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Floristic Survey of Roodbast Wetland in Babolsar County- Mazandaran Province

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Introduction

The accessibility of plant species data empowers researchers, conservationists, and land managers with the tools they need for informed decision-making. Such knowledge forms the bedrock for formulating region-specific strategies, harnessing the potential of the wetland's vegetative resources, and optimizing its ecological functions. This reservoir of information not only enriches our comprehension of the wetland's present state but also serves as a compass guiding us towards its holistic enhancement. The Roodbast wetland in Mazandaran Province plays a pivotal role as an agricultural water source and a wintering refuge for migratory birds. Assessing the floristic composition and plant diversity within wetland ecosystems serves as a fundamental indicator for monitoring environmental fluctuations.

Material and Methods

The study area encompasses the Roodbast wetland, an ecological site covering an approximate area of 130 hectares with an average depth of 2 meters. Located at a geographical position of approximately 36° 40′ north latitude and 52° 35′ east longitude, this wetland is situated amidst agricultural landscapes. Its elevation relative to sea level is approximately -22 meters. Geographically, the Roodbast wetland resides in a coastal plain characterized by relatively even topography, devoid of prominent topographic features.

Data collection took place during the spring and summer seasons. Voucher specimens have been archived at the Mazandaran University Herbarium (MUH). Plant nomenclature for Angiosperms followed the guidelines set forth by Rechinger (1963-1998) and Assadi et al. (1988). Nomenclature standardization was accomplished using the U.taxostand package within the R software,

referencing the World Flora Online. Life forms were classified according to Raunkiaer's classification (Raunkiaer 1934). The terminology and delimitation of the phytochoria are grounded in established classical works, notably the contributions of Zohary (1973) and Takhtajan (1986).

Result and Discussion

A total of 153 species of vascular plants, distributed across 123 genera and 47 families, have been identified within the Roodbast wetland. Among these, *Poaceae* stands out with 16 species (10.46%), followed by *Asteraceae* with 15 species (9.8%), making them the most prominent plant families. The most abundant species in the *Poaceae* family is *Phragmites australis*, which is present in most areas surrounding. It has the capability to absorb pollutants and can thrive in contaminated environments. Furthermore, it offers a conducive habitat for the reproduction of migratory birds within the wetland, and alterations in the density of these plant species have a profound impact on the well-being of these avian inhabitants. The prevalence of *Asteraceae* species in this area serves as a compelling indicator of the environmental impact of human activities. It signifies that the expansive agricultural lands surrounding the wetland contribute to the proliferation of diverse plant species within this botanical family.

The prevailing life form is Therophyte, while the dominant chorotype consists of pluriregional elements. Human activities and soil interventions are key factors exerting a significant influence on the prevalence of Therophytes within the studied habitats. It's noteworthy that Therophytes typically dominate wetland areas throughout northern Iran, constituting the highest proportion. Plants thriving in moist and perturbed ecosystems frequently exhibit extensive global distribution patterns. Consequently, a substantial proportion of species consists of pluriregional.

In terms of habitat distribution, the majority consists of hygrophyte species (43.8 percent), followed closely by marginal species (38.6 percent). Notably, dense communities of *Schoenoplectus lacustris* have been observed along the water's edge and within the Roodbast wetland. In the western sections of the wetland, a community of *Bolboschoenus maritimus* thrives. Additionally, aquatic plants such as *Sparganium erectum*, *Iris pseudacorus*, and two species of *Typha* are scattered along the inner margins and channels of the wetland.

The growth of these plant species during the summer season, along the margins and canals of the wetland, has the potential to increase nitrate levels. This phenomenon can be attributed to the utilization of chemical fertilizers by farmers in the paddy fields surrounding the wetland. Submerged aquatic vegetation, comprising species such as *Chara*, *Batrachium trichophyllum*, *Ceratophyllum demersum*, *Myriophyllum spicatum*, and *Potamogeton* spp., collectively form extensive communities within the wetland ecosystem, predominantly inhabiting its interior and benthic zones. These aquatic plants not only serve as a vital food source for the wetland's fish populations but also create a conducive environment for fish reproduction. However, the

introduction of the non-native *Azolla filiculoide* via channels connecting the wetland to adjacent agricultural areas has had detrimental effects, leading to irreversible disruptions in plant species diversity and density within specific wetland sectors.

Conclusions

The identification of regional plant species holds crucial significance, providing quick access to specific plants in a given area and timeframe. This process aids in evaluating the region's vegetative potential, fostering species density. Recognizing resilient and threatened species is vital for conservation efforts and vegetation mapping. The study's results go beyond enumeration, offering implications for ecological understanding and conservation strategies. By cataloging the diverse plant species in this wetland ecosystem, we gain insights into its richness, enabling informed management and sustainable development.

Keywords: Wetland, biodiversity, biological indicators, flora, Mazandaran.