

Desert Ducks: Unusual Movements of Ruddy Shelduck in China

Kyle Spragens, a wildlife biologist, and Eric Palm, a current MSc candidate at Simon Fraser University, have worked with Dr. John Takekawa on migration studies of Eurasian waterfowl in relation to Avian Influenza.



For years, our office has used satellite telemetry to map migration routes of waterfowl species all over the world. This research has increased our understanding of migration chronology, habitat use and connectivity between sites. In addition to identifying important wintering and breeding areas, we have identified countless stopover sites that birds use along the way. As we describe below, some of these sites are located in the most unexpected places.

With its brilliant rust-orange plumage, the Ruddy Shelduck (*Tadorna ferruginea*) is a visually striking duck found throughout Eurasia. Of all the waterfowl species we have marked, Ruddy Shelducks are perhaps the biggest success story. In 2007 and 2008, our team marked 26 shelducks at Qinghai Lake, China

of vegetation. However, unlike other deserts, the region contains over 100 permanent spring-fed lakes located among the tallest dunes. These lakes range from freshwater to hypersaline, and provide oases for several species of vegetation and wildlife. The little existing literature on Badain Jaran's lakes documents the presence of brine shrimp, a known Ruddy Shelduck food item.



Ruddy Shelduck in flight with 30g solar GPS PTT.

Photo by Nyambayar Batbayar

Our two marked shelducks not only stopped at these isolated lakes, but stayed for extended periods of time. Fall 2009 marked the second year that female 82117 used lakes within the Badain Jaran, having spent two months there in 2008. During its southward migration from Mongolia, male 74810 stayed for nearly a month.



Aerial photo of Lake Badain Jaran.

Photo by Z. Dong et al. Geomorphology, 2004

with 30g solar GPS PTTs to help understand their annual movements within the Central Asian Flyway. A majority of these transmitters lasted well over a year, yielding complete migration paths between breeding and wintering areas. During their fall migrations, most marked shelducks followed a similar route south to known wintering regions in India, Bangladesh, Myanmar, and the Tibetan plateau. However, two shelducks (74810 and 82117) stopped approximately 500 kilometers northeast of Qinghai Lake in a desert known for having the tallest sand dunes on Earth! After assuming the worst, we learned that the shelducks were alive, and had stopped at an extremely isolated yet reliable water source.

Located in the Inner Mongolia Province of northern China, the Badain Jaran Desert covers approximately 50,000 km². The desert is home to the largest stationary sand dunes in the world, reaching nearly 500 meters in height, and is almost completely devoid

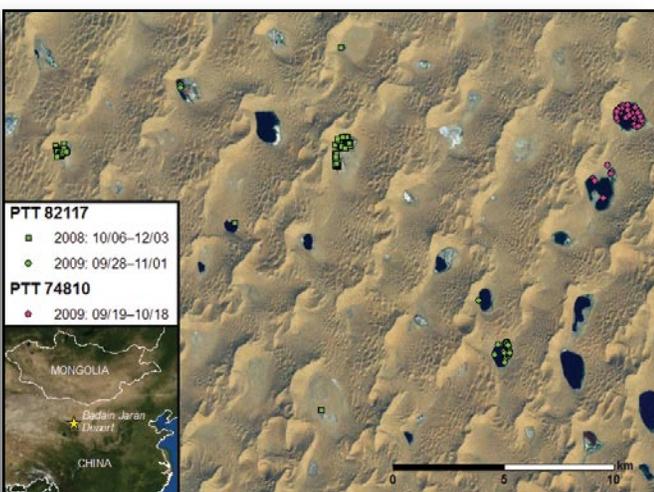
All told, the two birds have used ten different lakes in the southeast portion of this fascinating desert. Because the lakes represent a reliable water source in the extremely arid region between Central Mongolia and Qinghai Lake, they may be a stopover site not only for shelduck, but many other waterbird species during fall migration. These findings are another example of how satellite telemetry often reveals fascinating information about habitat use during migration that would otherwise be overlooked.

For more information about this collaborative project between the U.S. Geological Survey (Western Ecological Research Center, Patuxent Wildlife Research Center, and Alaska Science Center), United Nations-FAO, the Chinese Academy of Sciences, and Qinghai Lakes National Nature Reserve, please visit: <http://www.werc.usgs.gov/sattrack/index.html>



Photo by Kyle Spragens

Female Ruddy Shelduck (82117) marked at Qinghai Lake, China in 2008.



Badain Jaran Desert lakes used by two Ruddy Shelduck marked at Qinghai Lake, China. Dates of stopover for each bird are denoted in legend.