

صفاء أبو السعود محمد



شبكة المعلومات الجامعية

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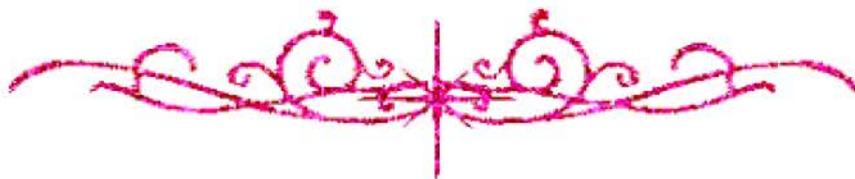
صفاء أبو السعود محمد



شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



صفاء أبو السعود محمد



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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بالرسالة صفحات لم ترد بالأصل



**SPECIES RICHNESS AND
DIVERSITY IN THE VEGETATION
OF THE WESTERN
MEDITERRANEAN COASTAL
DESERT OF EGYPT**

Thesis
Submitted to the Faculty of Science,
Alexandria University

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by

Amal Mohamed Fakhry Abdel-Salam

B.Sc. "in Botany 1983"
M.Sc. "in Botany 1989"

Supervised By

Prof. Dr.
M. A. Ayyad
Professor of Plant
Ecology

Prof. Dr.
R. M. El-Ghreeb
Professor of Plant
Ecology

Dr. S. M. O. El-Darier
Assistant Professor of Plant
Ecology

Alexandria University
Faculty of Science

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Dedication

I dedicate this work to my husband and my sons .

This thesis has not been previously submitted for a degree at this or any other university, and is the original work of the writer.

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INTRODUCTION

Diversity of ecological plant communities has never been more highly valued than it is now, as they become increasingly threatened by the environmental crisis. Students of ecological diversity realize that their work now has practical importance in addition to the academic interest it has always had. In fact there are three reasons why ecologists are interested in ecological diversity and its measurements. First, despite changing fashions and preoccupations, diversity has remained a central theme in ecology. The well documented patterns of spatial and temporal variations in diversity which intrigued the early investigators of the natural world (e.g. Clements, 1916) continue to stimulate the minds of ecologists today (Currie and Paquin, 1987; May, 1986). Second, measures of diversity are frequently seen as indicators of the well-being of ecological systems. Thirdly, considerable debate surrounds the measurement of diversity. It is important that ecologists should understand how to measure diversity and what they mean by it. Diversity lies at the root of some of the most fundamental and exciting questions in theoretical and applied ecology (Magurran 1988).

The site of the present study is the western Mediterranean coastal region of Egypt. It extends for about 500 km from Alexandria to Sallum. The area is bounded on the north by the Mediterranean sea and extends south for an average distance of about 50 km. Its vegetation represents the most important rangelands in Egypt in terms of productivity, and it is floristically one of the most rich of its phytogeographical regions. According to the "Students Flora of Egypt" (Täckholm, 1974) nearly 50% (about 1000 species) of the total number of species recorded in Egypt occur in this region. Of these, some 162 species are recorded as very rare and 243 species as rare. Most of these species are very restricted in their distribution and are obviously threatened. Some of these "threatened" species are mentioned as endangered in "The Egyptian Plant Red Data Book 1. Woody Perennials" (EL-Hadidi *et al.*, 1992). In fact, the ecosystems of the region have been subjected to

degradation and species impoverishment due to the irrational utilization of natural resources since the eleventh century, which must have had far-reaching impact on their biodiversity.

The major objective of the present study is to provide an overview of plant biodiversity status in the western Mediterranean desert of Egypt. The specific aims are:

- (a) to provide an overview of habitat and community diversity in the region;
- (b) to determine the species richness, evenness and dominance in different ecosystems in relation to the main habitat factors;
- (c) to evaluate the differences in taxonomic diversity between different communities;
- (d) to assess the changes in species diversity during ecological succession and its relation to ecosystem stability; and
- (e) to evaluate the impacts of different types of land use and human manipulations on species diversity.