

MADGETECH DATA LOGGERS EMPLOYED FOR BLUE-FOOTED BOOBY STUDY



Photos courtesy of O. Sánchez-Macouzet

BACKGROUND

The small volcanic island of Isla Isabel, located just 15 miles off the coast of Mexico, is home to a wide variety of seabirds. One of the most iconic inhabitants is the Blue-footed Boobies, a species of marine birds known for their bright blue webbed feet, which are used to attract a mate.

The Ecology Institute of the National Autonomous University of Mexico (UNAM) conducted a **study** on the decrease in population of Blue-footed Boobies regarding the heightened divorce rate among the historically monogamous creatures. The study found that when the blue-footed boobies were together for longer, they hatched more eggs and ultimately produced more fledglings, regardless of age and reproductive experience.

CHALLENGE

Ornithologists believe that the longer the pair is together, the more coordinated they become at incubating the eggs, giving the offspring a better chance of survival. Creating these ideal thermal conditions requires complete harmonization between the birds, which will likely be disrupted after divorce.

To test the theory, the Ecology Institute of the National Autonomous University of Mexico (UNAM) needed a discrete way to monitor the temperature of the eggs during incubation.

SOLUTION

The Ecology Institute of the National Autonomous University of Mexico (UNAM) found the perfect monitoring solution with MadgeTech's **EggTemp** egg-shaped temperature data loggers.

"Since booby eggs are similar in size and colour to chicken eggs, we eventually decided to go with more reliable, ready-to-use poultry data loggers. Blue-footed boobies incubate their eggs using their characteristic webbed feet, either by spreading their webs over the clutch or by keeping it on top of their webs," explains Oscar Sánchez Macouzet, of UNAM.



In order to trick the birds into thinking the data loggers were real eggs, they were covered in dirt to be properly disguised as their avian counterparts. The birds treated the data loggers as real eggs, even having one stolen by a predator Heermann's gull.

In the end, the results confirmed their theory, blue-footed boobies with the longest pair bonds were able to establish their clutches more than a month earlier than newly bonded pairs. Excited about the outcome of the study, researchers were impressed with the durability of the EggTemp data loggers in the extreme conditions including harsh humidity, dirt, and even an atypical storm.



For assistance finding the best data logging solution for research and development projects, call us at (603) 456-2011 or email info@madgetech.com.