

PIGS IN A PEN: THE MULTI-FACETED IMPACT OF FERAL SWINE ON MICHIGAN’S AGRICULTURAL AND ENVIRONMENTAL COMMUNITIES

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ABSTRACT

Feral swine have created significant problems for numerous agricultural and environmental communities across the United States. Attempts by states to regulate them under agricultural and environmental law have yielded commentary from diverse members of agricultural, environmental, business, and general community members. Michigan is one state that is currently dealing with questions and opposition regarding how to regulate feral swine. This paper examines arguments for and against feral swine regulation from the stakeholders of the agricultural community, and also examines the critical role of the government in executing the political, executive, and legal policy framework of Michigan's agriculture. Further, it examines the role of the courts in weighing the concerns and legal arguments of these diverse members of the community. The takeaway is that this is a topic that exhibits multiple and often-conflicting concerns from the diverse members that comprise Michigan's agricultural community. This is also a topic that exhibits that, even when members of the community share a goal, there may be obstacles in the process that impede that goal. Further, this topic has a far-reaching impact and deserves discussion. Because feral swine have the potential for immense impact on agriculture, the environment, and the economy, the steps and missteps of Michigan's successes and failures can serve as an example for other states who face similar regulatory challenges.

I. INTRODUCTION

This paper focuses on the impact of feral swine on Michigan agricultural and environmental communities. This is a topic that exhibits the multiple, often-conflicting concerns from the diverse members that comprise Michigan's agricultural community. Furthermore, this topic shows how even when members of the community share a goal, there can be obstacles in the process that impede that goal.

To clarify what is meant in this Article by "feral swine," the definition that will be used throughout this paper is the one provided by the Michigan Department of Natural Resources (MDNR), which defines feral swine as "a combination of Russian boars and escaped or neglected domestic pigs."¹ They are referred to by the MDNR by their classification as "*Sus scrofa* Linneaus" and are differentiated from "*sus domestica*" which are involved in domestic hog production.²

1. MICH. DEP'T NATURAL RES., FERAL SWINE IN MICHIGAN - A GROWING PROBLEM, http://www.michigan.gov/dnr/0,4570,7-153-10370_12145_55230-230062--,00.html [hereinafter A GROWING PROBLEM].

2. MICH. DEP'T NATURAL RES., INVASIVE SPECIES ORDER 40.4(1)(b) (2011), https://www.michigan.gov/documents/dnr/InvSpcOrders_480277_7.pdf; see MICH. COMP.

Feral swine have significantly impacted Michigan's diverse agricultural community, on both ends of the farming spectrum. On the one end of the spectrum are those who wholly rely (or relied) on feral swine to make a living, either raising the pigs for consumption or recreational hunting. On the other end of the spectrum are those whose crops or livestock were decimated by feral swine. This paper examines arguments for and against feral swine regulation from the interested members of the agricultural community, and also critically examines Michigan's role in executing the political, executive, and legal aspects of its agriculture.

This paper begins with a discussion of the natural characteristics of feral swine that make them a risk to Michigan's agriculture and the environment. Then, it examines the rationale and decision of Michigan's agencies to regulate feral swine, focusing on the factors that informed their ultimate choice for regulation. Because of the multitude of interests implicated by feral swine's presence in Michigan, this process required inter-governmental and governmental-agricultural cooperation. After the DNR passed an Invasive Species Order, it also became an issue that involved the legislature and the courts.

Several issues involving feral swine have been debated in Michigan, including both sides of the argument of whether this area should even be regulated and if so, how? This is a topic that is currently moving through the legal and political realm, so the analysis and conclusions of this paper could change depending on future events. There are those who argue that Feral Swine should be regulated on a national level;³ however, this paper does not make any such argument – it simply seeks to assess the strengths and weaknesses of Michigan's state-wide efforts. Therefore, this paper is an attempt to trace the ways in which feral swine have impacted Michigan's agricultural community and an attempt to identify solutions and to predict what challenges are yet to come.

II. FERAL SWINE: CHARACTERISTICS AND BEHAVIORS

A. Background and Arguments For Regulation

1. History of Feral Swine

Feral swine, as encompassed by the definition of MDNR, were introduced into the United States as early as 1539 by a Spanish explorer, who brought wild hogs to Southwest Florida.⁴ “Aside from these early releases, however, the vast

LAWS § 324.41301 (2015).

3. See Dian Lefkowitz, *The Three [Million] Little Pigs: Why the United States Must Do More Than Huff and Puff*, 37 SUFFOLK TRANSNAT'L L. REV. 437, 437 (2014).

4. A GROWING PROBLEM, *supra* note 1.

majority of wild pig entrances is due to open range practices of farmers and settlers, continuing into the mid-1900's. The establishment of Eurasian wild boar populations likely resulted from importation into North Carolina from Germany in the early 20th century."⁵ The current national population of feral swine are likely the result of breeding between domestic hogs and these wild boar.⁶

As of 2012, Michigan's feral hog population was estimated to be up to 3,000.⁷ However feral swine are not just a statewide problem and, in fact, "feral hogs are candidates for the World's 100 Worst Invasive Alien Species."⁸ Nationally, in 2010, there was estimated to be "an approximate hog population of 4 million."⁹ Feral swine populations have caused significant damage – in Australia, feral swine caused an estimated \$100 million per year in agricultural damage, whereas, in the United States, that figure is estimated at \$800 million.¹⁰

Michigan's feral swine population is believed to be the result of escapes from game farms and hunting preserves.¹¹ Feral pigs have historically been a lure for sports hunters, as "they're very crafty, hard to find" and because of their size and intelligence, hunting them comes with an "element of danger."¹² Feral swine can be very dangerous when cornered or threatened, and may become aggressive and attack humans.¹³ Because they move with great speed and have large tusks, they can cause serious physical injuries.¹⁴ This aggressive behavior has already exhibited itself in Southern Michigan, when a state trooper had to shoot a feral hog that was chasing a young girl.¹⁵

5. Lefkowitz, *supra* note 3, at 438-39.

6. *See id.* at 439.

