Native Plants of Mauritania

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Introduction

Mauritania, a nation situated in Northwest Africa, presents a landscape predominantly defined by arid and semi-arid environments. Bordered by the vast Sahara Desert to the north and east, the Sahelian zone to the south, the Senegal River to the southwest, and the Atlantic Ocean to the west, the country encompasses diverse ecological zones despite its overwhelming aridity. Approximately three-quarters of Mauritania is classified as desert or semi-desert, making its landscapes appear at first

glance to be barren and inhospitable. However, these environments support a surprising array of plant species—each uniquely adapted to endure the country's extreme conditions—contributing vitally to the ecological balance, the economy, and the cultural identity of Mauritania.

The geography and climate of Mauritania have been the primary architects of its flora. Vast, open plains and plateaus, sporadically interrupted by ridges and massifs, form the backbone of Mauritania's topography. The ever-present challenge for plant life here is water scarcity, with rainfall confined to a brief season and varying dramatically between the southern reaches and the hyper-arid north. Nonetheless, the interplay between aridity, temperature, and the sporadic availability of water has forged landscapes that range from the near lifeless expanses of the Sahara to verdant river valleys and coastal wetlands.

Within these contrasting ecological zones—stretching from arid deserts and transitional Sahelian grasslands to the Senegal River's fertile floodplains and the unique ecosystems of the Atlantic coastline—a rich diversity of native plants has evolved. Mauritania boasts over 1,100 recorded vascular plant species and an estimated 2,300 plant species in total. These species are intimately tied to their environments, with specialized adaptations such as deep and wide root systems, salt tolerance, water storage tissues, and resilient life cycles that ensure survival against the odds.

The native plants of Mauritania are not merely ecological curiosities; they are integral to every facet of life in the country. From providing essential grazing for livestock and the basis for agricultural systems to offering food, shelter, and materials to local communities, these plants sustain both people and wildlife. Traditional knowledge regarding the uses of these plants—particularly medicinal applications—remains deeply embedded in Mauritanian culture and continues to be passed down through generations. The bonds between people and plants underscore the profound cultural, spiritual, and practical significance of native flora.

Yet, this rich plant heritage faces mounting threats. The increasing pressure from agricultural expansion, overgrazing, deforestation, and the inexorable advance of desertification all put native species at risk. Climate change further exacerbates these challenges, bringing shifting rainfall patterns and higher temperatures. The loss of plant cover strips the land of its natural resilience, endangering both people and ecosystems.

Recognizing the vital importance of its native flora, Mauritania has begun to implement a range of conservation strategies—from creating protected areas and supporting reforestation efforts to participation in the Great Green Wall initiative and embracing community-based stewardship of the land. As this guide will show, the future of Mauritania's people, landscapes, and rich biodiversity is inextricably linked to

the survival and sustainable management of its native plants. This book aims to illuminate the extraordinary variety, importance, and resilience of the native plants of Mauritania and underscore the urgency of conserving this natural heritage for generations to come.

CHAPTER ONE: Geography and Climate of Mauritania

Mauritania occupies a significant portion of Northwest Africa, a land where the immense Sahara Desert dictates much of the narrative. Situated strategically on the continent's Atlantic coast, it serves as a bridge between the Maghreb region to the north and the vast expanse of sub-Saharan Africa to the south. Its neighbors are as varied as its landscapes: Western Sahara to the north and northwest, Algeria to the northeast, Mali to the east and southeast, and Senegal to the southwest. This position places Mauritania squarely in a transitional zone, experiencing influences from both the hyper-arid Sahara and the semi-arid Sahel.

The country boasts an Atlantic coastline stretching for over 700 kilometers, a dynamic interface where desert sands meet the ocean. While the majority of Mauritania is defined by its dryness, this coastal strip offers a stark contrast, tempered by oceanic influences. The border with Senegal to the southwest is largely defined by the Senegal River, a vital waterway that brings a ribbon of life to the arid surroundings. To the east and north, the landscape merges with the vast, empty quarter of the Sahara.

Broadly speaking, Mauritania's topography is characterized by its remarkable flatness. It's a country of vast, arid plains that seem to stretch on forever under the relentless sun. This general flatness is occasionally interrupted by a series of escarpments and plateaus, particularly in the central and northern regions. These elevated areas break the monotony of the plains and create localized variations in the environment.

