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KWAJALEIN ISLAND TURTLE REPORT NOVEMBER 16, 2005

BACKGROUND

This is the third report for the pond and sea turtles located at the U.S. Army Base, Kwajalein Atoll in the Republic of the Marshall Islands. The first report (7/16/03) describes the history of the pond and turtles with a veterinary health summary on the health of the seven turtles. A list of recommendations was presented for improving the care of the turtles and better use of the pond. The second report (9/29/04) was a follow up on the turtles health status and response to the overall recommendations. A yearly veterinary health check was recommended. This report covers the veterinary health check on 11/16/05 with additional recommendations and comments.

FACILITY

Over the past year a number of improvements have been made to the pond area. The pond was drained and a deep layer of accumulated sediment removed and the pond pressure washed. Most of the undesirable resident fish were removed. Some thought was required as to which "turtle friendly" species of fish and invertebrates should be re-established. Through a co-operative effort with the high school science class headed by Eric Nelson, turtle friendly species were selected. Butterfly fish, Moorish Idols and tangs were selected as well as sea cucumbers and starfish. Mullet were accidental introductions but considered friendly. The tangs and butterfly fish were observed "cleaning" the turtles just like they would in the wild. The ramp leading to the beach area was raised to make access more available. One of the large females has been observed occasionally on the beach. No evidence of nesting behavior was observed. A barrier was placed at the bridge to separate male and female turtles. This was initiated after aggressive breeding behavior (biting) resulted in a neck abscess to one of the females. This resolved the problem until some of the males can be released. Educational signs have been placed around the pool giving turtle identification and biological data. These signs are in English and Marshallese. Other informative signs on care were also installed.

THE TURTLES

The same seven turtles remain in the pond. The population consists of three mature male green turtles measuring 84.3 cm. straight carapace length (SCL), 83.0 cm. and 77.7 cm.; two mature female greens measuring 90.0 cm. and 84.3 cm.; one immature green at 69.1 cm. and one mature hawksbill turtle measuring 78.7 cm. As previously stated the male turtles have been separated from the female turtles with a barrier at the bridge. The plan is to remove this barrier after the release of some of the turtles.

SUMMARY OF THE TURTLE EXAMS

Turtle # 1 mature male

Metal tags: ~~missing left front~~, # 10610 right rear flipper

Microchip # 956 (last 3 digits)

Measurements (length and weight):

SCL 84.3 cm.

Weight 213.5 lbs.

Change from 9/29/04: + 1.8 cm., + 12.5 lbs.

Body condition good

Adequate growth and weight gain

Blood results normal

Turtle # 2 mature male

Metal tags: ~~left front 10612~~, right rear 10611

Microchip # D52

Measurements (length and weight):

SCL 77.7 CM

Weight 200 lbs.

Change from 9/29/04: -- .7 cm., - 6 lbs.

Body condition good

This turtle had no growth and a weight loss of 6 lbs. Possible causes could be from breeding activity or possible diet.

Blood results normal

Turtle # 3 mature female

Metal tags: ~~left front 10613~~, right rear 10614

Microchip # 743

Measurements (length and weight):

SCL 84.3 cm.

Weight 200 lbs.

Change from 9/29/04: 0 cm., + 8 lbs.

Body condition good

This turtle had a weight gain but no gain in growth.

Blood results: Cholesterol elevated, calcium highly elevated, slight reversal of heterophil to lymphocyte ratio, white blood cell counts lower than most.

This turtle is recovering from a neck abscess treated in July and August 2005. This could explain the blood count and reversal seen in the white blood cell types. The high calcium levels are probably due to egg production as she is a mature female. This turtle had high calcium levels in the fall months of past years (19.9 mg/dl Sept. 04, 19.5 mg/dl Aug. 05 and 20.3 mg/dl Nov. 05 vs. a normal level of 7.3 mg/dl in July 03).

Turtle # 4 immature

Metal tags: left front 10617, right rear tag missing

Microchip # 053

Measurements:

SCL 69.1 cm.

Weight 103.5 lbs.

Change from 9/29/04: + .9 cm., -3.5 lbs.

Body condition good

This turtle had a weight loss of 3.5 lbs. and very little growth. I would expect more growth and weight gain as demonstrated during the period from 7/16/03-9/29/04 (+10.3 cm and +44 lbs.).