7. Ron Dzwonkowski, *Ron Dzwonkowski: Wild Hogs Multiplying Quickly—and So are Dangers*. DETROIT FREE PRESS, Aug. 23, 2012, <http://www.archivefreep.com/article/20120823/NEWS06/308230192/Ron-Dzwonkowski-Wild-hogs-multiplying-quickly-and-so-are-dangers>.

8. WILDLIFE SERVS. N.M., APHIS, USDA, FERAL HOG BIOLOGY, IMPACTS AND ERADICATION TECHNIQUES 3 (2010), [http://www.aphis.usda.gov/wildlife_damage/state_office/state_web/new_mexico/Feral%20Hog%20Biology%20Behavior%20and%20Management%20\(3\).pdf](http://www.aphis.usda.gov/wildlife_damage/state_office/state_web/new_mexico/Feral%20Hog%20Biology%20Behavior%20and%20Management%20(3).pdf) [hereinafter WILDLIFE SERVS. N.M.].

9. *Id.*

10. *Id.*

11. Dzwonkowski, *supra* note 7.

12. *Ban on Exotic Swine Causes Backlash in Michigan*, FOX NEWS (Apr. 26, 2012), <http://www.foxnews.com/us/2012/04/26/ban-on-exotic-swine-causes-backlash-in-michigan/#ixzz2Om6UW68S> [hereinafter *Ban on Exotic Swine*]; see *Mich. Animal Farmers Ass'n v. Dep't of Natural Res. & Env't*, No. 305302, 2012 WL 676386, at *1 (Mich. Ct. App. Mar. 1, 2012).

13. A GROWING PROBLEM, *supra* note 1.

14. *Id.*

15. *Ban on Exotic Swine*, *supra* note 12.

In Michigan, the most common feral swine are a combination of Eurasian “boars and escaped or neglected domestic pigs.”¹⁶ “Depending on ancestral lineage and cross-breeding,” their appearance may vary.¹⁷ This has been flagged by opponents of regulation, essentially arguing that misidentification can lead to overregulation because it is impossible to accurately differentiate feral swine from domestic pigs in an Invasive Species Order.¹⁸ In terms of identification, the

[t]ypical fur coloration for true Russian boar can be grey to dark brown to black, while domestic breeds can display a wider variety of colors with many defining patterns of striping or spots. Several generations of cross-breeding between domestic and Eurasian lineages can make the physical appearance of these animals drastically different within the same family unit.¹⁹

However, as argued by those who oppose MDNR’s attempt to ban feral swine, identifying them is difficult, and an overbroad description may unintentionally include domestic pigs, which would negatively impact a very large (and lucrative) portion of Michigan’s agricultural community.²⁰ “The state has 2,100 pork producers and markets more than 2 million hogs per year. Agricultural associations like the Michigan Pork Producers Association said [accurate management] of feral swine is critical to all Michigan residents.”²¹

2. *Destructive Characteristics of Feral Swine*

a. Natural Behaviors: Habitat, Diet, Rooting and Wallowing

Adult feral swine range in size from 100 to 200 pounds, but larger specimens can occur; male adults can grow to more than 400 pounds.²² They have “a remarkable reproductive capacity and within the United States, are known to reproduce twice annually when environmental factors are suitable,” beginning from the sow age of as young as 6-9 months old.²³ On top of their prolific reproductive capacity, the natural behaviors of feral swine make them incredibly destructive. “Damage caused by invasive swine to important species and ecosystems

16. A GROWING PROBLEM, *supra* note 1.

17. *Id.*

18. Glenn Puit, *Wild Swine, the DNR and a Solution*, MICH. LAND USE INST. (May 16, 2012), <http://www.mlui.org/food-farming/news-views/news-views-articles/wild-swine.html#.UXbdY4LjdV4>.

19. A GROWING PROBLEM, *supra* note 1.

20. Puit, *supra* note 18.

21. *Id.*

22. A GROWING PROBLEM, *supra* note 1; Dzwonkowski, *supra* note 7.

23. WILDLIFE SERVS. N.M., *supra* note 8, at 3.

has been documented in virtually every segment of their range in the United States.²⁴ They disrupt natural wildlife including desirable game species such as white-tailed deer, pheasant, wild turkey, and ruffed grouse.²⁵ Feral Swine also compete with native wildlife for food, such as acorns and berries, which are a necessity for some native species during the winter months.²⁶

They primarily live in forest and agricultural areas, often near water, and because they are omnivores, “[t]hey will eat grubs, small game and crops, especially root crops such as sugar beets, carrots and potatoes.”²⁷ But, “[e]cologists classify wild pigs as a generalist species, meaning they readily adapt to a variety of habitat types and environmental conditions.”²⁸ Further, they are known as “opportunistic feeders” so they also target berries, corn, hay, small grains, soybeans, tree fruits, and vegetables.²⁹

Because they eat “anything and everything,” they may also eat endangered wild plants, the eggs of game birds, young deer or lambs, and reptiles.³⁰ According to the MDNR, “using their acute sense of smell, feral swine will find and eat young domestic livestock and poultry.”³¹ Their omnivorous diet also spreads invasive plants and weeds.³² For example, in Hawaii the Strawberry Guava (native to Brazil) “forms thickets and shades out native vegetation in tropical forests and woodlands . . . and is considered the worst plant pest in Hawa’i.”³³ This invasive species “benefits from feral pigs (*Sus scrofa*) which, by feeding on its fruit, serve as a dispersal agent for its seeds. In turn, the guava provides favourable conditions for feral pigs, facilitating further habitat degradation.”³⁴

Dispersal of these invasive species is exacerbated because of feral swine’s natural grouping and location shifting behaviors. A Number of authors have stated that feral hog’s behavior within their home range is focused primarily around the lead sow.³⁵ “It is widely accepted that sows and their offspring remain within

24. News Release, Mich. Dep’t Natural Res., DNRE Director Signs Order to Make Feral Swine Invasive Species (Dec. 10, 2010), <http://www.sootoday.com/content/green/details.asp?c=32999>.

