

THE DRIVERS OF WILD PIG RANGE EXPANSION AND GOVERNMENTAL RESPONSES



In today's society, biological invasions are becoming increasingly commonplace with more than 50,000 species here in the U.S. alone. Among academics and natural resource professionals, invasive species are considered one of—if not the—greatest conservation and management challenges of the 21st century. With the ecological consequences being equivalent to the impacts of earlier conservation issues such as unsustainable harvest, habitat destruction, or pollution, invasive species disrupt a variety of critical services and functions, in both our natural and human-made environments.

MOST WILD PIG ISSUES ARE TYPICALLY ASSOCIATED WITH ECOLOGICAL AND ECONOMIC IMPACTS, BUT THERE ARE ALSO A VARIETY OF SOCIAL, CULTURAL, AND LEGAL IMPLICATIONS. IN FACT, THE VERY FABRIC OF THE WILD PIG DILEMMA IS A SOCIAL PROBLEM FOR WHICH WE HAVE BEEN SEEKING BIOLOGICAL SOLUTIONS.



While invasions can sometimes be a natural process of dispersal and range expansion, there is one particularly destructive invader that has arrived and expanded its range by other means. Ranking among the top 100 of the world's worst invaders, wild pigs are a species that have become increasingly familiar with many of us over the past decade or so as they have continued to expand their range across most areas of the U.S. However, many of the impacts resulting from their invasion are largely the byproduct of human activity.

Wild pigs are recognized as the second most harvested "big game" species in North America behind whitetail deer. This national popularity, coupled with their high reproductive rates and plastic (adaptable) behavior, has secured wild pigs a continental distribution. This is largely the result from thousands of years of co-evolution between humans and pigs, as we have transplanted them nearly everywhere we have moved and colonized. That simple fact clearly demonstrates humans have a deep, underlying predisposition to transport

pigs to new areas for various purposes, whether for sustenance, sport or profit. However, when that same process becomes incentivized, it significantly expedites their spread, and consequently, their impacts.

This is precisely what we have seen occur during the previous 10-15 years, as wild pigs have shifted from mostly a means of sustenance in the public eye, to a highly popular (and therefore valuable) big game commodity. Along with rapidly growing populations of both people and wild pigs, this shift in demand to a recreational species has generated various industries and services, commercializing this detrimental invader. Products of that event have been an increase in wild pig sport hunting, a competitive commercial environment, and an unparalleled threat to our nation's wildlife and other natural resources. While our research was not the first to conclude this vast range expansion was anthropogenic (human-influenced) in origin, it provided support by considering and examining the non-ecological reasons wild pig populations

have become so well-established in some areas of the country, and if specific regulatory policies were influencing those trends.

Most wild pig issues are typically associated with ecological and economic impacts, but there are also a variety of social, cultural, and legal implications. In fact, the very fabric of the wild pig dilemma is a social problem for which we have been seeking biological solutions. For instance, it is scientifically accepted that wild pigs: 1) are the most widely distributed mammal species in the world, 2) their proliferation throughout the U.S. is the result of humans continuously transporting them to augment hunting opportunity, and 3) they pose a significant threat to our native species and ecosystems, many of which may be endangered or in some state of concern. However, there are still states that permit the live transport, import, and/or release of wild pigs in the U.S. Such legislative action (or inaction) has proven to be completely incompatible with the objective of reducing range expansion and thus, their economic and ecological impacts.

Our analysis of state legislative efforts rationalizes many of these wild pig issues and decisions, and helps states consider, develop, and

model legislation that is better aligned with their overall objectives on wild pig population management. Moreover, we wanted to guide states into a more uniform system of policy decision making regarding the transportation and release of the species, among other factors that greatly contribute to their spread. However, not all states share the same objectives. Despite their negative impacts, some states have embraced the ecological footprint of wild pigs for the various economic benefits they generate, such as the revenues from license and tag sales. However, it is also in these areas where high population densities are common and where eradication may no longer be a feasible or realistic goal, leaving their agencies to look for alternative means to compensate for damages. Even so, some state-level decision making remains remiss in passing meaningful legislation to preclude the intra- and interstate movement of wild pigs. This makes it difficult for neighboring states that may be attempting to manage the species and are continuously fighting clandestine, illegal transportation along their borders. For instance, in California and Tennessee, wild pig populations exploded when they were designated as a state-listed

game species. Subsequently, Oregon and Kentucky continue to have reintroductions in some of these focal areas and are forced to continue allocating resources to manage the spillover and mitigate emerging impacts.

Where the results of some research have likened the population growth and range expansion of wild pigs to various ecological or landscape factors such as climate, habitat, and agriculture, our results showed that spread may be more tied to the social and cultural drivers of a region (e.g., wild pig hunting culture, management approaches). Although it is likely that a combination of these factors contribute to their spread, the

underlying processes driving this accelerated expansion are social, cultural and sometimes political in origin. This confirmation allows key policymakers to position themselves to limit the spread of wild pigs by addressing controversial topics such as the continuous permitting of live transportation and release, or provisions that encourage commerce of this degenerative species. Finally, and most fundamentally, we hope to prompt state governments to abandon the primitive philosophy of reactive policy regarding wild pig management in the U.S., and adopt a more proactive and comprehensive stance at the municipal, state, and federal levels. ■



BOONE AND CROCKETT FELLOW PROFILE

Andrew Smith of Greenville, Mississippi, a small town in the Mississippi River Delta, is a passionate conservationist who enjoys writing, history, traditional archery, and fly-fishing. He received his B.S. in Wildlife and Fisheries Science from Mississippi State University in 2014 where he worked as an ecological technician on a variety of projects with the U.S. Fish and Wildlife Service, U.S. Geological Survey, and others. After graduation, Mr. Smith began to seek out his interests in biological invasions and natural resources/conservation policy, where he was then recruited by Dr. Bruce D. Leopold and the Boone and Crockett Club to investigate the effectiveness of policy and legislation to control wild pig populations in the United States. Mr. Smith is a full-time Extension Associate for Mississippi State's Center for Resolving Human-Wildlife Conflicts, where he provides programmatic support to the director, writing and publishing on key invasive species of Mississippi, the southeast, and the U.S. During this time he has worked closely with species such as Asian carp and wild pigs on a variety of projects with the U.S. Army Corp of Engineers, the Mississippi Department of Wildlife, Fisheries, & Parks, and the U.S. Geological Survey.