

Survey of the Beach

To establish a long-term nesting beach monitoring program is important to define the survey area. **The survey area must be measured.**

It is useful to partition the beach into equal segments or zone.

The maximum distance recommended for survey zone is 1,0 km.

Zone can be demarcated by posts or by permanent records (building, river, etc.).

Data to be collected during beach patrol:

Identification and counting of tracks and body pit.

Identification and counting of the false tracks.

Recommended:

To follow the shoreline while looking for tracks. Emerging turtles leave tracks that start from the shoreline of that night.

Do the beach patrol every day throughout the nesting season.

Do the patrol early in the morning at the same time each day.

Keep in mind that:

- 1) Wind can obliterate the tracks depending upon intensity, duration and direction.
- 2) Rainfall can obscure crawls and confounds crawls identification and Tides and waves will also make difficult to distinguish between old and fresh tracks.
- 3) Human Activity on the beach obscure crawls, body pits and other nest field signs. **It is important to have an understanding of the level of human activity on your survey beach.**

- 4) Observer error can influence survey accuracy. It is desirable that the Observer has been trained.
- 5) Organize a single data sheet very simple that all observer of that beach can use.

Locating the nest before the emergence

To locate the eggs a short thin stick of about 1 cm in diameter and 70-90 cm in length is pushed gently into the sand at various places in the nest. The sand “gives” easily where the egg chamber is.

For the Green Turtle the egg-chamber is usually about **2 meters from standing point of the nest**, where the turtle began digging.

For the Loggerhead **the egg-chamber is about 0,50 to 1 m.**

It is good practice to mark the location of the chamber with a stick.

On most beaches it is not usually possible to locate the egg-chamber in Green turtle nests with a stick, as the chamber is fairly deep, unless a layer of sand (30 cm), is removed first.

Loggerhead nests do not present such a problem.

At the end of the nest there is a depression caused by the turtle as she digs up sand to cover the chamber.

The direction of the footprints in the tracks and the point of departure of the tracks from the nest are indicators of the start point and the end of a nest.

Tracks going the nest are covered by sand throw up by the turtle in digging and covering the nest.

The tracks leading away from a successful nest go straight back to the sea

Temperature monitoring

Incubation takes about seven weeks but may vary from 44 to 60 days or more, varying with the incubation temperature.

The temperature in the nest itself will be higher than that of the surrounding sand as result of metabolic heat.

The temperature of the eggs gets even higher just prior to hatching and may then be 2-3°C or more above the temperature of the sand.

The temperature in the egg-chamber can be monitored with a thermistor probe or several probes buried at different depths. Such work requires an accuracy of at least 0,1°C. (We used: CEFAS and i-Button DS1923-FS data storage tags).

To monitor the temperature without disturbing the nest, measurements are taken out in proximity of the nest, each day every six hours, at **20 cm** and **40 cm depth**. These temperatures are assumed most closely those experienced by the eggs at the top and bottom of the egg-chamber.

Temperatures of the sand are taken manually with a hand-held digital immersion thermometer.

Tools needed

- ✓ Thermistor probes and hand-held digital immersion thermometer.
- ✓ Graduated metal rod for digging at 20 and 50 cm in the sand next the nest
- ✓ Data sheets