THE BASKING GREENS OF BOUNTIFUL ISLAND
KAY'S TURTLES REVISITED

Colin J. Limpus [1]
Jeffrey D. Miller [1]
Noel Preece [2]

[1] Queensland Turtle Research Project, Queensland Department of Environment and Heritage, P.O.Box 155, Brisbane 4002, Australia
[2] Desert Discovery, Alice Springs, Australia

In 1973 William Collins Sons & Co Ltd published a book, "Kay's Turtles", recounting the adventures of Kay, a Torres Strait Island girl, with wild green turtles (Bustard, 1973). The book is illustrated with impressive photographs of mass strandings of basking and mating green turtles. The story is presented as "an authentic account" and the name and location of the island(s) is not supplied "lest it result in a rush of tourist-sightseers". The reader is only given Torres Strait, the narrow straight between eastern Australia and Papua New Guinea, as the general location for the site of the story.

The authors have extensively surveyed the marine turtle resources of Torres Strait, and we can categorically say that massed basking and mating by green turtles on the shore and immediately adjacent shallows does not occur on any island in Torres Strait.

However, this massed basking and associated mating behaviour of green turtles characterises the three major green turtle rookeries of the Wellesley Group in the southeastern Gulf of Carpentaria (Bountiful, Pisonia and Rocky Islands) in northern Australia. Some of the photographs in "Kay's Turtles" (opposite pp.64, 113) can be matched to particular lengths of the shoreline at Bountiful Island (16°40'S, 139°51'E). Bustard visited these islands prior to 1972 (Bustard 1972). These islands lie approximately 600km to the south of Torres Strait.

While the story of Kay and her turtles must be regarded as fiction, the basking green turtles of Bountiful Island and adjacent Pisonia and Rocky Islands are very real. They have been the subject of study during recent years and the following is a summary of observations of these basking turtles.

Although *Chelonia mydas* and *Natator depressus* nest in abundance at these uninhabited islands, especially in the winter months, only *Chelonia mydas* are stranding, sometimes as isolated turtles, sometimes in groups of up to 400 in a single small embayment. Most of the stranded turtles are found lying in the shallows with their carapaces partly exposed to the air or are lying completely exposed on the beach. These turtles give the appearance of "basking". The "basking" turtles are mostly internesting females with some adult males. This is interpreted as a voluntary behaviour, because the "basking" turtles can leave the beach or shallows at any time and return to the sea. These strandings have been recorded at the same sites on these islands over decades by local fishermen. While some turtles crawl out of the water to lie on the beach, most sit in the shallows and the falling tide exposes them. The largest concentrations of "basking" turtles are visible on low tides, especially on spring low tides during the middle of the year. The turtles do not appear to move away from these sites when the tide comes in and the water is deeper.

No immature turtles have as yet been found among the "basking" turtles. All females examined have had healing recent courtship bite marks on the neck and shoulders and/or claw marks on the anterior margins of the carapace. All have been recently mated. All females whose gonads have been examined by laparoscopy have been carrying oviducal eggs and/or fully formed mature follicles. When tagged some of these turtles can be found nesting on the island within a few nights. All males examined had recent courtship bites to the rear margins of their flippers and/or dorsal tail. While some

courtship groups can be seen in the adjacent shallows, many adult females were seen submerged in the shallows but were ignored by the males unless the female began rapid swimming (as in escaping our capturing attempts). Of approximately 340 green turtles examined, none had scars indicating having been mauled recently by a shark.

It is our interpretation that internesting female turtles, i.e. females that are in the oviducal egg production phase, must have an empty gut and therefore can not be feeding. (None of the ~290 females examined in July 1992 were observed feeding, 2 of ~50 adult males were seen to feed.) If the females are not feeding they will not be thermoregulating to assist in food digestion. Whether there is thermoregulation for assisting egg production has not been addressed.

Our observations indicate that females do not have to enter the shallows to escape the attention of courting males (Bustard 1972). This is consistent with them being females that have completed courtship. With no evidence of significant shark attack on turtles in subtidal waters, it is difficult to argue for these turtles are "basking" as a strategy to escape marine predators.

CONCLUSION

These turtles appear to be functioning as normal internesting turtles, except for the "basking". As is normal for internesting females, there were a small numbers of sexually active males associated. If they are internesting turtles then it follows that for these rookeries, part of the internesting habitat occurs in intertidal waters. These "basking" turtles are very likely to be negatively impacted by regular human visitation to these islands. Management of these islands needs to consider not just the conservation of the turtle nesting populations but also this unique green turtle massed "basking" behaviour.

LITERATURE CITED

Bustard, R. 1972. Sea Turtles. Collins, London.

Bustard, R. 1973. Kay's Turtles. Collins, London.

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1 - 5 March 1994
Hilton Head, South Carolina

Compilers:

Karen A. Bjorndal
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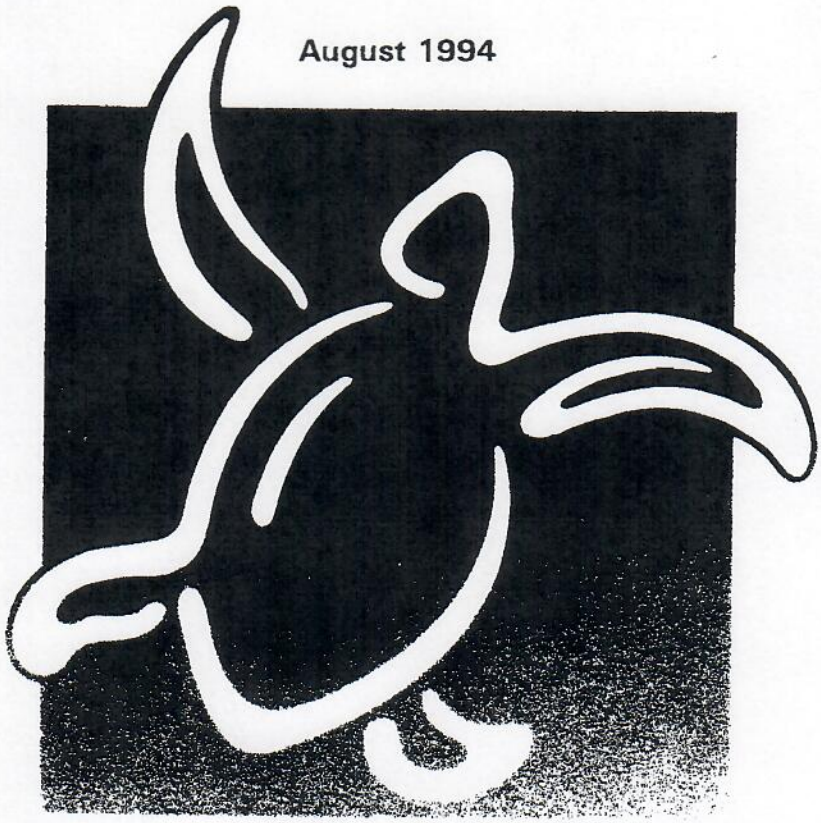

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