25. *Id.*

26. *Id.*

27. Dzwonkowski, *supra* note 7.

28. Lefkowitz, *supra* note 3, at 443.

29. News Release, Mich. Dep’t Natural Res., *supra* note 24.

30. *See Ban on Exotic Swine*, *supra* note 12.

31. A GROWING PROBLEM, *supra* note 1.

32. Douglas Main, *Feral Pigs Going Hog-Wild in US*, LIVESCIENCE (Apr. 9, 2013, 10:21 AM ET), <http://www.livescience.com/28560-feral-pigs-running-wild.html>.

33. S. LOWE ET AL., 100 OF THE WORLD’S WORST INVASIVE ALIEN SPECIES 8 (rev. ed. 2004).

34. *Id.*

35. WILDLIFE SERVS. N.M., *supra* note 8, at 5.

a group known as a sounder; whereas boars are relatively nomadic, visiting various sows within their home range to investigate breeding opportunities.”³⁶ Feral swine “home ranges can shift seasonally, depending on resource availability and avoidance of hunting or predation pressures,” and often follow cow trails for foraging.³⁷ Only by taking these movement patterns into account can eradication efforts be properly implemented.

Beyond their diet, their rooting and wallowing behaviors are also responsible for destruction of crops and farmland, as well as harm to the ecosystem and environment.³⁸ When rooting, they dig for food below the soil surface.³⁹ The act of rooting destroys native plant communities and degrades water quality by contributing to soil erosion and introducing “bacteria, including coliform bacteria, into rivers and streams.”⁴⁰ In other states like New Mexico, feral swine have disrupted the habitats of certain vulnerable species, including species that are being petitioned for inclusion as threatened or endangered species under the federal Endangered Species Act.⁴¹ These include dune lizards, the Sacramento Mountain salamander, Lesser-Prairie-Chicken, and springsnails.⁴² In states like New Mexico and California, “feral hogs initiate soil erosion [while foraging] and promote the invasion of exotic weeds, further exacerbated by hogs passing weed seeds in their feces.”⁴³ “Other studies have suggested the mechanical vector of weeds via fur and hooves and in mud, from wallows to distant locations.”⁴⁴

Feral swine seek out areas of shallow water to roll in mud, which is referred to as wallowing.⁴⁵ Research has revealed several purposes behind wallowing, such as insect control, wound disinfection, thermoregulation, and even to communicate reproductive signals.⁴⁶ Wallowing impacts water quality by destroying small ponds and stream banks.⁴⁷ Wallowing may cause a threat to either native animal habitat or potentially, even nearby human communities through the water.⁴⁸ Because of the size of the swine, their rooting and wallowing is not insignificant. Some studies have shown that rooting and wallowing within agricul-

36. *Id.*

37. *Id.* at 7.

38. A GROWING PROBLEM, *supra* note 1.

39. *Id.*

40. News Release, Mich. Dep’t Natural Res., *supra* note 24.

41. WILDLIFE SERVS. N.M., *supra* note 8 at 13.

42. *Id.* at 13, 15.

43. *Id.* at 10.

44. *Id.* at 11.

45. A GROWING PROBLEM, *supra* note 1.

46. WILDLIFE SERVS. N.M., *supra* note 8, at 6.

47. A GROWING PROBLEM, *supra* note 1.

48. See News Release, Mich. Dep’t Natural Res., *supra* note 24.

tural fields creates holes in the farmland that can damage farm machinery and endanger operators.⁴⁹ Those who strongly support their regulation say that feral swine behavior can be so destructive that it would be near impossible to safely keep them confined.⁵⁰

3. Disease

a. Pseudorabies

As of 2012, “several captured hogs have tested positive for Pseudorabies.”⁵¹ “Pseudorabies . . . is a viral disease most prevalent in swine, often causing newborn piglets to die.”⁵² Older pigs can survive infection but once infected, they become “carriers of the pseudorabies virus for life.”⁵³ This disease can be a threat to other livestock.⁵⁴ “Other animals infected from swine die from pseudorabies,” which is also known as Aujeszky’s disease and mad itch, and “[i]nfected cattle and sheep can first show signs of pseudorabies by scratching and biting themselves. In dogs and cats, pseudorabies can cause sudden death.”⁵⁵

This disease could have a potentially crippling impact on Michigan’s pork industry beyond the obvious detriments to the piglets and other livestock. In 2000, Michigan achieved Stage Five Pseudorabies status, meaning the state is officially free of the disease, as are all other U.S. States.⁵⁶ Achieving this status allows for additional market opportunities for pork produced in Michigan.⁵⁷ The eradication of pseudorabies in Michigan took 10 years, and was necessary in or-

49. *Id.*

50. Morgan Sherburne, *Sporting Swine Banned: Boon for Farmers and Environmentalists, Bane for Game Ranchers*, PETOSKEY NEWS (Oct. 19, 2011), http://articles.petoskeynews.com/2011-10-19/wild-boars_30299791.

51. Dzwonkowski, *supra* note 7.

52. *Swine Disease Information*, APHIS, USDA, <https://www.aphis.usda.gov/wps/portal/aphis/ourfocus/> (Follow “Animal Disease Information” hyperlink; then “swine” hyperlink) (last modified Jul. 24, 2015).

53. *Id.*

54. *Id.*

55. *Id.*

56. JAMES AVERILL, ANIMAL INDUS. DIV., MICH. DEP’T AGRIC. & RURAL DEV., 2015 EXHIBITION REQUIREMENTS 13 (2015), https://www.michigan.gov/documents/mdard/2015_Fairs_and_Exhibitions_Requirements_478159_7.pdf.

