

**FWC FISH AND WILDLIFE RESEARCH INSTITUTE
NEST PRODUCTIVITY ASSESSMENT (NPA) PROTOCOL**

- 1. Reporting Requirements:** The spreadsheet for reporting data for NPA will be provided by FWC/FWRI.
 - a. As outlined in the section, “Hatch Success Evaluations (Nest Inventory)” of the Conservation Handbook, you are required to provide NPA data if you: (1) conduct nest inventories on any of your nests; (2) relocate nests; and/or (3) restrain-cage nests.
 - b. Nest inventories conducted as part of beach construction projects must be reported on the Project/NPA , which will be emailed to each permit holder who has a project monitoring requirement on his/her beach.

- 2. Measuring Seasonal Productivity:** The following guidelines describe how to determine the percentage of eggs that hatch on your beach by measuring hatchling production in a sample of nests that represent your beach. It is not necessary to inventory all of your nests. Instead, you mark a representative sample of nests (130 – 150 nests by species) and monitor these nests throughout the season to provide a statistically valid subsample to represent your beach. This will allow comparisons among beaches and among years.
 - a. **Choosing sample nests to mark:** If you choose to provide data for measuring seasonal productivity, you will need to select a sufficient number of sample nests of each species that represents your entire beach and nesting season. A sample of nests that is not properly representative can over- or under-represent certain zones on the beach or certain portions of the season. If you have more than 130 nests of any species annually, a sampling strategy will be provided by FWC/FWRI [Beth Mongiovi (Brost), 727-502-4738 or Beth.Mongiovi@MyFWC.com].
 - b. **Sampling Period:** It is important to measure hatchling production for the entire nesting season (March to October). For all species, please begin nest marking as soon as you start your nest surveys and continue to the end of the season.
 - c. **Nest Marking:** Sample nests should be marked in such a way that you can locate the egg chamber 72-hours after the first hatchling emergence or 70 days of incubation, whichever is shorter. Nest marking methods include triangulation, as described in the Conservation Handbook under the heading, “Marking nest sites to determine hatching success”, as well as marking the nest with stakes, signs, and ribbons. The method you choose should be able to withstand waves, wind, and vandalism.
 - d. **Monitoring of marked nests:** Observe each marked nest every morning during the incubation period until three days after the first hatchling emergence or 70 days of incubation, whichever is shorter. **IMPORTANT:** Give marked sample nests the same treatment as other nests.
 - 1) Make decisions to relocate, screen, or cage the nest before it is chosen as a sample nest.
 - 2) Treat sample nests like other nests, that is, ‘clean up’ depredated sample nests only if this practice is carried out for all other nests. NOTE: Caging, screening, and nest relocation must be in compliance with the FWC/FWRI Handbook.
 - e. **Monitoring Frequency:** Each marked nest should be monitored no less than every other day. Checking on the nest this frequently allows 1) for the collection of important nest-fate information (e.g., predation), 2) for the timely replacement of lost flags/stakes, and 3) for the identification of hatchling emergence date(s).
 - f. **Nest Inventory:** Record the observation of hatchling emergence sign (if emergence occurs) and emergence date(s) for each sample nest. At three days after the first hatchling emergence or at 70 days incubation, whichever is shorter, inventory the contents of each marked nest and record the information on the FWC/FWRI NPA spreadsheet. To determine egg fates (hatched, unhatched, etc.) follow the instructions for “Nest Success Evaluations” in the Florida FWC/FWRI Handbook. Sample-nest inventories for loggerhead and green turtle nests should occur no later than 5 days after the last hatchling emergence or 70 days after the eggs were laid.