CAS DATALOGGERS

Wildlife Monitoring Equipment Essential For Conservation and Research

Grant Data Logger for Animal Skin Temperature Measurement

Zoos, shelters, universities and other organizations often need wildlife monitoring equipment to measure and record temperatures from animals for conservation and research. These applications include both short-term and ongoing projects in species conservation, animal husbandry and incubation. In many of these projects, staff also need alarming capability for key events like new arrivals, sick animals, infant births, and other emergencies. At CAS DataLoggers we regularly receive calls from customers working in these applications and help them to find the right data logger for their project.

Here are three common examples of data collection methods which our experienced Applications Specialists have helped provide for our customers:

Monitoring External and Internal Temperature

A common application involves continually monitoring animals by recording their skin or internal temperature data. Surface or rectal temperature probes (usually thermistors) connected to portable data loggers are an effective means for measuring and viewing all the minute temperature changes occurring over both short and long time periods. After looking at the data, staff can then take preventative measures to help prevent a fever, serious infection, or disease.

For easy accessibility, all these temperature readings should be clearly displayed on a compact device with user-set alarm thresholds. When deciding on a model of temperature recorder, a handheld device is a big asset in limited space enclosures and observation areas. As an example, the portable Grant SQ2010 Portable Universal Input Data Logger can connect to thermocouple or thermistor probes for extreme accuracy along with fast response times. These data loggers feature 4 to 8 universal analog inputs to monitor and record all the data they collect from highly-accurate skin or rectal temperature probes. The data logger's LCD display shows the animal's current skin temperature in real-time which is also recorded on the logger's internal memory for future analysis.

Additionally, the Grant logger's 2 alarm outputs can connect to an external alarm device (such as a light or siren) when temperatures go outside the ranges you've set. For extended recording, these universal loggers can store up to 1.8 million readings in their onboard memory. Data transfer is quickly accomplished through the logger's USB connectivity to a PC.

Ideally the device will include software to configure the device and view/organize stored data. SquirrelView software is free with Grant Squirrel dataloggers and provides a user-friendly interface along with analysis and customized reporting capabilities.

Monitoring Temperature & Humidity Conditions
inside burrows, dens, and other living spaces

Instead of monitoring animal temperatures directly which can be time-intensive, you can instead opt to record the temperatures of their burrows, dens and other habitats. As a recent example, we recently provided the environmental monitoring solution to Dave Friend, owner of the Ojai Sulcata Project Inc. in Ojai, California. The shelter adopts Sulcata tortoises and currently has 4 active burrows, spaced about 50 ft apart. Any temperatures below 50°F are cause for alarm, and conditions over 95°F also pose health risks to the animals. The temperature and humidity data had to be captured from 4 ft. underground, necessitating a wireless solution due to the difficulty of getting a good signal. Before contacting us, Friend would extend a tape measure with an attached sensor down a burrow and wait until it had taken a reading 20 minutes later. "That just took too much time. I knew there had to be a better way." He needed a wireless monitoring and alarming system which could remotely gather the environmental data and send email alarm messages to his mobile device whenever conditions went outside safe ranges.

For this application, CAS DataLoggers provided the Ojai Sulcata Project with a T&D RTR-500NW Wireless Data Logger Network Base Station and 2 T&D RTR-503 Wireless Temperature and Humidity Data Loggers. A pair of Temperature & Humidity probes were included with the loggers. Manufactured by T&D, these probes use a 1 meter-long cable length to connect to the data loggers. Transmitting the high-accuracy readings from these sensors in the burrows out to the remote base station, the loggers record a sample once an hour.

The probes were installed into the ceiling of each burrow--using a vertical conduit, Friend placed 1-inch diameter PVC pipe underground, connected to the wireless data loggers placed aboveground in small plastic boxes glued to the conduit. The data loggers each monitor a different burrow, and when Friend wants to move them around, their compact design allows easy repositioning. The wireless base station placed inside a nearby farm window communicates with the data logger in the closest burrow in a direct line with the barn about 100 ft away. This data logger is about 150 ft away from its twin in another burrow, well within each logger's 500 ft. outdoor communication range. T&D's durable construction ensures that the data loggers survive long-term exposure underground.

Meanwhile the alarm levels continually monitor all this data for any temperature or humidity reading outside the user-set safety limits. In the event of any value going out of specification, these alarms send warning emails directly to Friend's mobile phone so he can contact volunteers and take immediate preventative measures.

This wireless monitoring and alarming solution now saves the shelter a lot of work and worry. Dave Friend explained: "I think the equipment's just what I need. I want to share this with people who have Sulcatas so they know if their environment is safe for the animals, and this'll work no matter where you're keeping them."

Monitoring Water Temperature in Enclosures & Habitats

In another wildlife monitoring equipment setup, you can connect environmental data loggers to liquid temperature probes to measuring the water temperature in an enclosure or habitat, or even to record local weather conditions. For these projects, CAS Dataloggers offers you a selection of specialized data loggers supporting a wide range of sensors used in environmental monitoring to capture and record current conditions.

From simple 1 and 2-channel data loggers monitoring temperature and humidity to intelligent multi-channel instruments that can be used with weather stations and other sensors to provide real-time information and capture historical data, we can help you choose a system that meets your exact requirements. Be sure to select a datalogger that's durable, weather-resistant, and/or available in a weatherproof enclosure to handle exposure to the elements.

Whichever of these applications suits your needs, CAS DataLoggers can provide your project with effective monitoring and alarming technology for any budget. We've provided monitoring solutions for every industry and setup. Give us a call to learn more!

For more information on our Grant Data Loggers, T&D Data Logging Systems, wildlife monitoring equipment or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.