57. APHIS, USDA, PSEUDORABIES ERADICATION STATE-FEDERAL-INDUSTRY PROGRAM STANDARDS 5 (2003), https://www.aphis.usda.gov/animal_health/animal_dis_spec/swine/downloads/prv_program_standards.pdf [hereinafter PSEUDORABIES ERADICATION STANDARDS].

der to protect “the reputation of the \$230 million industry.”⁵⁸ The hopeful notion that, as of 2000, the United States would be close to complete eradication of Pseudorabies from swine herds⁵⁹ may be thwarted by the unregulated feral pigs who have since tested positive for Pseudorabies and can spread the disease back to domestic swine herds.⁶⁰ “The transmission of disease from feral pigs to domesticated hogs is the chief worry for farmers and [sic]ag associations.”⁶¹ As mentioned above, in Michigan, domestic hog production is a very large and lucrative agri-business, and the spread of pseudorabies by feral swine could have a potentially crippling impact on Michigan’s pork industry beyond the obvious detriments of the disease to the piglets and other livestock.

Further, other diseases hosted by feral swine are ones “to which humans are susceptible including: brucellosis, leptospirosis, salmonellosis, toxoplasmosis, sarcoptic mange, E. coli and trichinosis.”⁶² They also carry “diseases that threaten livestock, including pseudorabies, swine brucellosis, tuberculosis, vesicular stomatitis and classic swine fever.”⁶³ In part, this means that hunting and eating wild boar may not be a safe alternative for eradicating their numbers, as they are unregulated and conduits for communicable disease to humans.

4. *Impact on Michigan*

Compounding the negative impact of feral swine is the fact that these pigs are highly mobile, adaptable, and prolific, meaning they can cover a lot of ground and their herd size can grow very rapidly.⁶⁴ According to the MDNR, “Feral swine have been sighted in nearly every county in Michigan.”⁶⁵ The estimated damage of feral swine on agriculture crops and to the environment totals around \$1.5 billion annually in the United States.⁶⁶

The numbers are both staggering and frightening when considering that two of Michigan’s most important industries, farming and tourism, are susceptible to the animal.⁶⁷ The fear of what the impact *could* become, as evidenced by

58. ANIMAL INDUS. DIV., MICH. DEP’T AGRIC., PSEUDORABIES (PRV) ERADICATION PLAN 2 (2008), http://www.mi.gov/documents/mda/PRV_Plan_08_240652_7.pdf.

59. See PSEUDORABIES ERADICATION STANDARDS, *supra* note 57.

60. FERAL/WILD PIGS: POTENTIAL PROBLEMS FOR FARMERS AND HUNTERS (2005), https://www.aphis.usda.gov/publications/wildlife_damage/content/printable_version/feral%20pigs.pdf.

61. Puit, *supra* note 18.

62. News Release, Mich. Dep’t Natural Res., *supra* note 24.

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.*

67. Puit, *supra* note 18.

watching other states where feral swine went unregulated, is part of what influenced MDNR to take regulatory action against this animal.⁶⁸ Part of the necessity in eradicating early is that as discussed above, they are prolific breeders, “[t]hey have no natural predators, and there are no legal poisons to use against them.”⁶⁹

This exhibits how essential agriculture is to the economy and culture of Michigan, as the resulting regulation was relatively strong. However, it did not come without opposition, and ultimately, despite good attempts, it didn’t come without some failures as well.

III. REGULATION: TRACING THE HISTORY OF THE INVASIVE SPECIES ORDER

A. Rationale and Factors Considered

Many, if not all, of the above-listed natural characteristics of feral swine pose cognizable threats to Michigan’s crops, wildlife, environment, and equipment, and human health of its agricultural community, and therefore, many of these factors were listed in MDNR’s discussion of whether (and how) to regulate feral swine.⁷⁰ Also discussed were the experiences of other states in attempts to deal with wild boar, including Texas, which is “considered the state with the largest feral swine population in the U.S.”⁷¹ The department also took into consideration input from a “feral swine work group” comprised of stakeholders “including pork producers and wildlife and conservation organizations, and hunting and breeding facility representatives.”⁷² MDNR sought input from this workgroup, which is an example of the agency considering the wide array of interests that would be impacted by feral swine regulation. Other states have formed comparable working groups; one example is the idea of a New Mexico Feral Hog Task Force, which “would identify resources needing protection, prioritize critical issues/areas needing control or eradication, identify funding requirements, and seek additional funds where possible.”⁷³ This was also an at-

68. See *Ban on Exotic Swine*, *supra* note 12 (“Southern states such as Texas have all but abandoned hope of eradicating the animals.”).

69. John Morthland, *A Plague of Pigs in Texas*, SMITHSONIAN MAG., Jan. 2011, <http://www.smithsonianmag.com/science-nature/A-Plague-of-Pigs-in-Texas.html#ixzz2RKQrolDu>.

70. See News Release, Mich. Dep’t Natural Res., *supra* note 24.

71. *DNR Director Signs Order to Make Feral Swine Invasive Species in Michigan*, OUTDOOR NEWS, Dec. 14, 2010, <http://www.outdoornews.com/December-2010/DNRE-Director-Signs-Order-to-Make-Feral-Swine-Invasive-Species-in-Michigan/> [hereinafter *DNR Director Signs Order*].

72. *Id.*

73. WILDLIFE SERVS. N.M., *supra* note 8, at 24.

tempt to find a regulation that would take these interests into consideration. Unfortunately, this attempt ultimately failed.

