

Impacts of Wild Pigs on Acorns as a Food Resource for Native Wildlife

Arielle Fay, Steve Zenas, Mark Smith, and Stephen Ditchkoff

Wild pigs (*Sus scrofa*) are a non-native invasive species that cause \$1.5 billion/year in damage to agriculture in the United States, destroy native plant communities, and compete with native wildlife for seasonally available resources (e.g., acorns), especially economically important game species such as white-tailed deer (*Odocoileus virginianus*) and wild turkey (*Meleagris gallopavo*). Our objective was to estimate the consumption of acorns by wild pigs relative to that of other native wildlife species.

For this study, we established 40 monitoring stations beneath acorn producing trees at a 3,406 ha study site of privately owned land in eastern Alabama. At each monitoring station, we placed 5 acorns on a 1m x 1m sand pad and positioned a game camera to record acorn fate (species-specific consumption) during 2-week intervals once a month from November to February, 2018-19. Additionally, we constructed acorn traps from 18.9 L plastic buckets to estimate the total number of acorns that were potentially available for consumption at each monitoring station.

From approximately 3.5 million camera images taken during 55,619 total camera hours, we determined the number of acorns consumed by each species over the 5 months of sampling. From the 1,200 acorns under surveillance, we found that 367 were consumed by 13 species while 183 were lost due to flooding, 322 left on the sand pad at the time of camera failure, and 328 were not consumed. Wild pigs (23.2%) consumed the most acorns followed by white-tailed deer (21.5%) and squirrels (18.8%). Wild turkeys consumed <1% of acorns, which may have been a function of a very low population of turkeys on the study area.

Our observations suggest that wild pigs likely consume a significant amount of acorns and may possibly reduce availability of this pulse resource for other native wildlife species. Additionally, wild pigs may potentially influence oak regeneration as they consume oak seeds (e.g., acorns) before they have a chance to develop. With further research on this project, we will

determine if wild pig consumption of acorns depletes this food resource to such an extent that native wildlife are impacted. As part of a larger study, wild pigs will be removed from our study site during the summer and fall of 2019, and we will repeat this study again to estimate changes in acorn consumption by native wildlife after wild pig removal.

Statement of Research Advisor

Arielle's research is the first step in plugging some big holes in our understanding of how invasive wild pigs impact native wildlife species. Her research has been exceptionally well-received by the professional community and is a true, unique contribution to science.

– Mark Smith, School of Forestry and Wildlife Sciences