

Growth rates of immature hawksbills (*Eretmochelys imbricata*) at Aldabra Atoll, Seychelles (Western Indian Ocean)

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INTRODUCTION

A mark-recapture study of immature foraging sea turtles has been ongoing at Aldabra atoll since 1986. This abstract presents preliminary data from that study which describe the growth of hawksbill turtles.

METHODS

Fig. 1 shows the location of the study site. Turtle captures were made using two methods: a) the 'rodeo' technique (in which people leap out of moving boats onto turtles); and b) by walking in shallow water at low tide and picking up turtles trapped in tidal pools. Each captured turtle was double-tagged (one tag on each front flipper), weighed, and a series of carapace measurements were taken. The present analysis describes average annual growth rates recorded for hawksbills based on one of those measurements -- over the curve maximum carapace length (OCCL-max).

RESULTS

A total of 375 hawksbill turtles were captured between 1986 and 2001. Of these, 115 animals were captured on two or more occasions: 76, twice; 19, three times; 12, four times; 5, five times; 2, seven times; and 1, eight times. Fig. 2 presents the average annual growth rate during the interval between the first and the last time a turtle was captured. To minimise seasonal bias, data are presented only for intervals greater than eight months (n=58). These intervals ranged from eight months to ten years. Table 1 presents the same data in a tabular format.

CONCLUSIONS

We conclude that the immature hawksbills foraging in the warm waters of Aldabra atoll, grow slowly, at rates that are: similar to those recorded for hawksbills in the cool waters of Heron Island, Australia (Chaloupka and Limpus 1997); faster than those recorded for hawksbills in the warm waters of Diego Garcia atoll, British Indian Ocean Territory (Mortimer et al. 2002); and slower than those recorded for hawksbills at Mona Island, Puerto Rico (Diez and van Dam, in press).

At Aldabra, the highest growth rates for hawksbills were recorded in the 50-60 cm size class of turtle. At other sites, the highest growth rates recorded for hawksbills were in the following size classes: 50-60 cm at Heron Island, Australia (Chaloupka

and Limpus 1997); 40-50 cm at Diego Garcia, BIOT (Mortimer et al. 2001); and 30-40 cm size class at Mona Island, Puerto Rico (Diez and van Dam, in press) and in the Virgin Islands (Boulon 1994).

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Table 1. Mean growth rates by 10 cm over-curve carapace length (OCCL-max) size classes of 58 hawksbills turtles at Aldabra atoll. Turtles were assigned to size classes according to individual mean OCCL-max of first and last capture.

OCCL-max size class (cm)	Size of Turtles		Growth Rate		
	Mean OCCL-max of sample (cm)	Range (cm/yr)	Mean growth rate ± S.D. (cm/year)	Range (cm/yr)	n
30-40	36.1	32.6 - 39.4	1.5 ± 0.6	0.5 - 2.5	13
40-50	44.9	40.3 - 49.4	2.7 ± 0.7	1.9 - 4.6	23
50-60	54.4	50.2 - 59.3	3.2 ± 1.3	1.4 - 5.5	17
60-70	69.9		3.7		1
70-80	73.8	71.2 - 78.0	1.6 ± 1.2	0.1 - 2.8	4

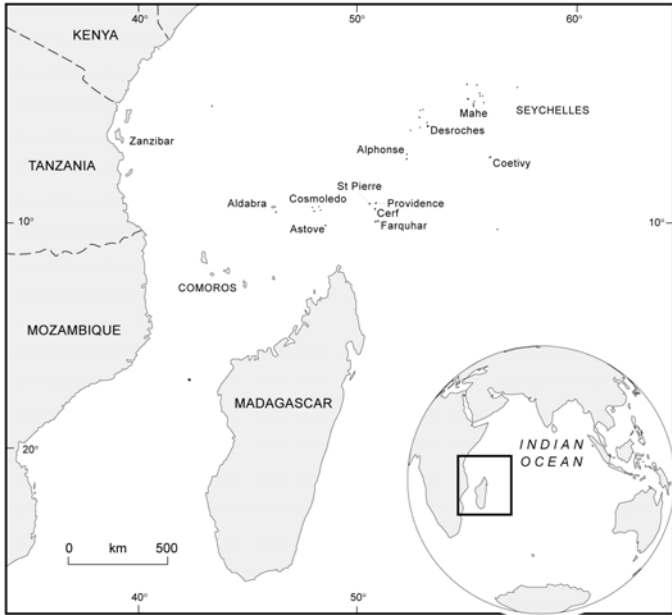


Fig. 1. Location of the study site, Aldabra Atoll, in the western Indian Ocean.

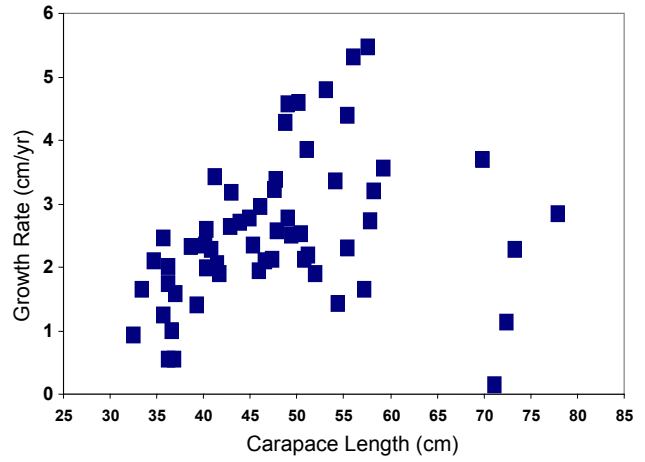


Fig. 2. The average annual growth rate during the interval between the first and the last time a hawksbill turtle was captured at Aldabra (n=58).



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