



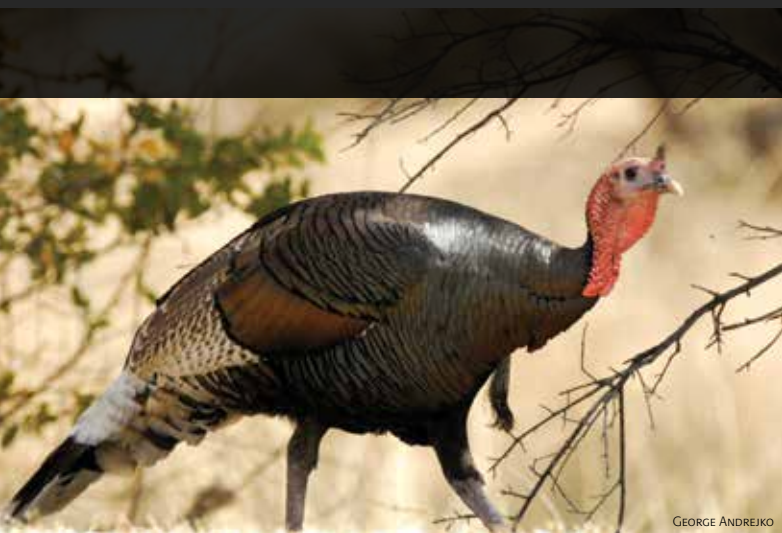
# WHAT'S SO SPECIAL ABOUT GOULD'S TURKEYS ANYWAY?

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During the first translocations of Gould's turkeys from Mexico, Arizona Game and Fish Department placed leg bands on all Gould's coming into the United States. These leg bands served for identification and tracking purposes for biologists. To this day, a few of these leg bands still exist!



The first time I ever laid eyes on a Gould's turkey was when I was 11 years old. It was a memory I will never forget. A casual squirrel hunting expedition turned into a first-time encounter. The leaves had just begun to change color and the cool air on Mount Graham was a great escape from the everlasting heat in Safford, Ariz. A quick drive up the mountain lead to my favorite hunting spot: Turkey Flat. Being 11 years old, I had yet to make connection between the name of Turkey Flat and how it got its name.

We had just arrived and with the excitement rushing through my veins, I jumped out of the truck and slammed the door behind

me. The door echoed off the canyon walls for what seemed like many minutes. At the end of that echo, I heard a new sound that was unique and unfamiliar to me. The only words to describe such a sound would be a sheer gobble. I immediately turned and looked back at my father with shock in my eyes and my jaw hanging at my feet. "Is that a turkey," I asked once I was finally able to gather my words. The minute my father said yes, I knew this squirrel hunting trip was over and all I wanted to do was find the turkey. So off we set in the direction of the gobble on our new adventure. After what my dad would call miles and I would call seconds, I knew we were close. Turkey sign was prevalent throughout the area: feathers on the ground, tracks and droppings. But one thing was missing: a turkey! I wasn't ready to give up. I let out the best gobble impression that I could. My call was answered immediately from behind. I slowly turned my head to look over my shoulder. My eyes landed on the most magnificent bird I had ever seen. For the first time in my life, I saw a Gould's turkey.

During my first encounter, I was fortunate enough to see an adult male Gould's turkey during the breeding season. In the breeding season, males can be found fanning their tail feathers and puffing out in hopes of attracting a mate. Males can be up to 49 inches tall and weigh close

to 20 pounds. With numbers like those, their sheer size is breathtaking. The Gould's iridescent feathers and red and blue coloration on their heads is unique, not something you would see in other species of turkeys. In fact, Benjamin Franklin suggested that the wild turkey would be a better choice for the national bird than the bald eagle. But despite this, little research has been conducted on the Gould's turkey even to this day. Arizona Game and Fish, Louisiana State University and the National Wild Turkey Federation are determined to change this. During 2017, all three departments gathered together in support of collecting vital data surrounding Gould's turkeys.

### Collaboration

Arizona has three subspecies of turkeys, Merriam's, Rio Grande's and Gould's. While Merriam's turkeys have been studied extensively in North America, there has been little research conducted on Gould's turkeys. This is partially due to Gould's only being found in Arizona, New Mexico and Mexico.

Information such as what type of habitat Gould's use for roosting, nesting and traveling as well as nesting behavior was previously a mystery. To answer these questions, LSU, NWTF and Game and Fish teamed together to gather substantial data on these turkeys. In 2017, LSU donated \$80,000 to cover equipment, a summer



technician position and data analysis. NWTF funded my intern position and telemetry flights. The department provided vehicles, equipment and additional staff time to complete this research.