B. How to Regulate: Multiple Party Cooperation

Once MDNR decided to regulate feral swine, they needed to choose a method. They chose to regulate by classifying feral swine as an invasive species, instead of placing more stringent restrictions on those who already owned them. This is likely because a great number of feral swine already existed in the wild, and, as discussed above, it is widely debated whether they can actually be contained with any real success. Federal Executive Order 13112 recognizes “invasive species” as a serious threat to the environment, and is defined as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.”⁷⁴ Michigan statutory law dictates that the decision to classify pigs as an invasive species must be made in conjunction by the MDNR and Michigan Department of Agriculture and Rural Development (MDARD).⁷⁵ Further, MDARD is the agency that regulates swine importation into Michigan.⁷⁶

In 2011, Michigan Department of Natural Resources classified “wild boar” as an invasive species and prohibits its possession, subject to civil and criminal penalties.⁷⁷ The language of the Order is that:

By authority conferred on the Department of Natural Resources by section 41302 of the Natural Resources Environmental Protection Act . . . and in consultation with the Department of Agriculture . . .

40.4 Additional prohibited species. (1) Possession of the following live species, including a hybrid or genetic variant of the species, an egg or offspring of the species or of a hybrid or genetically engineered variant, is prohibited:

. . . . (b) Wild boar, wild hog, wild swine, feral pig, feral hog, feral swine, Old world swine, razorback, eurasian wild boar, Russian wild boar (*Sus scrofa* Linnaeus).⁷⁸

74. Cassandra Burdyshaw, *Detailed Discussion of the Laws Concerning Invasive Species*, MICH. STATE UNIV. COLL. OF LAW ANIMAL LEGAL & HISTORICAL CTR. (2011), <http://www.animallaw.info/articles/ddusinvasives.htm>.

75. MICH. COMP. LAWS ANN. § 324.41302 (2015).

76. See *Swine (Pigs)*, MICH. DEP’T AGRIC. & RURAL DEV., http://www.michigan.gov/mdard/0,4610,7-125-48096_48099-14231—,00.html.

77. See MICH. COMP. LAWS ANN. §§ 324.41309(2), (3)(b).

78. MICH. DEP’T NATURAL RES., INVASIVE SPECIES ORDER 40.4(1)(b) (2011).

Essentially, what this Invasive Species Order accomplished was prohibiting the possession of wild boar, as identified by the description in the Order, subject to civil and criminal penalties.⁷⁹ To further reduce the population, Michigan law allows anyone with a hunting license or a valid concealed pistol permit to kill swine on public property; and private property owners can kill (or permit others to kill) feral swine on their property.⁸⁰ However, as recognized by the DNR and MDARD in forming the feral swine working group, there were certain facilities and farms that possessed feral swine, whose possession would now become illegal. The feral swine work group “recommend[ed] [specific] regulations for wild boar breeding and shooting facilities, including fencing standards, biosecurity measures, methods of inventory, liability for escaped animals, indemnity, fees to support regulation and penalties for violation.”⁸¹

In 2010, Rebecca Humphries, Director of the Department of Natural Resources and Environment (“DNR”), “urged incoming legislative leaders to take up the recommendations in the form of legislation to regulate wild swine breeding and shooting facilities, and to place a moratorium on the establishment of any new swine breeding or shooting facilities.”⁸² She warned that if the legislature did not enact regulatory legislation, the Invasive Species Order would “go in to effect, making it illegal to possess wild boar in Michigan.”⁸³

C. Legislative Let-Down

The Order was signed in 2010, but with a July 8, 2011 effective date.⁸⁴ The delay in effectiveness was intentional, and provided the legislature with time to address questions of how feral swine farmers or hunting facilities should be regulated in order to keep their swine.⁸⁵ However, what resulted has been called a “failure” by the Michigan Legislature.⁸⁶ Ultimately, “[p]artisan bickering and an unwillingness to adopt regulations for hunting ranches left the DNR in the difficult position of having to try and stop feral swine with no direction from the Legislature.”⁸⁷ When the Invasive Species Order went into effect on October 8,

79. See MICH. COMP. LAWS ANN. § 324.41309.

80. *Rules for Shooting Feral Swine*, MICH. DEP’T NATURAL RES., http://www.michigan.gov/dnr/0,4570,7-153-10370_12145_55230-230093—,00.html (last visited Dec. 30, 2015) (this has also, aptly enough, been referred to as the “Just Shoot ‘Em” law).

81. *DNR Director Signs Order*, *supra* note 71.

82. *Id.*

83. *Id.*

84. *Id.*

85. *Id.*

86. *Puit*, *supra* note 18.

87. *Id.* (One week after the DNR issued the Invasive Species Order, “three bills were introduced in the Legislature that attempted to regulate the sporting swine industry. The bills

2011, no legislative exclusions for farmers or hunting facilities passed, and therefore, it became illegal for them to possess feral swine.⁸⁸ The MDNR gave hunting facilities six months to schedule hunts to reduce their sporting swine population, with enforcement of the Order held in abeyance until April 1, 2012.⁸⁹ The MDNR stated that after that date, it would conduct compliance visits, and those not found in compliance could face violations and fines.⁹⁰

The feral swine working group was by no means perfect in crafting a compromise or a solution, but it attempted to take into consideration multiple interests and give guidance to the Michigan legislature on how to regulate hunting facilities.⁹¹ In the end, the working group presented its findings to the DNR and the Department of Agriculture, but the proposed legislative actions died in the Michigan Legislature.⁹²

IV. UNANTICIPATED RESULTS

A. Backlash from Owners: Killing and Releasing

Many of the responses to this legislative failure were unexpected. These include backlash from owners of feral swine; a pitting of half the agricultural community against the other; and multiple lawsuits against MDNR challenging the legality of the Invasive Species Order.

Because the legislature didn't pass any regulations or exemptions for those who already owned feral swine, feral swine farmers, and hunting facilities were incredibly upset with the Invasive Species Order.⁹³ Some were forced to slaughter their own animals to avoid being charged with illegal possession, and found this scene traumatizing.⁹⁴ There is suspicion that many refused to set up hunts to kill their hogs and instead set their hogs loose, evidenced by the correlation that, despite the April 1 Order, the hog population seems to still be growing.⁹⁵ According to Nancy Frank, assistant state veterinarian in the Michigan Department

never made it out of committee").