Blood results: Slight reversal of heterophil/lymphocyte ratio but normal white blood cell count. The alkaline phosphatase was slightly elevated but down from previous years of rapid growth.

Turtle # 5 mature male

Metal tags: left front 10619, right rear 10620

Microchip # 91D

Measurements:

SCL 83.0 cm.

Weight 239.4 lbs.

Change from 9/29/04: +. 4 cm., +13.4 lbs.

Body condition good

This turtle had a good weight gain but very little growth.

Blood results: A reversal of the heterophil/lymphocyte ratio but a normal white blood cell count.

Turtle # 6 mature female

Metal tags: left front 10621, right rear 10622

Microchip # F37

Measurements:

SCL 90.0 cm.

Weight 222.0 lbs.

Change from 9/29/04: + .5 cm., - 7.7 lbs.

Body condition fair as a flat plastron was noted.

This turtle showed very little growth and a weight loss of 7.7 lbs.

Blood results: The calcium value was elevated and the cholesterol level was also elevated. This is probably related to egg production at this time of the year.

Turtle Hawksbill mature male

Metal tags: left front 10615, right rear 10616

Microchips: left rear 42D, right rear 927

Measurements:

SCL 78.7 cm.

Weight 133.1 lbs.

Change from 9/29/04: + .1 cm., + .1 lbs.

Body condition good. Soft plastron

This turtle had no weight gain or growth. The soft plastron has been related to males during the breeding season.

Blood results: There were elevations of alkaline phosphatase, LDH and cholesterol.

These elevations have been seen in the past two samples and the significance unknown.

GENERAL COMMENTS AND RECOMMENDATIONS

1. There was a change in turtle pellet size from 6mm to a smaller size of 2mm. This was due to some misunderstanding or error in the order. I am concerned about the lack of growth and general lack of weigh gain (and loss) in the overall population. This could be related to the pellets. It was noted by the person feeding that "the turtles do not like the smaller pellets". I recommend the correct pellet size be fed as soon as possible.
2. As noted in past reports, some of the normal blood values in sea turtles are not known. It has been found that values might vary with time of year, age, sex, species, locality and even methodology. We now have a baseline of three values for these turtles. Comparison with past values can be very helpful. In general I do not see any change in values that give me any concern as to the health of the turtles.
3. I recommend continued addition of turtle friendly fish and invertebrates to the pond in co-operation with the marine science program of the high school. Also encourage use of the pond for marine science projects. I have, in the past, encouraged interaction with the high school on Ebeye but did not note any action taken. I would once again encourage field trips to the pond with lectures on sea turtle biology and conservation. The conservation and future knowledge of turtles in this area is dependent on the youth.
4. Plans have been made to release four of the turtles and place satellites on two. This will greatly alleviate the turtle aggression problems and allow the barrier to be removed. It will also help the water quality of the pond by decreasing fecal and food load as well as decreasing competition for food. The tracking information may increase our knowledge of turtle movement in the area and create an educational opportunity in the high schools. The Hawksbill should be one of the primary turtles to be released because of his aggressive biting behavior.

5. There is a continuing faction of people that feel all of the turtles should be released. The final decision is up to the base commander who in the past has rejected the idea. The problem is the commander's change every two years and I believe they do not want to make any controversial decision concerning the turtles. There is no doubt that at least four of the turtles should be released. The sooner this happen the better. The most important factor for retaining any turtles would be for educational purposes, not just passive but active at the school and resident level. If all turtles were released, a nice sea life exhibit could be developed.
6. I recommend developing a simple brochure on sea turtles that could be available at the pond and in the various stores. This could be constructed of single page heavy-duty paper with pictures and information on both sides. I could provide examples if requested.
7. Continue the yearly veterinary examinations and maintain close observations of the turtles. The feeding records and the monthly water quality reports should be continued.

I would like to thank Cathy Madore of the Kwajalein Range Service and Environmental Safety and Health, for her help and effort in setting up the exams and organizing the turtle exams. Also thanks to all of her staff and assistants for the hard work of turtle handling. Thanks to Jen Schwartz, veterinary technician, for her valuable assistance.

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