Oiled Wildlife Care Network
Wildlife Health Center

PROJECT ABSTRACT

State the objectives, specific aims and the significance of the project, and describe the methodology used to achieve these goals. Avoid summaries of past accomplishments. The abstract is meant to serve as a succinct and accurate description of the work when separated from other portions of the proposal. Do not exceed the space allowed; 10 pt. font and singlespacing is allowed for this section only. Do not use abbreviations in the title.

P.I. NAME and AFFILIATION: Hannahrose M. Nevins, Marine Veterinary Care and Research Center

FUNDING AMOUNT REQUESTED: $ 71635

PROJECT TITLE: Hot birds in cold water: using thermography and thermal microchips to improve oiled seabird rehabilitation (Thermography Year 2)

Abstract: Our objectives are to design and test protocols for the use of two new technologies: infrared thermography and subcutaneous temperature-sensing microchips, to assess thermal homeostasis of seabirds and to use that information to improve oiled seabird care during rehabilitation. Results from year one of this study indicate that thermography is effective for locating areas of compromised insulation, and is less invasive, less stressful for the birds (and rehabilitation personnel), and much faster than traditional waterproofing assessment methods. Thus, infrared thermography shows great promise in expediting assessment of waterproofing and thermal stability during oil spill response. However, we identified several behavioral (diving), physiological (molt), and environmental variables (thermal radiation) that interfered with accurate assessment of thermal stability with thermography. In year two, we will develop methods to quantify and minimize the effects of these factors by investigating the following hypotheses: 1) core body temperature of seabirds follows a predictable diel pattern; 2) body surface temperature is more variable than core temperature and is greatly influenced by environmental and behavioral factors; and 3) increased time in rehabilitation will result in increased thermal stability associated with improved body condition and waterproofing. For oiled birds, we expect that compromised plumage integrity, reduced diving ability, and poor body condition may prolong the time required to regain thermal stability. To make specific recommendations for improvement of oiled bird rehabilitation techniques, we will determine the ideal conditions for use of thermography and thermal microchips, accounting for behavioral and environmental factors using activity loggers and behavioral observations.