

Microwave Telemetry, Inc.



Around the world in 100 minutes—Part II

Dear Customers and Friends,

Our journey continues as the Argos receiver aboard a NOAA satellite completes its 100 minute journey around the world, sweeping over the many countries on the other side of the globe. In twelve hours (about seven orbits) it sees every point on earth and could potentially receive data from PTTs in every one of them. Here we present fifteen fascinating articles from dedicated scientists around the world. We thank each and every one of them for their contribution.

As I read these articles I think back to 1982 during a visit to the university of Aberdeen, when I saw a first generation satellite transmitter, destined to track Basking Sharks. These early transmitters and battery packs weighed more than any of the bird species in these articles (including Tommy King's Pelican!). One can only marvel at the rapid advances in this technology over the last twenty-two years. We at Microwave Telemetry continue to push the boundaries of this technology; as a result we now have complete units weighing less than 20 grams and shrinking. (Watch this space!) Early models have given way to very complex devices with GPS receivers, some with four internal microcomputers with thousands of lines of code and hundreds of components.

The success of a tracking project depends on more than just the flawless internal workings of a PTT. For this marvelous technology to succeed in bringing you your data, all parts of the system must work: the harness that holds the PTT on your animal, the PTT itself, the satellite, the various data links and computers used in processing the data before it is sent to your desktop. We are humbled and extremely gratified to be part of this revolution in wildlife research and conservation.

Sincerely,

Paul and the staff at MTI



United Kingdom

Satellite tracking of gannets in the North Atlantic Ocean

Recent concern over the roles of seabirds in marine ecosystems has highlighted the need for detailed information on the foraging locations and behavior of different species. Northern gannets, *Morus bassanus*, are the largest pelagic seabird breeding in the North Atlantic and have an important potential impact on marine food chains but until recently, very little was known about their foraging ranges or feeding locations.

We used satellite telemetry (lithium battery powered PTT-100s) to study the foraging trips of gannets that were rearing chicks at two colonies: Bass Rock, east of Edinburgh in the North Sea, and Great Saltee, south of Dublin in the Celtic Sea. We found that adults travelled up to 540 km from the colony (a round-trip of almost 1100 km) on a single trip. In the North Sea, adults focused their foraging activity around particular sites with high abundance and predictability of prey, and individual birds returned repeatedly to the same sites. In contrast, in the Celtic Sea, where prey appeared to have a more uniform and less predictable distribution, adults showed no such foraging area fidelity.

We are currently using satellite telemetry in conjunction with other devices including movement, depth and temperature recorders and GPS to describe the foraging behavior of birds in greater detail and to link this behavior more closely to the characteristics of the marine environment around their breeding colonies.



Keith Hamer



Northern gannets

Photos courtesy of Keith Hamer and Robert Lindner, respectively

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Keith Hamer, University of Leeds, UK