



**Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
Guidelines for Marine Turtle Permit Holders**

**Nesting Beach Surveys
TOPIC: CRAWL IDENTIFICATION**

GLOSSARY OF TERMS:

Crawl -- Tracks and other sign left on a beach by a sea turtle.

False crawl -- A crawl resulting from an abandoned nesting attempt (a non-nesting crawl).

Nest -- A crawl resulting from a nesting attempt in which eggs were deposited.

Egg chamber -- The cavity excavated by the rear flippers of a nesting turtle into which the turtle deposits a clutch of eggs.

Primary body pit -- The excavation made by a turtle on the beach just prior to digging the egg chamber.

Backstop -- An approximately 45° incline made in the sand as sand is pushed back with the rear flippers during the excavation of the primary body pit. Such a steeply inclined backstop is not present in the secondary body pit.

Secondary body pit -- An excavation made by a nesting turtle using the front flippers following the deposition of eggs. The spoil from the secondary body pit covers the primary body pit and the egg chamber with sand.

Escarpment -- The perimeter of the secondary body pit where the front flippers have cut away a small cliff into the surrounding sand.

CRAWL IDENTIFICATION:

I. What species made the crawl?

- A. Track appearance as in Figure 1, loggerhead track: tracks from a sea turtle with alternating limb movement, no tail drag mark, and track width approximately 25 inches: **loggerhead turtle** (*Caretta caretta*).
- B. Track appearance as in Figure 1, green turtle track: tracks from a sea turtle with simultaneous limb movement, a center drag mark from the tail, and track width approximately 35 inches: **green turtle** (*Chelonia mydas*).

- C. Track appearance as in Figure 1, leatherback track: tracks from a sea turtle with simultaneous limb movement, a center drag mark from the tail, and track width approximately 45 inches or more; track path often circling or sinusoidal (S-shaped): **leatherback turtle** (*Dermochelys coriacea*).

Note: Flipper injuries to turtles may influence track sign. Characteristics of the nest (given below) should be used in conjunction with track characteristics to identify species.

II. If the crawl is from a loggerhead, is it a nest or a false crawl?

- A. Identify emerging and returning tracks by their direction (Figure 1). As a loggerhead crawls, it will push sand backward with each flipper stroke.
- B. Follow the path taken by the turtle and look for the following attributes.
1. Evidence of front flipper covering (Figure 2). If present, the crawl is a **NEST**.
 - a. Secondary body pit and/or escarpment.
 - b. Sand "misted" or "thrown" over the emerging track.
 2. Evidence of an abandoned nesting attempt (Figure 2). If present, the crawl is a **FALSE CRAWL**.
 - a. Very little or no sand disturbed other than tracks.
 - b. Back stop with sand pushed back (not thrown) over emerging crawl, typically between two ridges of sand piled by the front flippers during construction of the primary body pit.
 - c. Considerable sand disturbed from a digging effort, but with the crawl exiting the disturbed area and continuing toward the dune before turning toward the ocean.
 - d. Considerable sand disturbed from a digging effort, but with a smooth-walled or collapsing egg chamber (8-10 inches in diameter) in the center of a pit within the disturbed area.

III. If the crawl is from a green turtle, is it a nest or a false crawl?

- A. Identify emerging and returning tracks by their direction (Figure 1). As a green turtle crawls, it will push sand backward with each flipper stroke.
- B. Follow the path taken by the turtle and look for the following attributes.
 - 1. Evidence of front flipper covering (Figure 3). If present, the crawl is a **NEST**.
 - a. Sand thrown into a mound that is more than twice as long as the visible body pit or a deep (1-2 foot) secondary body pit with an escarpment (Figure 3).
 - 2. Evidence of an abandoned nesting attempt. If present, the crawl is a **FALSE CRAWL**.
 - a. Very little or no sand disturbed other than tracks.
 - b. Less sand thrown over the emerging track and a shallower body pit than in 1a above (Figure 3).