### What is Known About Gould's

Gould's turkeys occupy a unique ecological niche in the environment since they are both a predator and prey source for other species. Gould's diet consists of insects, lizards, snakes, fruits, seeds, grasses and forbs. Both adult and juvenile turkeys (poults) are preyed upon by owls, hawks, falcons, eagles as well as carnivores such as foxes, mountain

lions, bobcats and coyotes. Snakes, skunks and raccoons also will steal eggs from the nest of turkeys. Having these resources available to predators provides a much-needed source of nutritional value.

### History in Arizona

During the early 20th century, populations of wildlife suffered great peril. Anthropogenic effects put a heavy toll on wildlife resulting in the extinction of species such as the passenger pigeon (*Ectopistes migratorius*) and the California grizzly bear (*Ursus arctos californicus*). Gould's turkeys were no exception to this risk. In Arizona, Gould's turkeys were extirpated in the 1920s

due to overhunting. However, populations of wild Gould's turkeys still existed in Mexico. Because little research was conducted before Gould's turkeys were extirpated, there were many questions left unanswered. Questions such as: what habitat dynamics do Gould's prefer, which mountain ranges are they native

to in Arizona, how much cover do they need to avoid predation, how long is the incubation period and what are the dietary requirements. Without the answers to these questions, biologists had a long journey ahead before stable populations of Gould's turkeys could be found again in Arizona.



There are six hunting slams (hunting achievements) in Northern and Central America recognized by the National Wild Turkey Federation. Gould's turkeys are a critical component in completing four of the slams. Below are the harvest requirements for completing each slam that can be found at [www.nwtf.org](http://www.nwtf.org).

**GRAND:** All four U.S. subspecies (Eastern, Osceola or Florida, Rio Grande and Merriam's)

**ROYAL:** The Grand Slam plus the Gould's (found in Mexico and limited areas of the Southwest)

**WORLD:** Royal Slam plus the ocellated wild turkey (found in Mexico and Central America)

**CANADIAN:** Harvesting the Eastern and Merriam's in any Canadian province (Ontario, Quebec, Manitoba, Alberta or British Colombia)

**MEXICAN:** Rio Grande, Gould's and ocellated wild turkey harvested in Mexico only

**U.S. SUPER:** Harvest one wild turkey subspecies in every state except Alaska



To counter the loss of Gould's turkeys, Game and Fish introduced 46 Merriam's turkeys from northern Arizona into the Huachuca Mountains in southeastern Arizona in 1950. Because of differences in habitat and environmental conditions, the translocations were unsuccessful. In 1983, nine Gould's turkey hens were reintroduced from Mexico to the Huachuca Mountains. Further monitoring revealed that the translocations were successful. Following the success of these translocations, 12 additional Gould's (seven adult females, five adult males) were brought from Mexico to the Huachuca Mountains in 1987. To date, 876 Gould's turkeys have been captured and translocated in Arizona. These translocations have led to the rebound of Gould's in Arizona. Currently, the Pinaleno, Chiricahua, Patagonia and Huachuca mountains all have Gould's turkeys with radio transmitters and are being monitored.

### What Data is Collected?

Since 1994, radio transmitters have been used to track and monitor movement and location of Gould's turkeys

in southern Arizona. Currently, AZGFD has roughly 30 Gould's turkeys fitted with radio transmitters. The transmitters are spread out among turkey populations in the Pinaleno, Chiricahua, Patagonia and Huachuca mountains. These radio transmitters are equipped with VHF (very high frequency) and GPS (global positioning system) components. The VHF component allows the use of telemetry receivers to locate or triangulate the transmitter. The GPS component records location coordinates every hour between 6 a.m. and 2 p.m. and then once at midnight. Coordinates are then downloaded using a handheld command unit from the ground or by fixed-wing aircraft. The radio transmitters are a major component of research being conducted on Gould's turkeys today. Without transmitters, roost data, nesting data, brood surveys and monitoring of movement patterns would not be possible.

Roosting locations are identified from the GPS point taken at midnight. Roost trees are vital to the survival of Gould's turkeys because a quality roost tree provides escape habitat and

