

شبكة المعلومات الجامعية







شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها على هذه الأفلام قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار في درجة حرارة من ١٥-٥٠ مئوية ورطوبة نسبية من ٢٠-٠٠% To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%



بعض الوثائـــق الإصليــة تالفــة



بالرسالة صفحات لم ترد بالإصل



DETECTION OF SOIL DESERTIFICATION IN THE NORTHERN PART OF THE DELTA USING MULTITEMPORAL PROCESSING

By

Taher Abd El-Haq Nada

B.Sc. Agric. (Soils), Cairo Univ., 1970

M.Sc. Agric. (soils), Zagazig Univ. (Benha Branch), 1989

THESIS

Submitted in Partial Fulfillment for
The Requirements of the Degree of
DOCTOR OF PHILOSOPHY
IN AGRICULTURAL SCIENCE
(SOILS)

Dept. of Soil Science
Faculty of Agriculture, Moshtohor
Zagazig University
(Benha Branch)

. .

DETECTION OF SOIL DESERTIFICATION IN THE NORTHERN PART OF THE DELTA USING MULTITEMPORAL PROCESSING

By

Taher Abd El-Haq Nada
B.Sc. Agric. (Soils), Cairo Univ., 1970
M.Sc. Agric. (soils), Zagazig Univ.
(Benha Branch), 1989

Under the Supervision of;

P. S. ally

Prof. Dr. Raafat Sorour Abd El Aal

Professor of soil

Department of soil, fac. Agric., Moshtohor,

Zagazig Univ., Benha Branch,

Prof. Dr. Fahmy Mohamed Habib

Professor of soil

Department of soil, fac. Agric., Moshtohor, Zagazig Univ., Benha Branch.

Approval Sheet

DETECTION OF SOIL DESERTIFICATION IN THE NORTHERN PART OF THE DELTA USING MULTITEMPORAL PROCESSING

By

Taher Abd El-Haq Nada

B.Sc. Agric. (Soils), Cairo Univ., 1970

M.Sc. Agric. (Soils), Zagazig Univ. (Benha Branch), 1989

This thesis for Ph.D. degree has been approved by:

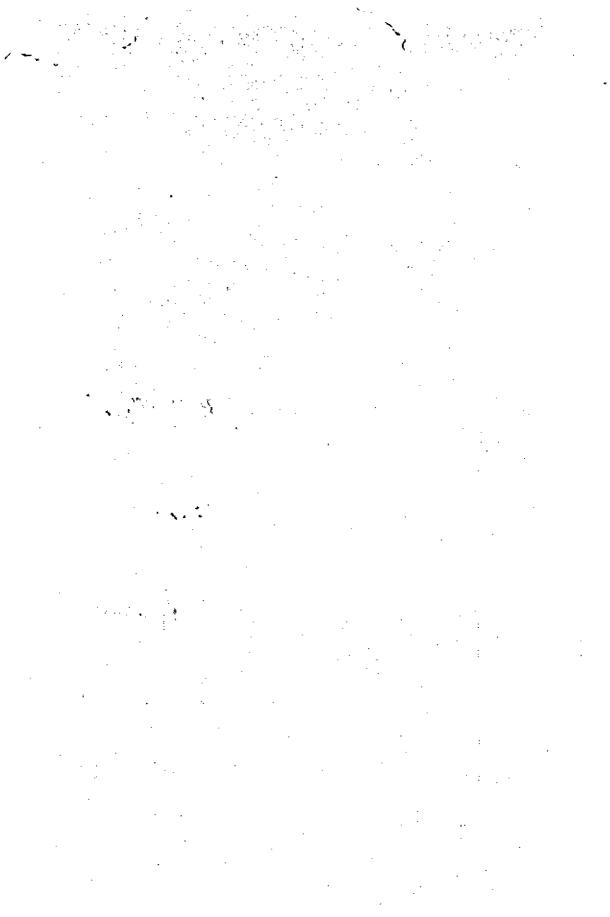
Prof. Dr. Raafat Sorour Abd El Aal
Professor of Soil Sci.
Department of Soil, Fac. Agric., Moshtohor
Zagazig Univ., Benha Branch.

Prof. Dr. Sayed Abd El Qaader Ibrahim S. A. Kasker
Professor of Soil Sci., Head of Soil Department.
Fac. Agric., Moshtohor
Zagazig Univ., Benha Branch.

Prof. Dr. Ibrahim Fawzy Rashaad D. F. Rashael
Professor of Soil Sic.
Soil, Water and Environment Research Institute,
Agric. Research center.

Prof. Dr. Fahmy Mohamed Habib
Professor of Soil Sci.
Department of Soil, Fac. Agric., Moshtohor
Zagazig Univ., Benha Branch.

Date of Examination: 4/9/2001



ACKNOWLEDGEMENT

The author would like to express his deep appreciation and sincere gratitude to Prof. Dr. R.S. Abd El-Aal professor of Soil Science, Faculty Of Agriculture at Moshtohor and Prof. Dr. F.M. Habib professor of Soil Science, Faculty Of Agriculture at Moshtohor for their supervision, sincere guidance, and continuous encoueagrment during the course of study.

The author likes also to thank **Prof. Dr. F.M. Hawela**, Prof. of Soil Science, Soil, Water and Environment Research Institute for his supervision and continuous help and **Dr. A.A. El-Sherief** Prof. Assistant Soil Science, Soil, Water and Environment Research Institute for his helpful guidance during material and methods till the results and discussion.



CONTE	NTS
-------	-----

,

		Page
1.	INTRODUCTION	1
2.	REVIEW OF LITERATURE	3
2.1.	Physiographic features of the study area	3 3 3 7
2.1.1.	Location	3
2.1.2.	Climate	3
2.1.3.	Topography	7
2.1.4.	Geology and Geomorphology	8
2.1.5.	Hydrology	10
2.2.	Definition of desertification	12
2.3.	Desertification processes	14
2.3.1.	Salinization	15
2.3.2.	Water loggin	17
2.3.3.	Urbanization	18
2.3.4.	Shoreline erosion	19
3.	MATERIALS AND METHODS	25
3.1.	Field work	25
3.2.	Laboratory analysis	26
3.3.	Maps, images and determination of distances	27
4.	RESULTS AND DISCUSSIONS	29
4.1.	Soils of the studied area	29
4.2.	Desertification process	30
4.2.1.	Salinization process	30
4.2.2.	Alkali process	35
4.2.3.	Water logging	54
4.3.	Assessment of determinative desertification	
	processes	55
4.3.1.	Salinization	55
4.3.2.	Assessement of water logging	57
4.4.	Urbanization process	60
4.5.	Enconomical evaluation	71

. . .