ASSESSMENT OF SOME ANTHROPOGENIC ACTIVITIES ON BIODIVERSITY IN MOUNT SINAI, ST. KATHERINE PROTECTORATE

Submitted By

Mohamed Kamel Zakaria Kamel Hammouda

B.Sc. of Science, (Zoology), Faculty of Science, Suez Canal University, 2004

Master in Science (Zoology, Environmental Studies), Faculty of Science, Suez Canal University, 2011

A thesis submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Sciences

Department of Environmental Basic Sciences
Institute of Environmental Studies and Research
Ain Shams University

2017

APPROVAL SHEET

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This Thesis Towards A Doctor of Philosophy Degree in Environmental Sciences Has been Approved by:

Name **signature**

1- **Prof. Dr. Bahira Mahmoud El Sawaf**
Prof. of Entomology
Faculty of Science
Ain Shams University

2- **Prof. Dr. Magdi Shaaban Ali El Hawagry**
Prof. of Environment and Taxonomy
Faculty of Science
Cairo University

3- **Prof. Dr. Hala Abd El Hamid Mohamed Kassem**
Prof. of Medical Entomology, Department of Environmental Basic Sciences – Institute of Environmental Studies & Research
Ain Shams University

4- **Prof. Dr. Fayez Mohamed Mohamed Semida**
Prof. of Behavioral Ecology
Faculty of Science
Suez Canal University

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Under The Supervision of:

1-Prof. Dr. Hala Abd El Hamid Mohamed Kassem
Prof. of Medical Entomology, Department of Environmental Basic Sciences – Institute of Environmental Studies & Research
Ain Shams University

2-Prof. Dr. Fayez Mohamed Mohamed Semida
Prof. of Behavioral Ecology
Faculty of Science
Suez Canal University

3-Dr. Mohamed Metwally Sayed Moursy
Lecturer of Plant Ecology, Department of Botany and Microbiology
Faculty of Science
Al-Azhar University

2017

Acknowledgements

All thanks to Allah to whom I'm praying for enabling me to do and to finish successfully this work.

All thanks and appreciations are also due to ***Prof. Dr. Hala Abd El Hamid Mohamed Kassem***, Professor of Medical Entomology, Institute of Environmental Studies and Research, Ain Shams University, for her valuable advices, great support and constructive criticism during this work.

I wish to express my deepest thanks and gratitude to ***Prof. Fayez Mohamed Mohamed Semida***, Professor of Behavioral Ecology, Zoology Department, Faculty of Science, Suez Canal University, for his patient supervision, guidance, inspiration, encouragement, always giving support and for always keeping his door open.

Deep thanks are due to ***Dr. Mohamed Metwally Sayed Moursy*** for his help.

Deep thanks are due to ***Amy Shepherd***, Nottingham University for her help.

Deep thanks are due to the Saint Katherine Protectorate management and staff for their continues support.

I wish to extend my sincere thanks to all members and colleagues of Environmental Basic Sciences Department, Institute of Environmental Studies & Research, Ain Shams University, for the great support they offered during the practical work.

Dedication

It is my honor to dedicate this work to my father, my mother and my wife for giving me pure love and support without limitation.

Abstract

The current study aimed at assessing the impact of some anthropogenic activities along the touristic hiking trail passing through Mount Sinai area in St. Katherine protectorate (SKP) on biodiversity. The study also aimed at identifying and quantifying representative groups of vertebrate and invertebrate taxa within the study localities of Mount Sinai. The Nubian ibex *(Capra ibex nubiana)* was the only recorded wild herbivore species in Mount Sinai. Five reptiles' species, 11 pollinators' species, three gall-inducing species, nine ant species, and 39 plant species were recorded from the study localities in Mount Sinai. The current study showed that the hiking trail had a negative environmental impact on the vertebrate (large mammals and reptiles) and invertebrate (insect pollinators, gall inducing insects, and ants) taxa distribution within the study localities in Mount Sinai. Results also showed that hiking trail disturbance did not affect the surrounding plant assemblages within the study localities in Mount Sinai. The predicted distribution range of some reptiles, some insect pollinators, some gall-inducing insects and ant species were concentrated in the high mountainous region of SKP with different distribution range size of each group. The predicted distribution range for large herbivore *Capra ibex nubiana* and the ant species *Crematogaster aegyptiaca* covered the most parts of SKP. Based on the results, it is advisable to move the hiking trail to slopes of Mount Sinai away from its current location within the basins (Farshs). More studies are needed to assess the impact of hiking trails and associated human activities on other biodiversity elements in SKP.

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