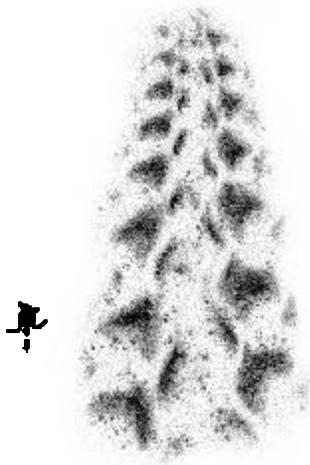
IV. If the crawl is from a leatherback turtle, is it a nest or a false crawl?

- A. If the crawl consists of a large expanse of beach (10x15 feet to 15x25 feet, sometimes greater) having extensive sand thrown and often in multiple directions, the crawl is a **NEST**.
- B. If the crawl is less extensive than in A and has little evidence of thrown sand, the crawl is a **FALSE CRAWL**.

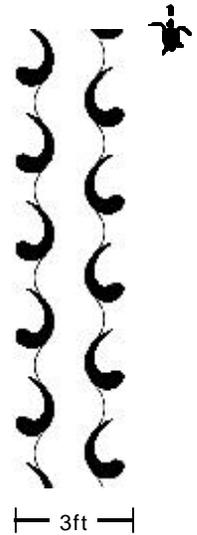
Note: The extent of the excavations described for all species above will be influenced by sand type, vegetation, and other objects encountered by turtles while digging.

Figure 1. Characteristics of sea turtle tracks found on Florida beaches.

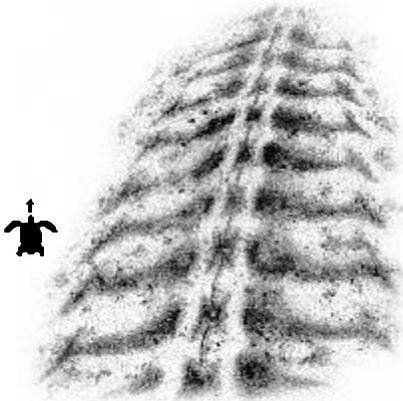
LOGGERHEAD



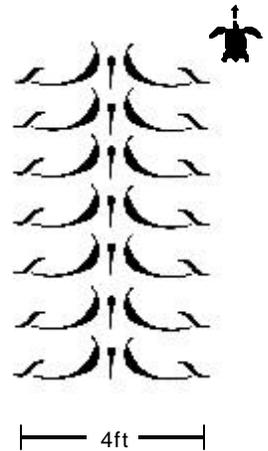
- A. Alternating comma-shaped flipper marks
- B. Wavy and smoothed track center with no thin, straight, and well-defined tail-drag mark
- C. No regular marking from front flippers at the margins of the track



GREENTURTLETRACK



- A. Parallel flipper marks as from a "butterfly-stroke" crawling pattern
- B. Ridged track center with a thin, straight, and well-defined tail-drag mark that is punctuated by tail-point marks
- C. Regular marking from front flippers at the margins of the track



LEATHERBACK



- A. Parallel flipper marks as from a "butterfly-stroke" crawling pattern
- B. Ridged track center with a thin, straight, and well-defined tail-drag mark that is punctuated by tail-point marks
- C. Extensive marking from front flippers at the margins of the track And extending the total track width to 6 - 7 feet

