



جامعة الإمارات العربية المتحدة
United Arab Emirates University

The College of Graduate Studies and the College of Science Cordially Invite You to a

Master Thesis Defense

Entitled

*THE EFFECTS OF SOCOTRA CORMORANT NESTING ACTIVITIES ON TERRESTRIAL
INVERTEBRATES DIVERSITY AND ABUNDANCE*

by

Hiba Obaid Darwish Alshehhi

Faculty Advisor

Dr. Sabir Bin Muzaffar, Department of Biology

College of Science

Date & Venue

02:00 PM

Tuesday, 16 April 2019

Room 132, F3 Building

Abstract

Seabirds breed on off-shore islands or cliffs often in large aggregations during their 2-6 month breeding seasons. During this period, seabirds perform an important role in the allochthonous transport of marine nutrients into these terrestrial environments. Depending on the size and density of these aggregations, the impact could be alteration of soil chemistry, vegetation or invertebrate diversity and distribution patterns, primarily through the deposition of large quantities of guano. We studied the impact of breeding aggregations of the Socotra Cormorants (*Phalacrocorax nigrogularis*) on Siniya Island, Umm Al Quwain, United Arab Emirates, typically ranging between 26,000 to 41,000 breeding pairs. We set up traps along grids in eight areas. These areas were chosen based on whether nesting had occurred in 2016 (nesting areas) or not (non-nesting areas). Traps were deployed in the environment and then removed, specimens preserved and invertebrates identified later. Generally, Richness and species diversity is affected negatively in areas that were nested, indicating that some species or taxonomic groups were negatively affected. Coleoptera, Hymenoptera and Isopoda decreased in abundance after nesting in areas used for nesting, indicating that selected species within these taxa could not tolerate high levels of nutrient input from guano. Ticks (*Ornithodoros muesebecki* (Acari), a species that is known to parasitize seabirds in the Arabian Gulf) were positively affected in that their numbers increased overall, particularly in areas that were not-used for nesting. Deposition of guano is known to strongly influence vegetation and associated invertebrate communities, often having long-term consequences on island biota. This study shows that insect and other invertebrate communities are impacted by Socotra Cormorant presence during the breeding season, thereby helping to shape the terrestrial communities over the long term. Further work is needed to better understand these interactions and determine how long-term changes could occur in such arid ecosystems.

Keywords: Socotra Cormorant, *Phalacrocorax nigrogularis*, terrestrial invertebrates, nesting, community structure.