88. MICH. DEP'T NATURAL RES., INVASIVE SPECIES ORDER 40.4(1)(b) (2011) (while the original effective date of the order was July 8, 2011, the Director of the Michigan Department of Natural Resources executed an Order on August 8, 2011, extending the effective date for only Sec. 40.4(1b) (on feral swine) to October 8, 2011).

89. *DNR Order Listing Sporting Swine as Invasive Species Takes Effect*, AM. ASS'N. SWINE VETERINARIANS (Oct. 19, 2011), <https://www.aasv.org/news/story.php?id=5216>.

90. *Id.*

91. Puit, *supra* note 18.

92. *Id.*

93. *Id.*

94. *Id.*

95. Dzwonkowski, *supra* note 7.

of Agriculture and Rural Development, there are certain areas of the state that are now “hotspots,” including Midland, Mecosta, Bay and Saginaw counties.⁹⁶ While the agency anticipated blowback from hunting facilities, it did not predict a serious fight with farmers.⁹⁷

B. Framing the Argument: Splitting the Agricultural Community

Another interesting and unanticipated result of the Order is that in framing arguments for and against the Order, strange alliances within the agricultural community were forged. “The conflict over the beasts has created odd alliances among foodies, environmentalists, agribusiness, hunters, and regulators in a state that normally tries to nurture businesses but in this case wants to exterminate one.”⁹⁸ One of the most vocal in opposition to the ban is Mark Baker, a small farmer in Marion, Michigan who has breeds of Russian boar and the heritage breed Mangalitsa.⁹⁹ Baker is just one of the opponents embroiled in a lawsuit with the DNR, but what is most interesting is that how he has publicized his argument and garnered support for his position.¹⁰⁰ Baker has a sales website with pages devoted to defending his right to raise and eat “feral swine” and has created a YouTube video that has over 100,000 views, called “Baker’s Green Acres vs. Michigan DNR—Family Farms Under Attack.”¹⁰¹ In the video and in his interviews, Baker describes the Order as a result of collusion between the state and “big industry” in the Pork Producers Association out to get small, family farms.¹⁰² This is likely a reference to the Feral Swine Working group’s creation. He compares his struggle to that of the founders of the United States during the revolution, and posits that small farms and businesses are the backbone of the country, and this backbone is under attack by the Invasive Species Order.¹⁰³

Even outsiders like “Mike Adams, an Arizona-based conservative commentator, produced a podcast charging that ‘the state of Michigan is now just days away from kicking in the doors of all these farmers, shooting the pigs, and

96. *Id.*

97. Elizabeth Meister, *Battle Over Michigan’s New Swine Rules Goes Hog Wild*, NAT’L PUB. RADIO (Aug. 31, 2012, 4:45 PM ET), <http://www.npr.org/templates/transcript/transcript.php?storyId=160394513>.

98. *Ban on Exotic Swine*, *supra* note 12.

99. Meister, *supra* note 97.

100. *See Videos*, BAKERS GREEN ACRES, http://bakersgreenacres.com/?page_id=1141 (last visited Jan. 25, 2016).

101. *Id.*; *Baker’s Green Acres vs. Michigan DNR—Family Farms Under Attack*, YOUTUBE (Mar. 21, 2012), http://www.youtube.com/watch?feature=player_embedded&v=843yH_0RMIA.

102. *See Videos*, *supra* note 100.

103. *Id.*

then arresting all of these farmers as felons.”¹⁰⁴ He too is concerned with the attack on small farmers and the farming community in general.¹⁰⁵

In response, Mr. Hines of the Pork Producers association said “[u]nfortunately some of the champions of these hunting ranches in the Legislature, for whatever reason . . . have embarked on a smear campaign directed at Michigan pork producers, saying this is big agriculture conspiring with the DNR to put the small hog farmer out of business,”¹⁰⁶ which Mr. Hines calls “utter nonsense.”¹⁰⁷ In support of his position, he pointed out “there are approximately 1,500 pig farmers in Michigan who have less than 100 hogs.”¹⁰⁸

Advocates of direct farm-to-consumer and those who support the small Michigan agricultural community also oppose the government telling them what kind of pigs they can raise. This pits integral sides of the agricultural community against one another. In turn, framing the argument this way perhaps perverts the discussion or understanding of the public at large, who aren’t aware of the potentially devastating impact that feral swine, if escaped from these small farms, can have on an agricultural community. Instead, they see it as an infringement on their property rights or right to farm. This view seems to undercut the rationale behind forming the feral swine working group to begin with taking all interests and opinions into account to create a method to control feral swine.

C. Litigation

Both farmers and hunting facilities were vocal opponents to the order, and as a result, they attempted to challenge it in court. As of 2012, as many as five lawsuits had been filed against the DNR (which consolidated into one case for a ruling by the court) by interested parties like Mark Baker, or those with hunting ranches challenging the ban.¹⁰⁹ Illustrating the wide array of opponents to the ban, one of the five lawsuits involved a man and a woman who kept two pigs as family pets.¹¹⁰

As discussed above, “[t]he DNR regulation lists a number of characteristics that could be used to determine a hog’s status”¹¹¹ as either feral and prohibited, or

104. Meister, *supra* note 97.

105. *Id.*

106. Puit, *supra* note 18.

107. *Id.*

108. *Id.*

109. Dzwonkowski, *supra* note 7.

110. *Judge Denies Request to Overturn Michigan Exotic Swine Ban*, N. MICH. CONSERVATION NETWORK (Nov. 25, 2012), <http://nmconservationnetwork.org/2012/11/25/judge-denies-request-to-overturn-michigan-exotic-swine-ban/> [hereinafter *Judge Denies*].

