

A herpetological survey of some islands in the Arabian Gulf, Abu Dhabi Emirate, United Arab Emirates

by Pritpal S. Soorae

Abstract. Five species of geckos (*Bunopus tuberculatus*, *Cryptodactylus scaber*, *Hemidactylus flaviviridis*, *H. turcicus*, and *Pristurus rupestris*), one lizard species (*Mesalina brevirostris*) and three snake species (*Eryx jayakari*, *Coluber ventromaculatus* and *Psammophis schokari*) were recorded on a total of 13 islands during a herpetological survey conducted in 2003-2004 in the Arabian Gulf, Abu Dhabi Emirate. The distribution and abundance of these species is also described in detail. *Bunopus tuberculatus* and *Mesalina brevirostris* are more commonly distributed on the islands and the remaining gecko species are limited only to certain islands, whilst the three snake species were recorded only on one island.

Kurzfassung. Bei einer Erfassung der Herpetofauna von 13 Inseln im Arabischen Golf im Emirat von Abu Dhabi in den Jahren 2003-2004 wurden fünf Arten von Geckos (*Bunopus tuberculatus*, *Cryptodactylus scaber*, *Hemidactylus flaviviridis*, *H. turcicus* und *Pristurus rupestris*), eine Eidechsen-Art (*Mesalina brevirostris*) und drei Arten von Schlangen (*Eryx jayakari*, *Coluber ventromaculatus* und *Psammophis schokari*) nachgewiesen. Die Verbreitung und Häufigkeit wird detailliert beschrieben. *Bunopus tuberculatus* und *Mesalina brevirostris* sind relativ am häufigsten und am weitesten verbreitet; das Vorkommen der Geckos ist auf bestimmte Inseln beschränkt und die drei Schlangenarten wurden nur auf einer Insel festgestellt.

Key words. Gecko, snake, lizard, islands, Arabian Gulf, Abu Dhabi, Middle East.

Introduction

There are over 30 major islands of significant biodiversity in the waters of the Arabian Gulf, Abu Dhabi Emirate, United Arab Emirates (UAE). These islands are known to have significant sea-bird breeding colonies (JAVED & KHAN 2003) and some islands are also important sea-turtle nesting sites (DAS 2003). These islands range in size from approximately 0.5 km² to over 350 km² (Fig. 1); some are uninhabited whilst others, such as Sir Bani Yas and Delma, have sizeable human populations. Arzanah and Zirku are offshore oil-field sites with related infrastructure, and others such as Merawah, Al Bazam, Jenanah are classified as Marine Protected Areas (MPA's). Other islands such as Ushsh and Al Aryam are privately owned with limited public access. There are also some islands with restricted access.

These islands have attracted some interest for herpetological work, which has been conducted mainly by natural history groups. The Emirates Natural History Group (ENHG) has conducted some natural history trips to islands such as Merawah, Jernain and Sir Bani Yas where species have been recorded (ENHG 1989, 1990). Herpetological surveys have generally been limited to the UAE mainland, and a 1991/92, predominantly mainland survey identified a total of 33 species of reptiles (from the UAE's 36 known species) from a total of 737 records) in the UAE (EL DIN 1996).

The survey reported here was carried out between April 2003 and February 2004 on a total of 13 islands. This survey was carried out under the Terrestrial Environment and Research Center (TERC) of the Environmental Research & Wildlife Development Agency (ERWDA), Abu Dhabi, UAE.

Material and methods

This survey was carried out by visiting islands with staff from ERWDA's TERC and Marine Environment Research Center (MERC). The majority of islands were visited by boat, and logistically this was quite difficult as the long distances to most islands and bad weather (most afternoons the wind made travel difficult on the sea) resulted in limited time available for conducting surveys on these islands. A few islands are located nearer to the mainland, and are connected by roads via ferries. On others, overnight accommodation was available, which enabled nocturnal surveys to be made.

