

Leatherback Turtle Carapacial Tag Attachment Protocol



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Based on the protocol developed by Matthew Witt at the Centre for Ecology and Conservation at the University of Exeter.

Turtles deemed suitable for attachment of electronic tags should be in good physical condition with no obvious injuries and no apparent abnormal nesting behavior. Turtles should have a pronounced medial ridge facilitating equipment attachment. Ideally, the attachment of equipment should occur during the egg laying process so as to minimize disturbance.

Materials:

- Equinox40 Slow Set Silicone Putty
- Hibiscrub Surgical Scrub—PMC0296
- Anti-skid Orthopedic Drill Bit—4.5 mm x 130 mm
- Battery drill and spare batteries
- Sterile water
- Sterile scrubbing brush
- Sterile paper towel
- Protective eye wear and **vinyl** gloves (latex gloves will inhibit Equinox40 curing)
- Crimping tool
- Wire cutting pliers
- Pliers to grip and tension attachment wire
- Tag attachment wires, plastic beads, and crimps

Attachment Protocol:

1. After selecting a suitable turtle, put on your vinyl gloves. Rinse the area where placing the tags with sterile water. Then clean the area with Hibiscrub and a sterile scrubbing brush. Rinse again with sterile water and dry with a sterile towel.
2. Two horizontal holes are drilled below the apex of the medial ridge. The holes are drilled using a sterile 4.5 mm x 130 mm anti-skid stainless steel orthopedic drill bit at intervals dictated by the particular tag to be attached.





3. Mix Equinox40 Slow silicone putty into two sausage-like rolls, one for each side of the dorsal ridge. Curing time is temperature dependent.
4. Spread the semi-cured Equinox putty under the tag to ensure a conformal fit. ***Note: the tag antenna is normally positioned towards the turtle's head.***



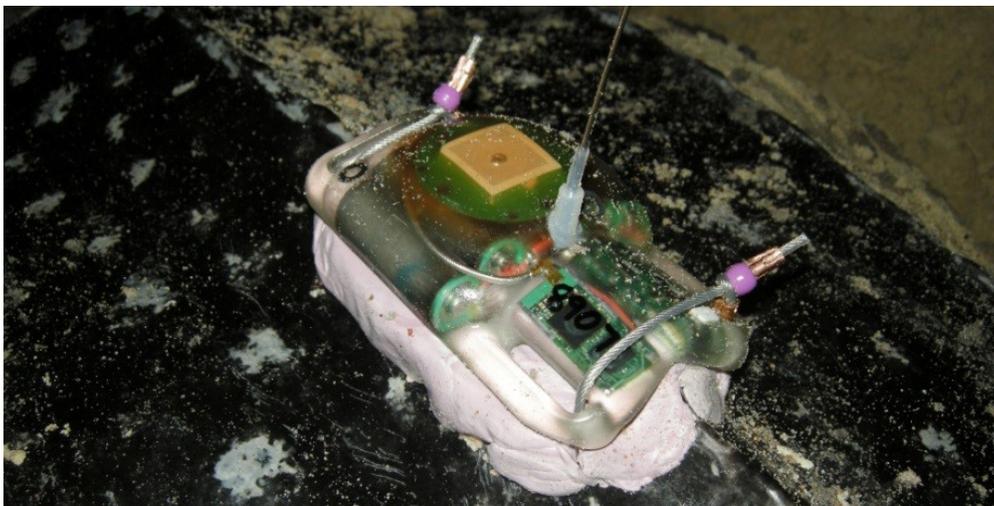
5. Tags are attached to turtles using either nylon-coated braided stainless steel wire or monofilament line. If a larger diameter attachment wire is preferred, then the material can be covered with a thin-walled silicone or Tygon tube. Copper or stainless steel crimps can be used to crimp the attachment wire.

6. The procedure used depends upon whether a 1-loop or 2-loop tag is being attached:



- For 1-loop models, one end of the attachment wire is folded back on itself to form a small loop which is then crimped. **Note: that loop must be smaller than the plastic bead.** The free end is passed through the rear carapacial hole in the dorsal ridge through the lengthwise tube on the side of the tag, then through the other lengthwise hole in the tag and through the loop formed earlier. A plastic bead is used to apply pressure between the crimp and loop. Tension is then applied to the wire to hold the tag securely on the turtle before the crimp is closed and excess wire cut off.
- For 2-loop models, two separate attachment wires are required, one each for the front and rear loops. A loop is formed at the end of each wire as described above. The attachment wires are then fed through their respective carapacial holes in the dorsal ridge and crimped with a bead and copper crimp. Excess wire should be cut off.

Note: A GPS position, genetic samples, and other biological measurements should be taken during the attachment process. The curved carapace length (CCL) from the nuchal notch of the carapace to the apex formed at the rear of the carapace, and the curved carapace width (CCW) from the widest part of the carapace across the dorsal side, should be measured using a flexible measuring tape.



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