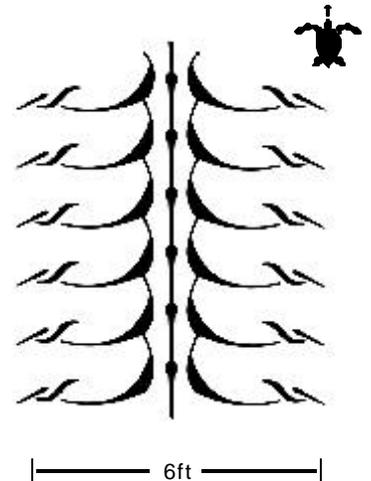
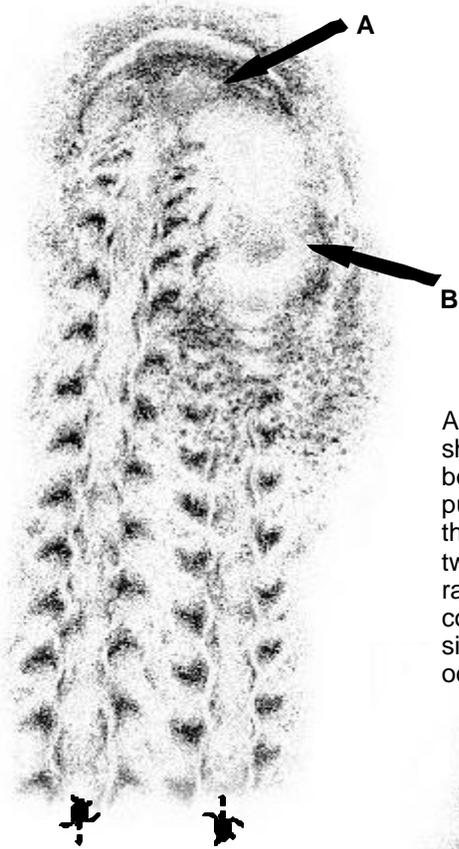
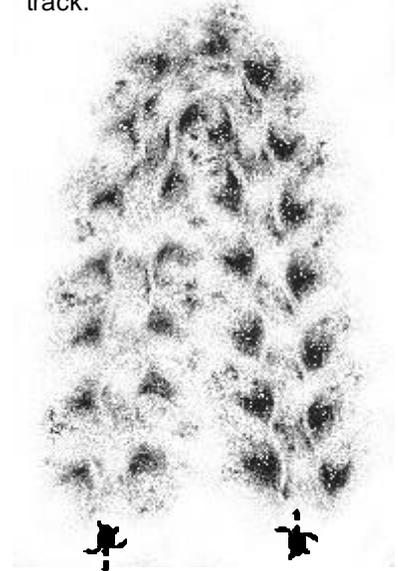


Figure 2. Characteristics of **loggerhead crawls** indicating either that the turtle had previously nested (left a nest) or had abandoned its nesting attempt (left a "false crawl").

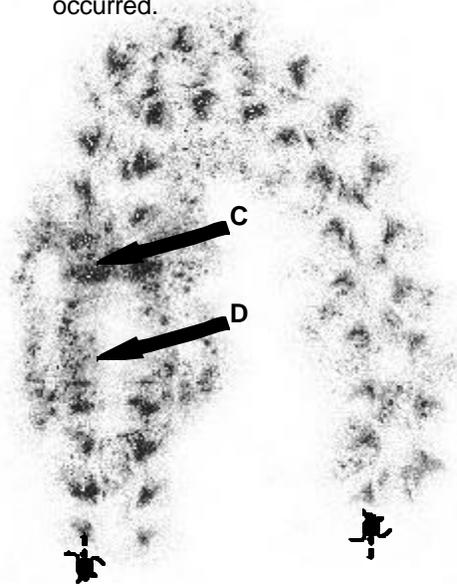
A **loggerhead nest site** showing a secondary body pit (**A**) and a mound of thrown sand (**B**) that is wider than the track.



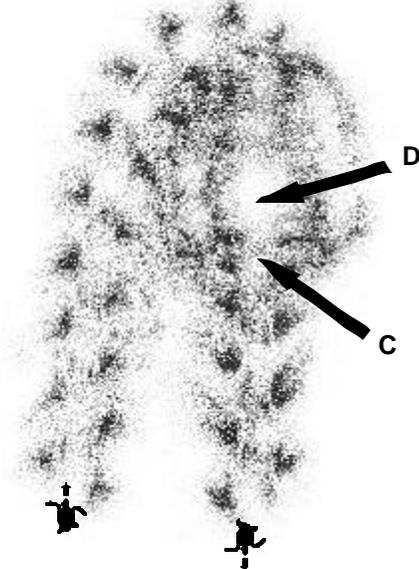
A **loggerhead false crawl** showing no evidence of disturbed sand other than the track.



A **loggerhead false crawl** showing an abandoned primary body pit (**C**) and a mound of pushed sand (**D**) no wider than the track and lying between two conspicuous ridges. As is rarely found in nests, a track continues up the beach from the site where the turtle's last digging occurred.