One of the most notable of these elevated features is the Adrar Plateau in the central part of the country. This sandstone plateau rises to elevations of around 500 meters and is characterized by rocky landscapes, deep canyons, and ancient geological formations. At the foot of some of the scarps associated with these plateaus, one can find spring-fed oases, precious pockets of water that have sustained human settlements and vegetation for centuries.

Further north, the landscape includes isolated peaks and massifs. The most prominent of these, and indeed the highest point in the entire country, is Kediet ej Jill. Located near the city of Zouîrât, this mountain reaches a height of 915 meters (3,002 feet). Interestingly, Kediet ej Jill is also known for its rich iron ore deposits, which give the mountain a bluish appearance due to the high concentration of magnetite. These

geological features add a dramatic element to the otherwise flat surroundings.

The overwhelming defining characteristic of Mauritania's climate is its aridity. The vast majority of the country falls within the Sahara Desert or the semi-arid Sahel zone, meaning that water is a precious and scarce resource. Temperatures are typically high throughout the year, though they can vary significantly between day and night, especially in the desert interior.

The climate is heavily influenced by prevailing wind patterns. The northeastern trade winds blow consistently, particularly in the northern parts of the country, contributing to the pervasive dryness. Adding to this is the Harmattan, a hot, dry, and often dust-laden wind that originates in the Sahara. The Harmattan is a dominant force during the long dry season, which typically runs from late November to mid-March, and can significantly reduce visibility with its cargo of sand and dust.

Rainfall is the single most limiting factor for plant life across much of Mauritania. The country experiences a short rainy season, locally known as the *hivernage*, which generally occurs from July to September. However, the amount of precipitation received varies dramatically from south to north.

In the far south, particularly along the Senegal River valley, annual precipitation can range from 500 to 600 millimeters. This is enough to support denser vegetation and agricultural activities, creating a lifeline in an otherwise arid region. As one moves northward, the rainfall amounts drop sharply, with the northern two-thirds of the country receiving less than 100 millimeters annually. In many desert areas, years can pass without any significant rainfall at all.

This extreme aridity and the sporadic nature of rainfall have profound consequences for the landscape and its ability to support plant life. The lack of consistent water shapes the very appearance of the land, leading to vast stretches of sand dunes (ergs) and stony or gravelly plains (regs). The distribution and type of vegetation are directly tied to the availability of water, following the rainfall patterns across the country.

The challenging climate, particularly the recurring droughts since the mid-1960s, has also contributed to the expansion of the desert. This desertification process poses a significant threat to existing vegetation and the delicate ecosystems that depend on it. The shifting sands, driven by the persistent winds, can encroach upon areas that were previously more vegetated.

Even the coastal zone, while influenced by the Atlantic, experiences minimal rainfall, particularly in the north. In places like Nouadhibou, annual precipitation averages less than three centimeters. However, the oceanic trade winds do moderate temperatures along the narrow coastal strip, creating a more temperate, albeit still dry, climate compared to the scorching interior. This interplay of oceanic and continental

influences creates unique conditions for the plants found in this zone.

The Senegal River, forming a significant portion of the southern border, stands in stark contrast to the prevailing aridity. This river system provides a more reliable water source, supporting different plant communities than those found in the drier regions. Its valley, often referred to as the Chemama, is historically the most fertile area, crucial for agriculture and offering a different set of environmental conditions for native flora.

Diurnal temperature variations can be extreme, particularly in the Saharan zone. During the cooler months of December and January, temperatures in the Sahara can plummet from a daytime high of 38°C to near freezing at night. In the hotter months of May, June, and July, temperatures can soar past 49°C during the day before dropping to a still warm 16°C at night. These wide swings require plants to be exceptionally resilient.

The Sahelian zone, situated between the hyper-arid Sahara and the Senegal River Valley, experiences temperature extremes that are less pronounced than in the deep desert, but daily variations are still significant, ranging from 16 to 21°C. This transitional zone receives more rainfall than the Sahara, supporting steppes and savanna grasslands. The timing of the rainy season is critical here, with delays potentially causing hardship for communities reliant on agriculture and herding.

The physical geography of vast plains and plateaus, coupled with the harsh, predominantly arid climate characterized by extreme temperatures, scarce rainfall, and persistent winds, creates a challenging environment. Yet, it is precisely these conditions that have shaped the remarkable and resilient native plant life of Mauritania. The flora here is a testament to nature's ability to adapt and survive in even the most unforgiving landscapes.
