

# On the effect of substrate on nesting success of the Green Turtle, *Chelonia mydas*, in the Arabian Gulf

by Ahmed M. A. Al-Mansi, Omar A. Khushaim and  
Moustafa M. H. Al-Marghani

**Abstract:** Fertilized eggs were collected from three Green Turtle (*Chelonia mydas*) clutches on the island of Karan. As a preliminary study on the effect of local sediment characteristics on hatching success, each clutch of eggs was split into four groups and reburied in sediment collected from one of the four Saudi Arabian Gulf offshore islands of Karan, Kurayn, Jana or Jurayd. The highest hatching success was recorded from eggs reburied in sediment taken from Karan Island followed by sediment from Jana Island. The beaches of these two islands are the preferred natural nesting sites for Green Turtles in the area. Factors responsible for this preference are discussed.

**Kurzfassung:** Auf der Insel Karan im Arabischen Golf von Saudi-Arabien wurden von der Suppenschildkröte (*Chelonia mydas*) befruchtete Eier gesammelt. Um den Einfluß der Eigenschaften des Sediments, in das die Gelege abgelegt werden, auf den Schlüpfertfolg zu untersuchen, wurden die Gelege in jeweils vier Gruppen unterteilt, und wieder in Sand vergraben, das von den Inseln Karan, Kurayn, Jana bzw. Jurayd stammte. Der höchste Schlüpfertfolg wurde in Sediment von der Insel Karan festgestellt, gefolgt von der Insel Jana. Diese beiden Inseln sind in der Region auch die bevorzugten Nistplätze der Suppenschildkröte. Die möglichen Faktoren werden diskutiert.

**Key words:** Green Turtle, *Chelonia mydas*, Testudines, Arabian Gulf, Middle East.

## Introduction

There are five circumglobal species of marine turtle known from Arabian waters: the Green Turtle, *Chelonia mydas* (Linnaeus, 1758); the Hawksbill Turtle, *Eretmochelys imbricata* (Linnaeus, 1766); the Loggerhead Turtle, *Caretta caretta* (Linnaeus, 1758); the Leatherback turtle, *Dermochelys coriacea* (Vandelli, 1761) and to a lesser extent the Olive Ridley Turtle, *Lepidochelys olivacea* (Eschscholtz, 1829). The Leatherback Turtle however, is only known as a vagrant in Arabian seas (ROSS & BARWANI 1982, GASPERETTI et al. 1993). All five species, except the leatherback, have internationally important nesting sites on the Arabian Peninsula (HIRTH & ABDEL-LATIF 1980, ROSS 1981, ROSS & BARWANI 1982, MILLER 1989).

The beaches of Queensland in Eastern Australia are the principal nesting grounds of *C. mydas*, followed in descending order of importance by sites in Indonesia, Western Australia, Costa Rica, the Seychelles, Pakistan, India, the Maldives, Malaysia, the Philippines, New Caledonia, the Galapagos Islands and Mexico (GROOMBRIDGE & LUXMORE 1989, GASPERETTI et al. 1993). On the Arabian Peninsula however, there are also two *C. mydas* nesting