Faculty of Science

Studies on Algae and Water Quality of Ismailia Canal, Egypt

In Partial Fulfillment for the Requirements of the degree of

M.Sc. in Botany (Phycology)

Submitted to

Faculty of Science-Ain Shams University

By

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Acknowledgement

*First, all thanks are due to **Allah** for granting me the ability and power to complete this work, and without his will and help nothing could be accomplished. Second, my deepest thanks are to the reason for my being in life, **my parents**, peace be upon their souls.*

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Finally, I would like to end with a quote by John F. Kennedy "We must find the time to stop and thank the people who make a difference in our lives".

Ahmed Yusuf

Dedication

To the soul of my mother:

Mrs. Shadia Fouad El-Wakeel

(1954 - 2017)

May Allah bless your kind soul and have mercy and peace on you

Your son,

Ahmed

Approval Sheet

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Declaration

This thesis has not been previously submitted for any degree at this or any other university.

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Abstract

Ismailia Canal is one of the main artificial branches of River Nile in Egypt, it is the most important one as a source of water supply for several governorates in the east of Nile Delta. In this study, phytoplankton composition and some physico- chemical parameters have been studied in twelve points along the main route of Ismailia canal between Cairo and Ismailia governorates to follow up changes in the water quality of the canal. Samples have been collected monthly in the period from February 2015 to January 2016. A total of 143 phytoplankton taxa related to 55 genera were identified related to six algal divisions namely; Chlorophyta (69 taxa), Bacillariophyta (51 taxa), Cyanophyta (18 taxa), Euglenophyta and Dinophyta (each represented by 2 taxa) and finally Xanthophyta represented by one taxon. Quantitatively, Bacillariophyta was the most dominant division with algal density represented more than 86% of average total phytoplankton count. The highest phytoplankton density was recorded in winter, while the minimum

was recorded in summer. Water of Ismailia Canal was found to be slightly alkaline. Concentrations of nitrogen, phosphorus and silicate were found to be markedly affected by the water level of the canal along the year as well as the pollution runoff from ambient pollution sources. Phytoplankton composition of the canal also seems to be affected by pollutants especially at the far eastern part of the canal that located in Ismailia city. It's recommended that continuous studies must be carried out to follow up the changes in water quality of the canal.

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