111. *Id.*

domestic/agricultural and permitted. Plaintiffs challenged the unconstitutional vagueness of the order in Marquette County Circuit Court.¹¹² Plaintiffs argued that some of the descriptions, including descriptions of tails and ears, applied generally to any swine, including domestic hogs.¹¹³ They also argued that such vagueness gives inspectors too much power, and that “the underlying motive is to eliminate a growing competitor to mass-produced pork.”¹¹⁴ Finally, they posited that the order fails to provide citizens with adequate notice to know which pigs are illegal.¹¹⁵

The DNR responded to these arguments and said it considered all characteristics when it passed judgment.¹¹⁶ “In his written opinion, Judge Thomas Solka noted a U.S. Supreme Court ruling that a person doing something illegal has no standing to complain the law is too unclear to be applied to others.”¹¹⁷ Further, he noted that “[a] state court also found that owners of ‘wolfdog’ hybrids could not challenge a ban on those animals on grounds of vagueness,” applying that same rationale to the feral swine case.¹¹⁸ Solka further said that “[t]he people fighting the feral swine rule have acknowledged possessing such animals, so they can’t use the vagueness argument.”¹¹⁹

However, the judge said that lawsuits challenging the policy could go forward, because they raise other arguments for the court to consider, like “that the policy is arbitrary, violates due process and amounts to an illegal government taking of private property.”¹²⁰

On May 17, 2011, plaintiffs filed their first amended complaint for declarative and injunctive relief, which alleged that the ISO amendment was an unconstitutional taking of plaintiffs’ property, that defendant’s director lacked the authority to issue the ISO amendment, that the swine listed on the ISO amendment were not invasive species as defined by the invasive species act, and that plaintiffs would be irreparably harmed if the ISO amendment were allowed to take effect. Defendant answered plaintiffs’ complaint and disputed all plaintiffs’ allegations.¹²¹

112. *Id.*

113. Meister, *supra* note 97.

114. *Ban on Exotic Swine*, *supra* note 12.

115. Meister, *supra* note 97.

116. *See id.*

117. *Judge Denies*, *supra* note 110.

118. *Id.*

119. *Id.*

120. *Id.*

121. Mich. Animal Farmers Ass’n v. Dept. of Natural Res. & Env’t, No. 305302, 2012 WL 676386 ,at *1 (Mich. Ct. App. Mar. 1, 2012).

The Michigan Court of Appeals affirmed the trial court's order denying the plaintiffs motion for summary disposition and request for preliminary injunction.¹²² The court affirmed the authority to add or delete from the list of prohibited species belonged to the Natural Resources Commission, pursuant to MCL 324.41302; and pursuant to Executive Order 2009-45, the Commission of Natural Resources was transferred to the director of the DNRE.¹²³ Next, using statutory interpretation and dictionary definitions, the court found that feral swine were not "native" to Michigan under the statute, and thus otherwise met the requirements of the invasive species statute such that the DNR could prohibit them.¹²⁴ Finally, in considering the plaintiffs' argument that the statute constituted a regulatory taking the court found that the plaintiffs failed to show they would suffer irreparable injury if an injunction was not issued.¹²⁵ The court found that the enforcement of the invasive species order did not take place until March 31, 2012, which allowed owners of swine to cease possession and because all property that was lost could be subject to a claim for governmental compensation by the Court of Claims.¹²⁶

An update to this case occurred in 2014. The Marquette Circuit Court issued a ruling overturning the DNR's Invasive Species Order, concluding that the standards for hog identification are "arbitrary and capricious" and constitute an illegal taking of property.¹²⁷ This will remain an ongoing issue to watch in the courts, and responses have ranged in extremity. On one hand, "leaders like "MUCC along with agricultural and conservation leaders across the state, are calling on Governor Snyder and Attorney General Bill Schuette to pursue an appeal of this ruling."¹²⁸ At the other extreme,

Representative Greg MacMaster's has gone as far as to try and grant wild boar born in Michigan "citizenship" —HB 5432 would deem any swine born in Michigan or legally imported to Michigan as "native," meaning that they could only be identified as livestock and could not be considered invasive species.¹²⁹

Ultimately, "[i]n June 2014, after the court entered its order granting plaintiffs' partial summary disposition, the DNR rescinded the declaratory

122. *Id.* at *4-7.

123. *Id.* at *5-7.

124. *Id.* at *5.

125. *Id.* at *7.

126. *Id.*

127. Amy Trotter, *Michigan Feral Swine Saga Not Over*, MICH. UNITED CONSERVATION CLUBS (Apr. 2, 2014), http://www.mucc.org/michigan_feral_swine_saga_not_over.

128. *Id.*

129. *Id.*

ing.”¹³⁰ This rescission changed the issues before the court, thus eliminating the earlier legal arguments of ambiguity.¹³¹

In June of 2015, the case came before the Michigan Court of Appeals in *Johnson v. Department of Natural Resources*.¹³² The court took judicial notice that DNR had rescinded the declaratory ruling “because ‘[m]any in the public have confused the Declaratory Ruling with the Invasive Species Order and misread it as interpreting the Invasive Species Order to apply to animals other than Russian boar and their hybrids.’”¹³³ Since the Court was reviewing “a regulatory action that does not implicate fundamental rights, the ISO is subject to rational-basis review.”¹³⁴ This meant that the Court “must uphold the ISO if the DNR’s decision to issue it is ‘supported by any set of facts, either known or which could reasonably be assumed, even if such facts may be debatable.’”¹³⁵

In its opinion, the Court referenced the irreparable damage feral swine, when unregulated, have caused in other states like Texas.¹³⁶ Further, because DNR rescinded the declaratory ruling, the Court stated that it “need not consider the uncertainties and ambiguities created by that document. The remaining issues are whether the ISO is unconstitutional on due process or equal protection grounds, or void for vagueness.”¹³⁷

Ultimately, the Court found that DNR’s arguments withstood the Equal Protection Clause, Due Process Clause, Void for Vagueness, and Takings challenges made by Plaintiffs.¹³⁸ The Michigan Court of Appeals reversed the circuit court’s finding of unconstitutionality of the order, stating:

The rules governing our review of this dispute command us to afford great deference to the DNR’s method for delineating a particular invasive species.