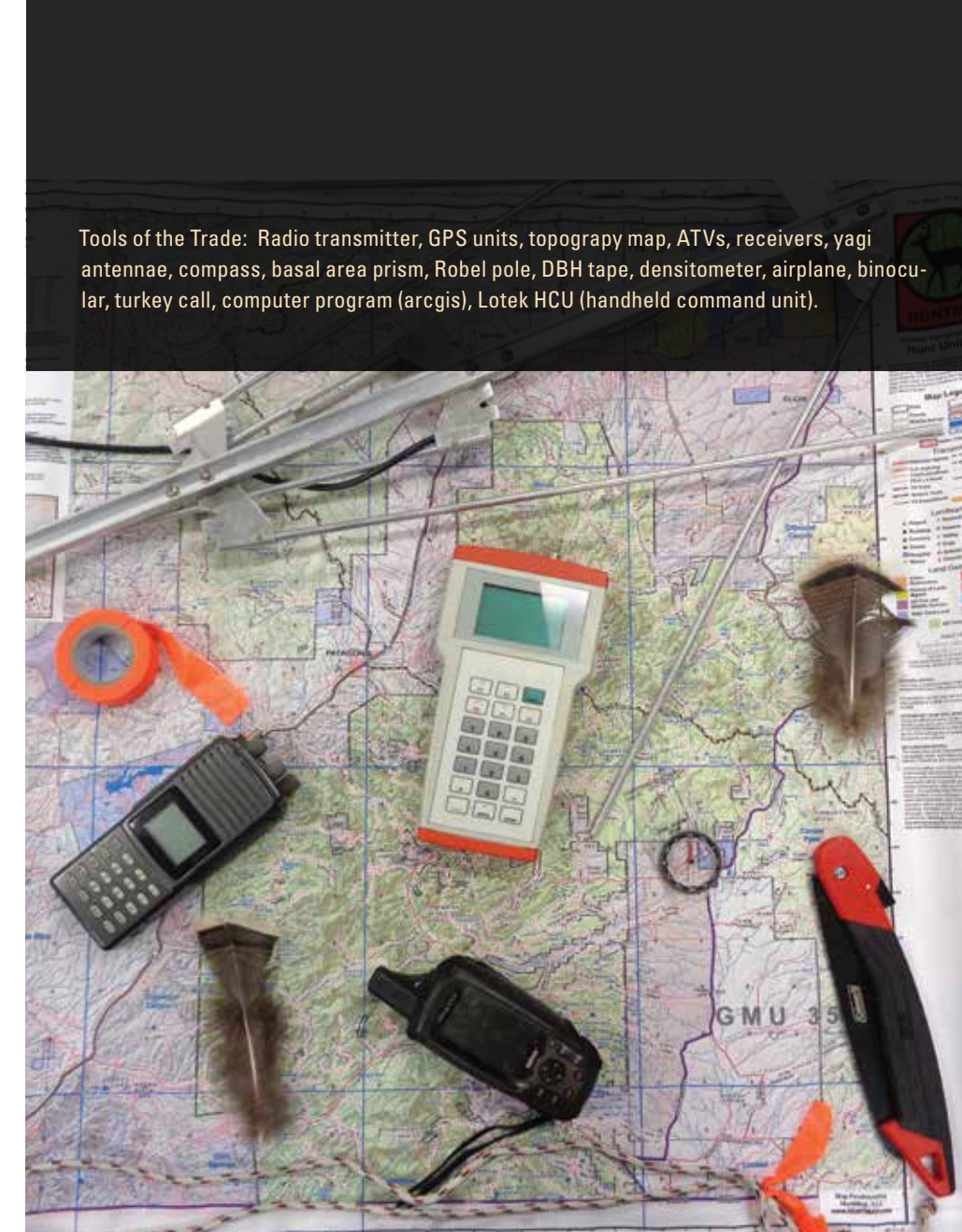


shelter at night. Preliminary data indicates Gould's turkeys prefer to roost in oak trees.

During the 2017 nesting season, the 30 Gould's turkeys fitted with radio transmitters and GPS were monitored for nesting attempts. Nest attempts initially were identified from GPS data. Once the GPS points clustered in a specific location, a ground survey was performed to inspect the area. When a nest was confirmed, monitoring during the 28-day incubation period began. To ensure a non-invasive approach, great precaution was taken not to bump the hen from her nest. Biologists stayed out of sight of the nesting hen, minimized all possible noises around the nest and downloaded the hen's GPS data every few days instead of consecutively visiting the area. After the eggs hatched, the fun work began.

Total egg count and egg success were recorded. To determine the success of an egg, the presence or absence of an egg cap was used. When a turkey hatches from an egg, it pecks around the top of the egg to remove the "cap" and then emerges by using its beak. At the end of the 2017 nesting season, 61 eggs were successfully hatched from the 30 Gould's turkeys fitted with radio transmitters.

Visual surveys of poults and hens were conducted every third or fourth day if a nest was successful. These surveys involved honing in on the transmitter loca-



tion and then counting the number of poults seen with a hen. These observations were taken up to 15 days after hatching. This data was then used to determine the survivorship of individuals within the brood.

### Data Implementation

The research collected this past summer will give Game and Fish a better understanding of Gould's natural history. In turn, this will help with future transloca-

tion management strategies. There are many potential management implementations for this data. Once habitat data is quantified, the department has the potential to conserve areas that contain critical components for Gould's survival such as roost trees. Other projects could include amplifying the number of available high quality roosting trees or water sources. Further management applications may include altering hunting dates, available hunting

units and the amount of tags given each year to hunters. The raw data is currently being analyzed by LSU and should be available to Game and Fish biologists in 2018.

■ Alex Smallwood is currently studying Wildlife Management at the University of Arizona. He recently completed an internship with the Department dedicated to Gould's turkey research.