A **loggerhead false crawl** showing a small abandoned primary body pit (**C**) and a mound of pushed sand (**D**) no wider than the track and lying between two conspicuous ridges.



A **loggerhead false crawl** showing a primary body pit with an abandoned egg cavity (**E**).

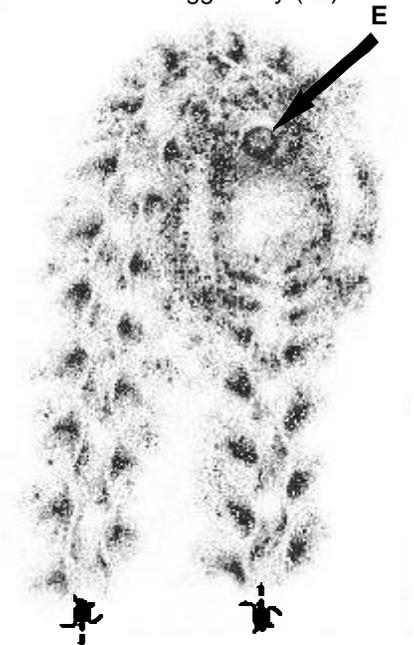
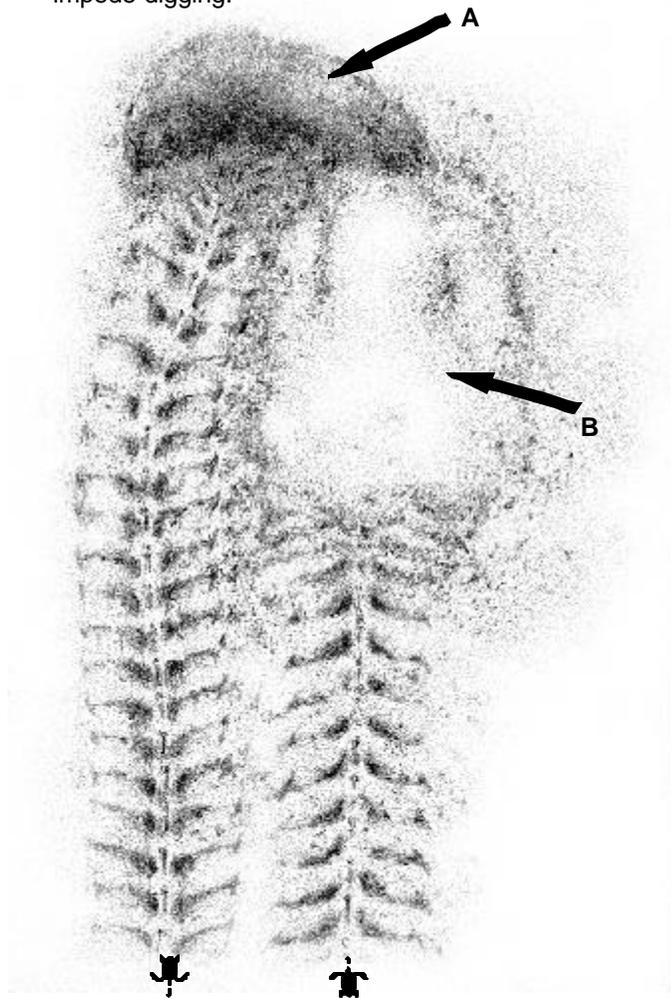


Figure 3. Characteristics of **green turtle crawls** indicating either that the turtle had previously nested (left a nest) or had abandoned its nesting attempt (left a “false crawl”).

A **green turtle nest** site on an open beach showing a secondary body pit (**A**) and a mound of thrown sand (**B**) that is greater than twice as long as the visible secondary body pit. Note that smaller nest mounds are expected when obstacles or vegetation impede digging.



A **green turtle false crawl** on an open beach showing an abandoned primary body pit (**C**) and a mound of thrown sand (**D**) that is smaller than twice as long as the visible primary body pit. Note that many green turtle nests may have body pits and nest mounds that look similar to this.