Upon reaching an island, a walking transect method was employed and species recorded, both in the open and also under washed-up debris (wooden planks, plywood sheets, ropes, plastic bottles, jerrycans, tyres, etc.), stones and under bushes or other natural cover. Once a specimen was found, it was either visually identified or captured to confirm its identification. After identification the species name, GPS location, time of day and whether it was first observed in the open or under cover (natural or debris) was recorded. The majority of surveys were conducted during the day and on islands where it was possible to spend a night; nocturnal surveys were also conducted. Nocturnal surveys followed similar procedure to daytime surveys and powerful MAGLITE torches were used to locate and identify specimens. A total of 30 hours and 55 minutes were spent surveying these 13 islands, and the breakdown is shown in Tab. 1.

Results

This survey recorded a total of five gecko species, one lizard and three snake species (see Tab. 1). The species marked (*) in the list below were recorded from a collection of uncatalogued frozen specimens which had been collected and preserved in a deep-freeze on Sir Bani Yas Island. The species recorded during the survey were:

Family Gekkonidae

- Baluch Rock Gecko *Bunopus tuberculatus* (Blanford, 1874)
- Rough-tailed Bowfoot Gecko *Cryptodactylus scaber* (Hyden, 1827)
- Yellow-bellied House Gecko *Hemidactylus flaviviridis** (Ruppell, 1840)
- Turkish Gecko *Hemidactylus turcicus* (Linnaeus, 1758)
- Rock Semaphore Gecko *Pristurus rupestris* (Arnold, 1977)

Family Lacertidae

- Short-nosed Sand Lizard *Mesalina brevirostris* (Blanford, 1874)

Family Boidae

- Jayakar's Sand Boa *Eryx jayakari* (Boulenger, 1888)

Family Colubridae

- Rat Snake *Coluber ventromaculatus** (Gray, 1833-1834)
- Schokari Sand Racer *Psammophis schokari** (Forskål, 1775)

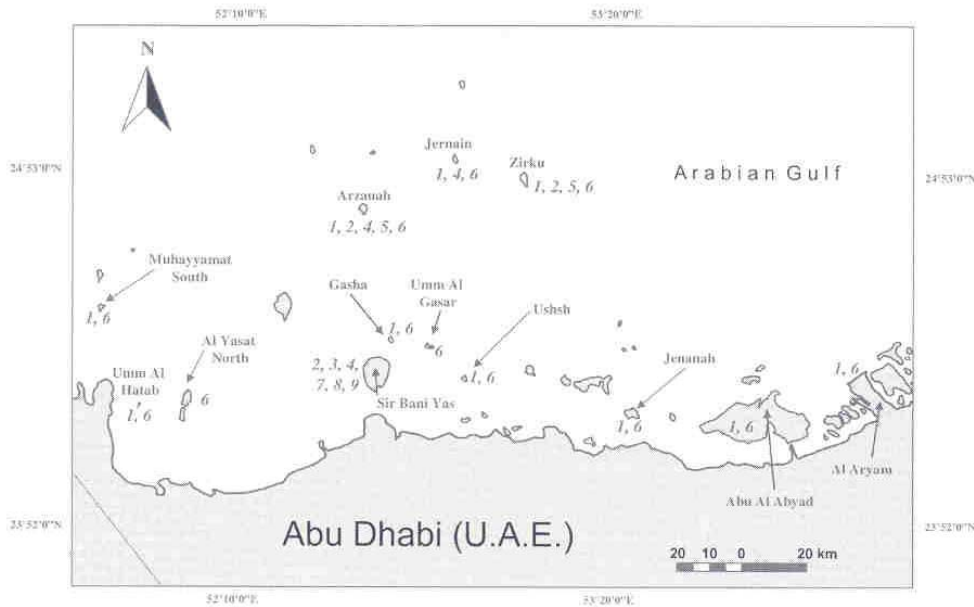


Fig. 1. Distribution of reptile species recorded on offshore islands in the Emirate of Abu Dhabi, United Arab Emirates. 1- *Bunopus tuberculatus*; 2- *Cryptodactylus scaber*; 3- *Hemidactylus flaviviridis*; 4- *H. turcicus*; 5- *Pristurus rupestris*; 6- *Mesalina brevirostris*; 7- *Coluber ventromaculatus*; 8- *Eryx jayakari*; 9- *Psammodromus schokari*.

