Sea turtle behaviour and conservation at Alphonse Island – Part 1 Hatchling Survival

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Aurélie excavates a turtle nest. She estimates the egg clutch survival and rescues any straggler turtles that she encounters.

Newly hatched sea turtles work together in an interesting example of social cooperation to escape from their nest. The first baby turtle to hatch usually does not start digging until enough of its brothers and sisters are also free of their eggshells and able to join forces together.

During the first hours of their life, hatchlings show an amazing group organisation. Depending on their position in the nest chamber, the turtles share different tasks: the hatchlings on the top scratch down the ceiling, those on the sides undercut the wall, those on the bottom compact the sand that arrives from above. On average, a turtle nest is between 50cm to more than 1m deep, with those of Hawksbills being consistently shallower than those of Green Turtles. The vertical displacement of the group can take several days (about 4-6 days), during this progressive ascension turtles take frequent breaks to rest. Unfortunately, it frequently happens that some offspring hatch too late. Without the assistance of the group they may die of exhaustion and suffocation in the sand column.

The ICS team rescues straggler hatchlings from the turtle nest

2012-2013 was a good season for nesting Green and Hawksbill Turtles on Alphonse, so we

were able to study the survival rate of a large number of nests. Each new turtle nest recorded during our daily turtle monitoring is flagged so we can easily find it again later. We also record the species, the GPS Waypoint and the laying date. This last information helps us to anticipate the hatching date knowing that the incubation lasts between 52-74 days.

A hatchling green turtle removed from the bottom of its nest. It was alone among the empty egg shells that its nest mates left behind.

The period of incubation is influenced by temperature, with warmer nests having a shorter incubation period. We also know that hatching has occurred by checking the sand around the nest site for flies or flipper tracks of baby turtles. Often we find a depression in the sand just above the nest that indicates when the hatchlings have arrived near the surface of the sand. All these clues help us to locate the egg chamber. Then we carefully dig by hand until we reach the empty shells and any dead, unhatched eggs. We do all this to record rates of egg clutch survival in the nests. Sometimes we find dead hatchlings at the bottom of the nest.

But, sometimes we are very excited to find live hatchlings -- the stragglers. Only a few generally stay behind. But we are thrilled to be able to rescue them. These rescue efforts of only a few individuals may appear insignificant knowing that out of the entire nest of hundreds of hatchlings maybe only two or one (...or none), will ever reach sexual maturity after the approximately three decades that it takes for them to grow to adulthood. But we keep up our efforts because the one that we save today just might be the one that will come back as an adult 30 years later!

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