

# One Tough Eagle

Dale Stahlecker, founder of Eagle Environmental, Inc. in Santa Fe, New Mexico, has conducted field surveys and research on raptors in the southwestern United States for three decades. Most of his work during the last 15 years has focused on golden eagles, involving work with tribes, as well as state and federal agencies. Since 2010, Dale has worked on satellite telemetry studies of golden eagles for the U.S. Fish and Wildlife Service.

Robert Murphy is a migratory bird biologist for the U.S. Fish and Wildlife Service's Southwest Region, where his focus is raptor conservation and research initiatives, especially for golden eagles. He currently leads a long-term, collaborative investigation of ranging behavior, survival, mortality factors, and resource selection by golden eagles in the Colorado Plateau and Southern Rocky Mountain regions.

Accelerating energy development in the far southwestern U.S. poses challenges for conserving golden eagles, largely because the species' ranging behavior in the region is virtually unknown. During the late winters of 2012 and 2013, we worked with Dr. Gary Roemer of New Mexico State University and Dr. Jimmy Cain of the USGS Fish and Wildlife Cooperative Research Unit at NMSU in launching a study of the use of southern New Mexico landscapes by golden eagles, funded by the U.S. Bureau of Land Management. Our key tool was satellite telemetry. We met our target of capturing and tagging six 'goldens' with transmitters in 2012. As winter waned in 2013, however, the eagles "weren't buyin' what we were showing," and we had not yet deployed a transmitter. Meanwhile, on a windy early March



Windshield of car after striking adult male golden eagle "Thor" on a rural highway in southwestern New Mexico, 2 March 2013.

Photo by Denise Miller

day, an adult male golden eagle made what should have been a fatal mistake. Feeding on carrion beside a rural New Mexico highway, he was flushed into the windshield of a car traveling at 100 km/hour, smashing the glass and denting the car's roof at the upper edge of the windshield. He was scooped up from the road by the following driver and taken to Gila Wildlife Rescue in nearby Silver City. Amazingly, a physical exam there revealed NO bone fractures, no nerve dysfunction...no permanent damage! "He did move a bit slowly for a couple weeks," said Dennis Miller,



Photo by Denise Miller

Adult male golden eagle "Thor" being received at wildlife rehabilitation center after being struck by a car traveling at 100 km per hour.

a retired fisheries professor who, with his wife Denise, has rehabilitated injured raptors for two decades. Dennis reported in late March that the eagle was "pounding his perch landings" in their large flight pen, a sure sign that he was ready for release.

A plumber told Dale of a TV news story about the "miracle eagle." We had previously decided to exclude rehabilitated birds from our study but considered this eagle a possible exception as he had merely been held in captivity for a few weeks and appeared healthy. Dennis supported the proposal. We fitted the eagle with a 45g Solar GPS unit from MTI on 29 March, and he was released the next day by the 80-year-old patriarch of a Silver City family, descendants of Geronimo, in memory of the elder's great-grandson who had recently died, merely a teenager. Unabashedly anthropomorphic, we give names to eagles we track, often based on something that happened during



Photo by Denise Miller

Dale Stahlecker and Dennis Miller attach a 45g PTT to an adult male golden eagle that had been struck by a speeding car less than 1 month earlier. The eagle flew 120 km the afternoon it was released with the PTT attached.

capture or tagging. Thinking of the giant "spiderweb" he left in that car windshield, we agreed to name him Thor... he smashes things, doesn't he?

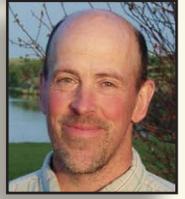
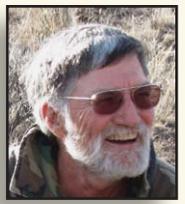
We thought Thor might be a local resident, but on the first download of his movement data, two days after his release, we realized that he clearly was not. He had moved 120 km north that first afternoon, another 330 km north on Day 2, and crossed into Colorado early on Day 3. He slowed his

pace, but through early May he followed the Continental Divide northward, arriving in the Cassiar Mountains near Haines Junction, Yukon, about 170 km from the Gulf of Alaska, on 19 May. He remained there for about 1 month, then in late June, moved another 1000 km northward until reaching the Beaufort Sea near the Alaska-Yukon border. There, on the "North Slope" of the Brooks Range, he spent the rest of the summer, 4500 km north of where he had struck the windshield of a car a few months earlier near the U.S.-Mexico border. He just sort of ran out of continent!

Thor returned south during fall 2013, mirroring his previous northward migration, including a month-long stopover near Haines Junction (see map). On 23 November, he arrived at the same area in far south New Mexico where he had cheated death along a rural highway 9 months earlier. During the winter of 2013-14, he used a relatively small area (16 km<sup>2</sup>, 95% kernel density estimate), mostly perched on transmission line poles along the highway or on an old windmill tower. He left his winter range 23 March 2014 and arrived at Haines Junction 1 month earlier than in 2013. He moved on to the North Slope for July and August, then returned to the same stopover site, and finally reached his same small

winter core area in New Mexico in early November. As of this writing on 7 October 2015, Thor is making his third southbound journey carrying a MTI PTT; he left his stopover site two days ago. When he reaches his winter range, we will have witnessed three migration cycles, totaling roughly 35,000 km of flight. Data from his overwinterings in southern New Mexico add to our knowledge of origins and migration patterns of goldens wintering in the far southwest. His limited winter movement contrasts the wider-ranging behavior of other migrant goldens overwintering in southern New Mexico.

Meanwhile, he has developed a following of internet fans, inspired by his story and anxious to see his next movements. We thank Dennis and Denise Miller for their help in making all this happen. To follow Thor's complete story, visit the Gila Wildlife Rescue page on Facebook, and look under "Albums."



Migration tracks of adult male golden eagle between wintering range in southern New Mexico (black dot) to summer range on the northern Alaska-Yukon border (white dot): white track - 2013; blue track - 2014; yellow track - 2015 through early October. Migration stopover site is red square. Tracks are based on hourly (0700-1900 hrs) GPS locations.