

SUMMARY OF EVENTS CONCERNING THE OLIVE RIDLEY
(LEPIDOCHELYS OLIVACEA) TURTLE NEST
FOUND IN PAIA, MAUI -- SEPTEMBER, 1985

by

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Summary of Events Concerning the Olive Ridley (Lepidochelys olivacea)
Turtle Nest Found in Paia, Maui -- September, 1985

by

Skippy Hau, Aquatic Biologist

The following is a summary of events during the period September 30, 1985 through December 18, 1985 concerning sea turtle nesting found in Paia, Maui.

9/30/85
Monday

Mr. Wayne Takakura called the Wailuku office at 1445. He reported that Mr. Kenneth Y. Oishi, a Paia fisherman, observed a turtle nesting on a beach in Paia during the afternoon.

I visited the nesting area and marked the location. According to Mr. Oishi, the turtle was about 2½-feet in length. He initially thought the turtle was lost. It crawled up the beach and began digging. He watched the turtle nest and re-dug the nest to confirm that eggs were laid. Later, Mr. Oishi contacted Mr. Takakura who contacted us.

The nest was located 34 feet from two rocks placed as markers about the high water mark.

Mr. George Balazs of the National Marine Fisheries Service and Mr. Rene Sylva, a botanist at the Maui Zoo and designated Maui assistant were informed of the nest discovery. The next day I showed Mr. Sylva where the nest was. He lives about two house lots down from the nest. He helped check the beach for any further nesting activity and watched the tides to prevent the embryos from drowning.

10/17/85
Thursday

That evening I was contacted by Rene Sylva and George Balazs. Several high tides were reaching the area of the nest. Given the possibility that the embryos could drown from the saltwater, we were given permission to recover the eggs.

10/18/85
Friday

Mr. Rene Sylva and I went to recover the eggs from the nest. Approximately four high tides had already reached the nest. We dug down about 1½ to 2 feet before reaching the nest.

The clutch contained 88 eggs, similar in size to pingpong balls. Holes were poked in the bottom of a green plastic 20-gallon garbage can. The eggs were placed in the garbage can and packed with moist sand taken from the nest. The sand was extremely moist because of two days of heavy rain.

Two of the 19-day old eggs were randomly selected to determine the progress of development. The white-opaque eggs were broken to reveal a milky liquid; a light yellow yolk with the consistency of melted butter; and a developing embryo between one-half to one centimeter. The embryos were later sent to George Balazs for identification.

I kept the eggs at my house in Spreckelsville because due to prior commitments on a Kahoolawe re-vegetation project, Mr. Sylva could not watch the nest.

Based on the shell size, according to Mr. Balazs, they at first appeared to be hawksbill turtles (Eretmochelys imbricata).

During the month of December, we experienced several days of cold weather. With cooler temperatures, the eggs were expected to take longer to develop.

12/11/85
Wednesday

I removed one egg and checked for development. The embryo was 73 days old. The egg was white and turgid, unlike the soft wrinkled eggs that were excavated from the nest. It weighed 30.3 grams. There was a heartbeat of 76 beats per minute (19 beats in 15 seconds). Light did not penetrate when held near a bulb. The embryo was alive and a yellow yolk sac, the size of a quarter, still attached. The embryo was totally black in color. There were three ridges of bumps along the length of the dorsal side (these would later be used to help identify the species). The straight carapace length was 40 millimeters (total length was 64 mm).

12/14/85
Saturday

The first hatchling was discovered breaking through the sand at 0730. The second was seen after 0800.

12/18/85
Wednesday

George Balazs flew over to inspect and recover any hatchlings. Four hatchlings were crawling on top of the sand. Another seven were found at various depths of the nest.

He identified the turtles to be Olive Ridley (Lepidochelys olivacea).

The remaining 85 eggs in the clutch were accounted for and categorized into seven stages of development.

Seven Categories of Development

| | |
|----|------------------------------------|
| 11 | Hatchling |
| 5 | Live embryo still in egg with yolk |
| 17 | Turgid egg |
| 18 | No development |
| 17 | Fertile embryonic mortality |
| 8 | Half developed but dead |
| 9 | Advanced development but dead |
| 85 | Total eggs remaining in nest |
| +3 | Analyzed for development |
| 88 | Total eggs in clutch |

George Balazs transported the 11 hatchlings, 22 developing embryos, and samples of the dead embryos back to Oahu. The hatchlings are being held in captivity at Sea Life Park. Some of the dead embryos will be given to the Bishop Museum for their specimen collection.

LOWER PAIA - 20° 55' N
156° 23' W



Beach in Paia where nest was found
(Kahului direction)



Beach where nest was found (Paia direction)



Four hatchlings crawling on sand



Recovered hatchlings



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

December 22, 1985

F/SW2:GHB

Mr. Skippy Hau
Aquatic Biologist
Division of Aquatic Resources
P. O. Box 1015
Wailuku, HI 96793

Dear Skippy:

I am writing to commend you for the work you accomplished in rescuing the doomed clutch of turtle eggs laid at Paia, and then successfully incubating them at your home. Without your intercession, the eggs would clearly have been lost to storm surf and we would never have known that the nesting was by an olive ridley, Lepidochelys olivacea. As you are aware, this is the first such record for the Hawaiian Islands, although we are regularly documenting ridleys tangled in scraps of trawl net in our offshore waters.

At present there are 14 hatchlings alive at Sea Life Park. Twelve eggs are still being incubated here at our laboratory, and I feel certain that at least half of these will hatch. Considering that the clutch was originally washed over by waves for a day or two, it is a great credit that any hatched at all.

When decisions have been made by the Recovery Team and other proper authorities, I will let you know what we plan to do with the hatchlings when they are ready to be released.

Sincerely,

George H. Balazs
Zoologist

cc: E. C. Fullerton
W. G. Gilmartin
Recovery Team

G: Paia, Rid

NATIONAL MARINE FISHERIES SERVICE
HONOLULU LABORATORY
P. O. BOX 3830
HONOLULU, HAWAII 96812

Results of the olive ridley nest laid at Paia, Maui on September 31, 1985 and subsequently rescued from storm surf on October 18, 1985 for incubation in an artificial container.

| | |
|--|-----------|
| Eggs hatched | 31 |
| <i>Hatchlings dead shortly after hatching</i> | <i>13</i> |
| Eggs with partially developed but dead embryos | |
| Early embryonic mortality | 19 |
| Mid-embryonic mortality | 8 |
| Late embryonic mortality | 11 |
| Eggs with no apparent development (presumably infertile) | 19 |
| Total Eggs in clutch | <hr/> 88 |
| Percent eggs that hatched | 35% |
| Hatchlings alive at Sea Life Park on 12-30-85 | 18 |

DATE HATCHLINGS WERE FIRST SEEN - 12-14-85 (75 DAYS)
DATE THAT LAST EGGS HATCHED - 12-25-85 (86 DAYS)