

Abstract

Thermal Imaging and Subcutaneous Temperature Monitoring for Oiled Sea Otters

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Two relatively new technologies, thermal imaging by infrared photography and temperature sensitive passive integrated transponder chips (PIT tags) proved very useful for following the recovery to full water repellency of the pelage of both experimentally washed and oiled sea otters. IR thermography allows detection of areas of heat loss that is not apparent to the observer or by via regular photography, some ability to calculate heat loss, and hopefully, the progress of coat recovery over time. IR cameras are expensive and somewhat more complicated than digital cameras, but they can now be used on active moving animals, costs are coming down and capabilities and improving. They are easier to use when animals haul out, and in research setting than in field use. Thermal PIT tags also have limitations, but they provide an inexpensive and relatively non-invasive way to determine when fur in oiled or washed areas has recovered to the point that it is providing local insulation. They are a better indicator of coat recovery than internal core body temperature reading VHF radio transmitters. Used together these two technologies provide significantly improved real time means to monitor critical thermal challenges faced by oiled and washed sea otters and thus to provide optimal care and modify treatments according to the animals needs.