to May, and a warm, very wet monsoon or rainy season from June to October, followed by a shorter, pleasant autumn in October-November.

Winter offers a respite from the heat and humidity, with cooler temperatures, particularly in January, which is generally the coldest month with average temperatures around 10°C in some areas. However, this season is also the driest, receiving only a small percentage of the total annual rainfall. As the year progresses, temperatures begin to rise, leading into the hot summer months, with April often being the warmest month and maximum temperatures potentially reaching between 38°C and 41°C. This pre-monsoon period can also see the arrival of Nor'westers, localized thunderstorms that bring some relief from the heat before the main monsoon season.

The monsoon season, driven by the southwest monsoon winds originating over the Indian Ocean and the Bay of Bengal, is the most dominant climatic feature and defines the agricultural and ecological calendar of Bangladesh. This period, typically from June to October, brings the vast majority of the country's annual rainfall, often accounting for 75-80%. Rainfall amounts vary across the country, but most regions receive at least 2,000 mm per year, with the northeastern region of Sylhet, situated south of the Himalayan foothills, receiving the highest average precipitation, sometimes exceeding 4,000 mm or even 5,000 mm annually. The sheer volume of rain during this period is immense and contributes significantly to the flooding that is a regular occurrence.

The low-lying geography, combined with the heavy monsoon rainfall and the

enormous discharge from the major river systems, makes Bangladesh one of the most flood-prone countries in the world. Flooding is a predominant physical feature, with an average of 20-25% of the country flooded annually during the monsoon season. During severe flood events, this can increase dramatically, inundating as much as two-thirds of the country, as seen in particularly devastating floods in the past. While flooding can be destructive, it also plays a crucial role in replenishing the soil with fertile silt, a blessing for the predominantly agricultural economy. However, the increasing intensity and frequency of extreme flood events, partly attributed to climate change, pose significant challenges to both human populations and wildlife habitats.

Adding to the country's vulnerability are tropical cyclones, which frequently form in the Bay of Bengal, an ideal breeding ground for these powerful storms. The funnel shape of the northern Bay of Bengal exacerbates the impact of cyclones by amplifying storm surges, which are often the most destructive element, causing widespread flooding and devastation along the coastal belt. Cyclones typically occur in the pre-monsoon season (April-May) and the post-monsoon season (October-November). Bangladesh has a history of experiencing some of the deadliest tropical cyclones on record, with immense loss of life and widespread damage to infrastructure, crops, and, of course, wildlife and their habitats. While early warning systems and cyclone shelters have been developed, the low-lying coastal topography remains highly susceptible.

The soils of Bangladesh are largely a product of its riverine geography and alluvial deposition. There are three main categories: the fertile recent alluvial soils found primarily in flooded areas, which are typically clays and loams but deficient in certain nutrients; the older alluvial soils, like those in the Madhupur and Barind Tracts, which are darker, iron-rich clays; and the hill soils, derived from sandstone and shale. The rich alluvial soils, constantly replenished by the rivers, are fundamental to the agricultural productivity that sustains the large human population, but also form the substrate for many of the country's vital ecosystems, from wetlands to forests.

In essence, the geography and climate of Bangladesh create a dynamic and often unpredictable environment. The interplay of the vast river systems, the predominantly flat deltaic plain, the tropical monsoon climate with its heavy rainfall and distinct seasons, and the vulnerability to natural disasters like floods and cyclones, all combine to shape the diverse habitats where Bangladesh's remarkable wildlife lives. Understanding this fundamental environmental context is key to appreciating the challenges and adaptations of the fauna that call this vibrant, water-dominated land their home.

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