Species Accounts

Baluch Rock Gecko (*Bunopus tuberculatus*)

This species was found 87% of the time under debris, 9% under rocks, 2.5% in the open and 1.5% under vegetation. During the day individuals were usually found under the beach debris which is very common along most shorelines. In places where beach debris is naturally absent or has been artificially cleaned up, this species was less abundant. There were some islands such as Jenanah, Muhayyamat North and Arzanah islands where this species was found abundantly.

Rough-tailed Bowfoot Gecko (*Cryptodactylus scaber*)

This nocturnal species was only found in the open, and this was mainly after sunset when individuals would actively emerge to hunt. They were found on walls and on the bark of live standing trees. This species was numerous on Arzanah Island.

Turkish Gecko (*Hemidactylus turcicus*)

Most records from the survey show that it was found 92% in the open and 8% under debris, and was mainly active at night. This species was found in high densities on both Arzanah and Sir Bani Yas Islands.

Rock Semaphore Gecko (*Pristurus rupestris*)

This species was recorded 60% in the open and 40% under debris, and exclusively during the daytime. An interesting observation was that the specimens on Arzanah Island were found

Tab. 1. Species and numbers of individuals recorded during the island herpetological survey. The search time is given in hours/minutes.

	Search time	<i>B. tuberculatus</i>	<i>C. scaber</i>	<i>H. flaviviridis</i>	<i>H. turcicus</i>	<i>P. pestrus</i>	<i>M. brevirostris</i>	<i>E. jayakari</i>	<i>C. ventromaculatus</i>	<i>P. schokari</i>	Total
Abu Al Abyad	1/50	1	0	0	0	0	8	0	0	0	9
Al Aryam	1/00	5	0	0	0	0	8	0	0	0	13
Al Yasat North	0/45	0	0	0	0	0	1	0	0	0	1
Arzanah	9/40	18	10	0	12	5	24	0	0	0	69
Gasha	2/30	15	0	0	0	0	6	0	0	0	21
Jenanah	1/45	40	0	0	0	0	1	0	0	0	41
Jerman	1/50	3	0	0	2	0	2	0	0	0	7
Muhayyamat South	1/45	30	0	0	0	0	2	0	0	0	32
Sir Bani Yas	3/15	0	3	1	9	0	0	1	1	1	16
Ushsh	1/10	2	0	0	0	0	11	0	0	0	13
Umm Al Gasar	0/45	0	0	0	0	0	9	0	0	0	9
Umm Al Hatab	1/30	2	0	0	0	0	2	0	0	0	4
Zirku	3/10	16	1	0	0	3	3	0	0	0	23
Total	30/55	132	14	1	23	8	77	1	1	1	258



Fig. 2. *Mesalina brevirostris*.

solely in an area with discarded oil-field debris and were found on large mooring chains and water pipes. It was assumed that a large pile of chains probably provides a suitable micro-habitat on otherwise desolate islands. This species was found only on Arzanah and Zirku Islands, both of which are connected with offshore oil-field services and have small hills.

Short-nosed Sand Lizard (*Mesalina brevirostris*)

This species was also fairly common and was seen more actively during the day; nocturnal records were of specimens recorded under cover. Records from the survey show that 73% were recorded under debris, 17% under rocks, 7.4% in the open and 2.6% under vegetation. Individuals would actively flee, moving from cover to cover to avoid detection. This species was found to be abundant on Arzanah and Ushsh Islands.

