NOTES ON ASPECTS OF HATCHERY MANAGEMENT ON SANGALAKI

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High Tides

Sangalaki is subject to extreme high tides in January-February and July-August (check the latter date with local fishermen). In January-February 2002 the high tides occurred at the end of each month and were highest in the evening (local informants say that this is usual). Maximum tide heights are much the same in both months. In July-August the highest tides are said to be in the mornings and local people say that they are not as high as in the early part of the year. High winds or low pressure systems can cause the tides to be higher than predicted by tide tables.

The current hatchery is located in an area that is subject to tidal inundation during such extreme high tides.

On 29 and 30 January 2002 the hatchery flooded from below (tidal water seeping up through the sand). On both evenings a few waves came over the beach berm and reached the seaward fence but did not enter the hatchery.

On the evening of 29 January (when according to the tide tables the highest tide would occur) the water came within 20-35 cms below the sand surface. The depth varied over the area of the hatchery and persisted for less than an hour.

On the evening of 30 January (when according to the tide table the water would be lower than on the previous night) the water came within 35-50 cms below the sand surface. Again the depth varied over the area of the hatchery and persisted for less than an hour.

On the third day, 31 January, the water flooded over the berm and entered the hatchery to a depth of 1-15 cms, the depth varrying over the area of the hatchery. This surface flooding covered about 75% of the hatchery and persisted at its highest level for less than one hour. However it took several hours for the water to go down to a level of approximately 30 cms below the sand surface.

The impact of this flooding on the hatch success rate of nests is impossible to determine, especially since the eggs that were flooded may have been contaminated by fuel during earlier stages of development. Despite these impacts, hatchlings have emerged from nests that were flooded three times, up to three weeks after this took place (although in reduced numbers).

As a general guideline, the current hatchery should not be used between the end of November (65 days before the January high tides) and the end of February (after that month's high tides), and preferably should not be used at all.

If tide tables indicate that the tide levels in July-August will flood the hatchery, a similar period of restrictions should be followed.

If there is a need to continue using the hatchery in the future, it is best to move it further along the beach (to Sector 2) and further back, away from the sea. This location may, however, not be ideal in terms of security of the hatchery as it is further away from the resort.

If the hatchery is moved, the new location should conform to the following guidelines. The surface of the hatchery site should be located well above the level of the highest spring tides to prevent underground flooding of the eggs. Besides this, the hatchery location should not contain excessive amounts of roots, humus or weeds. In addition the hatchery should not take up space in a natural nesting area, or block access to natural nesting areas. As much as possible the hatchery area should be conform with species specific parameters such as sand grain size and moisture content.

Average Hatching Times for Eggs on Sangalaki

The average time for Green Turtles eggs to hatch in Sangalaki is 52-62 days, though warmer weather will result in shorter incubation periods. The average time for a nest to hatch in the open, unshaded areas of a hatchery can be several days shorter than in shaded areas.

In November and December 2001 the average time for eggs to hatch was 52-56 days. During the rainy season in January and February 2002 the average hatch time for a nest was 54 days in the open, unshaded areas of the hatchery and 58 days in the shaded areas. It is important to continue to collect and analyse data on hatching times on Sangalaki and to base hatchery management on this.