

DIRK HARTOG ISLAND LOGGERHEAD TURTLE NESTING POPULATION STUDY

A SHARK BAY WORLD HERITAGE AREA MANAGEMENT PROJECT
being part of the Western Australian Marine Turtle Project

REPORT on the 1996/97 SEASONAL WORK PROGRAM

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Introduction

Field work at the Dirk Hartog Island loggerhead turtle nesting beaches along the Turtle Bay - Cape Levillain coast was commenced in January 1994 (Prince 1994). The work was interrupted over season 1994/95, but recommenced in season 1995/96. This report covers work undertaken during the 1996/97 nesting season, and includes information gleaned from reports of captures and/or recoveries of previously tagged turtles from among those handled in seasons 1993/94 and 1995/96.

Work Program

The main field sampling and monitoring of the loggerhead turtles nesting at Dirk Hartog Island through summer 1996/97 was conducted over 14 nights between 8 and 22 January 1997. Supplementary visits to check on the late season decline of nesting activity were conducted over 10-12 February (2 nights) and 10-11 March 1997 (1 night). Additional data for 16-17 February 1997 were supplied by a local nature-based tour operator.

Two three member work parties were primarily responsible for the interception, tag and release of new nesting turtles, and the monitoring and appropriate action required to deal with previously tagged turtles when found. These latter included remigrant turtles tagged in seasons 1993/94 and 1995/96, as well as further on beach encounters with 1996/97 tagged turtles.

Some personnel were changed over mid-way through the sampling period (15 - 16 January 1997). The extra hands available on this change-over permitted collection of some additional data on egg size and numbers per clutch laid.

Results

In total, 807 new nesting female loggerhead turtles were tagged and released, and another 76 previously tagged remigrant turtles were encountered during season 1996/97 work. Cumulatively, 1 786 adult female loggerhead turtles have now been tagged and released from among those nesting at Dirk Hartog Island, and 105 have been recorded as remigrants. One adult female loggerhead, first tagged on a north-west Kimberley reef (Montgomery Islands, Collier Bay) in August 1991 has also been discovered nesting at Dirk Hartog Island (season 1995/96).

Among the remigrant turtles recorded over the 1996/97 season, 70 were first records at 3 years from first encounter, 4 were at 1 year, and 2 were found for the second time, having been recorded twice at [2 years + 1 year] from first tagging. No two year interval remigrants were observable, due to interruption of the work over season 1994/95, as noted above. One of the 1996/97 remigrant turtles had been reported captured and released from a boat working in the

Shark Bay prawn fishery on 15 March 1996, having been first tagged and released in season 1993/94. This is the first record we have of survival of a trawled and released turtle from this nesting population, from among 8 believed eligible to date.

Fifteen clutch counts were done by excavation following deposition of eggs. Numbers of full size eggs per clutch ranged from 61 to 173, with a mean of 135.9 ± 8.52 (se). Egg samples (10 eggs/clutch) from thirteen of these clutches were weighed. Average egg weights derived from individual clutch samples ranged from 32.8g to 44.6g. These data are similar to those obtained during the 1995/96 season, eg, Average clutch 132.6 ± 5.20 (se), range 67 - 181 eggs (22 clutches); Average egg weights range 30.8g - 42.3g (22 clutches).

Discussion

Dispersal data obtained from the available capture and release records, and other encounters reported, show that loggerhead females nesting at Dirk Hartog Island include some turtles having their home feeding grounds within the Shark Bay WHA, while others have come from feeding grounds in Kimberley coastal waters. There are, however, insufficient data as yet to adequately define the full range and location of all the feeding grounds occupied by loggerhead turtles breeding at Dirk Hartog Island.

Other data available from the Western Australian Marine Turtle Project (WAMTP: Prince, unpublished records) also show that adult female loggerhead turtles apparently resident within the Shark Bay WHA include some that nest at South Muiron Island, off Exmouth Gulf, WA.

The marked turtle population study in progress has not yet been run for long enough to provide adequate sampling of the nesting female turtles likely to be dependent on breeding sites at Dirk Hartog Island, or to provide a good indications of individual nesting frequencies in the long term.

We have no data available as yet on the location of interesting habitats of importance to the Dirk Hartog Island breeding loggerhead females attending that rookery, or on the location of their mating grounds.

Reference

Prince, R I T (1994). Shark Bay World Heritage Area: An Important Loggerhead Nesting Site. *Marine Turtle Newsletter*, **67**:5-6.