Snake species

A single Arabian Sand Boa (*Eryx jayakari*) was recorded on Sir Bani Yas Island, and this was a juvenile specimen that had crawled into an open gutter which also functioned as a pit-trap. The other two species, the Rat Snake (*Coluber ventromaculatus*) and Sand Snake (*Psammophis schokari*), were recorded from frozen specimens preserved on the island. There were other species which could not be positively identified, and further enquiries with staff on this island indicated that snakes are commonly observed. On other islands, no observations or signs of any snake species were observed and the high abundance of geckos and lizards suggests that they are absent.

Discussion

Tab. 1 shows that the islands Sir Bani Yas, Arzanah, Zirku and Jernain had some of the highest number of species. Surveys on these islands were made both during the day and night, and this accounts for the higher number of nocturnal geckos which were recorded during night surveys. Sir Bani Yas Island had the highest number of species and this also

included three species of snakes which were recorded from the island. The other islands, Abu Al Abyad, Al Aryam, Al Yasat North, Gasha, Jenanah, Muhayyamat South, Ushsh, Umm Al Gasar & Umm Al Hatab, had the lowest number of species and this may be due to the survey being limited to daylight hours.

The gecko species that were recorded on Sir Bani Yas, Arzanah, Zirku and Jernain Islands were associated with human-related infrastructure e.g. buildings, planted trees and on oil-field related machinery. It is also possible that these species have been moved from island to island with the movement of cargo, which would have enabled them to extend their distribution range. The snake species were only found on Sir Bani Yas Island, with no other sightings on any of the other islands. There is a possibility that they have been introduced on to this island via the movement of cargo, earth for land reclamation and animal feed between the island and mainland. The *Eryx jayakari* recorded during this study was a juvenile and this might indicate that this species breeds on Sir Bani Yas Island.

It is important to conduct more detailed surveys on islands in the Arabian Gulf within the Abu Dhabi Emirate to get a more detailed picture of the existing composition of herpetological species. During this initial survey, it has been observed that many islands are being influenced by anthropogenic activities (e.g. construction and development related activities) and this will probably affect the species composition on the islands through introductions by human agency.

Acknowledgements. I am grateful to HH Sheikh KHALIFA BIN ZAYED AL NAHYAN, Crown Prince of Abu Dhabi and Chairman of the Governing Board of the Environmental Research and Wildlife Development Agency and to HH Sheikh HAMDAN BIN ZAYED AL NAHYAN, Deputy Chairman of the Governing Board, for financing this research. We wish to thank HE Mohammed AL BOWARDI, Managing Director of ERWDA and Mr Majid AL MANSOURI, ERWDA Secretary General, for their invaluable support. This study could not have been made without the help in the field of staff from the Marine and Terrestrial Environment Research Centers of ERWDA.

References

- DAS, H. (2003): Head-starting of sea turtles: is it a viable conservation and management tool? Re-introduction NEWS. – Newsletter of the IUCN/SSC Re-introduction Specialist Group 23: 42–44, Abu Dhabi.
- EL DIN, S. B. (1996): Terrestrial reptiles of Abu Dhabi, p. 124–147. In: P. E. OSBORNE (Ed.), Desert Ecology of Abu Dhabi: A Review and Recent Studies. – Newbury (U.K.) & National Avian Research Center (UAE).
- ENHG (1989) The Qarnein expedition. – Bulletin of the Emirates Natural History Group 39: 10, Abu Dhabi.
- ENHG (1990): Reptile recorder's report for 1989. – Bulletin of the Emirates Natural History Group 40: 13, Abu Dhabi
- ENHG (1990) The natural history of Merawah Island. – Bulletin of the Emirates Natural History Group 42: 9–10, Abu Dhabi.
- JAVED, S. & S. KHAN (2003): Important Islands for Bird Conservation in the Abu Dhabi Emirate. – Unpubl. Report, Environmental Research & Wildlife Development Agency (ERWDA), Abu Dhabi, 20 pp.

Author's address: Pritpal Singh Soorae, Terrestrial Environment & Research Center (TERC), Environmental Research & Wildlife Development Agency (ERWDA), P.O. Box 45553, Abu Dhabi, UAE. E-mail: PSoorae@erwda.gov.ae.