

Gulls in the Windy City: Tracking Ring-Billed Gulls with the 17g Solar Argos/GPS Transmitter



Dr. Brian Washburn is a research wildlife biologist with the USDA, Animal Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center in Sandusky, Ohio and is an adjunct assistant professor with Michigan State University, North Carolina State University, and the University of Missouri. His research program involves finding science-based solutions to wildlife-aviation conflicts, stress and reproductive physiology of wildlife and habit management of grassland ecosystems.

Many birds and mammals are very adaptive and have shown the ability to not only tolerate, but flourish, in close proximity to people. Deer, coyotes, Canada geese, crows, gulls, and other wildlife have settled into cities and large urban areas. One such species, the ring-billed gull, commonly makes its home in many large cities in North America and finds places to feed (e.g., waste management facilities, parks), nest (including rooftops of buildings), and raise young. However, the presence of large numbers of gulls in urban areas can be problematic, resulting in conflict situations between gulls and people. For example, large numbers of gulls using Chicago beaches and near-shore waters contribute to decreased water quality and problems associated with high levels of pathogens in Lake Michigan. Recent efforts to mitigate gull impacts upon water quality in Chicago, such as managing nesting colonies and chasing gulls from beaches with dogs, appear to be successful, resulting in fewer swimming bans due to elevated bacteria levels in the water on Chicago's popular beaches during the summertime.

Effective management of human-gull conflicts requires a better understanding of gull movements during their breeding season. However, given the relatively small size of ring-billed gulls (400 to 650 grams) satellite telemetry has historically not been an option. And then it happened – while reading a copy of Microwave Telemetry's Tracker News newsletter, I noticed a small article that mentioned Paul was doing what he does so well – pushing the limits and making biologists very happy! A 17g solar Argos/GPS-capable satellite transmitter had been developed, within the acceptable weight range for use on ring-billed gulls. What luck! After discussing things with my cooperators and the Microwave Telemetry staff, an effort to evaluate these new satellite units in the field on ring-billed gulls began. We wanted to answer two questions during this work: (1) how do the 17g units perform when attached to ring-billed gulls in urban areas, and (2) what are the movement patterns of ring-billed gulls?

In May 2012, four adult ring-billed gulls were captured on their nests in a colony located right next to the famed Navy Pier in downtown Chicago. Each gull was fitted with a 17g satellite transmitter and released back into the nesting colony. The transmitters were set to collect locations 7 times each day, at 3-hour intervals, during the spring, summer and fall. This was reduced to 4 locations per day during the winter. The following year (in early May 2013), five additional adult ring-billed gulls were captured using a hand-held net launcher at the 63rd Street Beach in Chicago; french fries were the "magic bait." Each gull was fitted with a 17g satellite transmitter and released on the beach.

The satellite transmitters provided location information for the ring-billed gulls from 7 to 613 days, producing over 11,000 individual locations from May 2012 to March 2014. Five gulls are still being tracked. Overall, I found the satellite transmitters were very effective in obtaining and providing location data. The satellite transmitters provided useable data ~91% of the time,

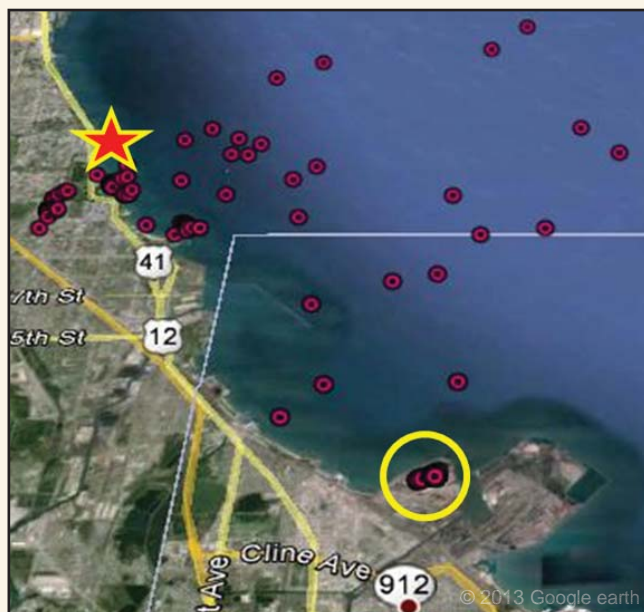


Photo by Scott Beckerman



Photo by Brian Washburn

Gull with 17g GPS transmitter. Closeup of transmitter on gull.



Locations of an adult male ring-billed gull (PTT No. 115892) during July of 2013. This bird was tagged at the 63rd Street Beach (indicated on the map with a star). This gull was believed to have been nesting within a colony located on an industrial site (denoted on the map with a circle). He used a variety of terrestrial and aquatic habitats for feeding, roosting, and other activities.

irrespective of the type of habitats that the ring-billed gulls used. This is particularly notable as the ring-billed gulls occasionally used highly urbanized areas that contained tall buildings and other structures that could interfere with data acquisition and/or transmission.

The information provided by the satellite transmitters allowed for evaluations of fine-scale habitat use, movement and activity patterns, and travel routes during long-distance movements made by these ring-billed gulls. Post-fledging movements and behavior patterns of (apparent) successfully nesting gulls showed these ring-billed gulls stayed in the Chicago area during the post-fledging period and used a wide range of areas and habitats within the urban-freshwater lake interface, including beaches popular with residents during summer months, Lake Michigan, urban areas, and other terrestrial and aquatic habitats.

The future of satellite transmitter technology and what can be learned from it is very exciting! I look forward to seeing whether the 17g solar Argos/GPS transmitter proves to work as well with other wildlife species.

Ring-billed Gulls at the colony. Photo By Brian Washburn