130. *Johnson v. Dep’t of Natural Res.*, No. 321337, 2015 WL 3476408, slip op. at 8 (Mich. Ct. App. June 2, 2015).

131. *Id.*

132. *Id.*

133. *Id.*; MICH. DEP’T NATURAL RES., INVASIVE SPECIES ORDER AMENDMENT NO. 1 OF 2011 (2014) (rescinding the Declaratory Ruling by the Department of Natural Resources prohibiting the possession of Russian boar and Russian hybrid boars).

134. *Johnson*, 2015 WL 3476408, slip op. at 9.

135. *Johnson*, 2015 WL 3476408, slip op. at 9 (quoting *Crego v. Coleman*, 615 N.W.2d 218, 259-60 (Mich. 2000); *Shavers v. Kelley*, 267 N.W.2d 72, 96 (Mich. 1978)).

136. *Johnson*, 2015 WL 3476408, slip op. at 3 (“Michigan is not the only state plagued with wild pigs. ‘The 2.6 million pigs in Texas cause \$500 million in damage each year—a liability of \$200 per pig.’” (quoting Amy Nordrum, *Can Wild Pigs Ravaging the U.S. be Stopped?*, SCI. AM. (Oct. 21, 2014), <http://www.scientificamerican.com/article/can-wild-pigs-ravaging-the-u-s-be-stopped/>)).

137. *Johnson*, 2015 WL 3476408, slip op. at 8.

138. See generally *id.*

The classification at issue may be imperfect, but it is neither unconstitutionally vague nor irrational. We reverse the circuit court's equal protection and due process rulings, dissolve the injunction it imposed, and affirm that the invasive species order possesses sufficient clarity to pass constitutional muster.¹³⁹

Ultimately, this is an issue that has received much attention and action in the court system, and is certainly one to keep an eye on, both in Michigan as well as in other states.

D. A Comparison to Other State Efforts: New Mexico Success?

"In January 2013 New Mexico got serious about getting rid of the non-native swine. At that point, feral hogs were in 17 of 33 counties."¹⁴⁰

The New Mexico senate enacted house bill (HB) 594 on March 3, 2009.

The new section of The Livestock Code is enacted to read:

FERAL HOGS –PROHIBITION—PENALTY.—

A. The purpose of this section is to ensure the public health, safety and welfare and to prevent the introduction or spread of disease to New Mexico's livestock and wildlife.

B. No person shall import into the state, transport within the state, hold for breeding, release or sell a live feral hog or operate a commercial feral hog hunting enterprise.

C. Any person who violates this section is guilty of a misdemeanor and shall be punished by a fine of not more than one thousand dollars (\$1,000) or by imprisonment for a definite term of less than one year or both.

D. As used in this section, "feral hog" means a pig that exists in an unwanted state from domestication.¹⁴¹

New Mexico's Hunting Guide states "[f]eral hogs are an unprotected species: [h]unting this non-native intruder is encouraged."¹⁴² "Because of the nega-

139. *Id.* at slip op. 2.

140. Kayla Aryes, *Feral Hog Eradiction Efforts Working in N.M.*, KRQE NEWS 13 (June 9, 2014, 3:46 PM), <http://krqe.com/2014/06/09/feral-hog-eradication-efforts-working-in-n-m/>.

141. H.B. 594, 2000 Leg., 44th Sess. (N.M. 2000); WILDLIFE SERVS. N.M., *supra*, note 8.

142. N.M. DEP'T GAME & FISH, 2015-2016 NEW MEXICO HUNTING RULES AND INFO 19 (2015), http://www.wildlife.state.nm.us/download/publications/rib/2015/hunting/_2015_16-

tive impact this non-native intruder causes, residents and nonresidents legally may hunt feral hogs year-round without a license.”¹⁴³

New Mexico has used multiple methods of eradication, including snaring, night shooting, cage trap, corral trap and aerial shooting.¹⁴⁴ In mid-2014, USDA Wildlife Biologist Brian Archuleta reported that about 750 hogs had been removed from New Mexico in the previous year and a half.¹⁴⁵ According to Alan May, State Director of the Wildlife Services Division of the United States Department of Agriculture’s Animal Plant Protection Service (APHIS) in Albuquerque, “[f]ederal hunters tracked down and eliminated about 700 wild pigs last year on about 5 million acres of land in 15 of 17 affected counties.”¹⁴⁶ New Mexico guidelines on hunting feral swine carefully to differentiate feral swine from Javelinas, which is “a native game animal, the hunting of which is regulated by the state Department of Game and Fish.”¹⁴⁷ In terms of regulatory jurisdiction, “[b]ecause wild hogs are classified as feral domestic livestock, not wildlife, state game and fish officers have no jurisdiction over them which is why the USDA’s Wildlife Service’s specialists, like [Ron] Jones, are leading the charge.”¹⁴⁸ In addition to resident and non-resident hunters, Jones is one of 28 federal wildlife specialists working to eradicate feral swine in New Mexico, and he has been working almost full time on hunting “nothing but feral swine.”¹⁴⁹

It is valuable to compare the efforts, successes, and differences in New Mexico’s approach to feral swine reductions to Michigan. First, the USDA earmarked \$1 million to help states eliminate feral swine, an interesting federal and state agency partnership. “It marks the first time the U.S. Department of Agriculture has teamed up with a state to develop a comprehensive plan for getting rid of the pigs.”¹⁵⁰ This unprecedented level of support helps remove road blocks to

New-Mexico-Hunting-Rules-And-Info2.pdf.

143. *Id.* (However, “general hunting rules still apply—such as obtaining permission if hunting on private land, no hunting with the aid of an artificial light and no discharging of firearms within 150 yards of an occupied dwelling.”).

144. Aryes, *supra* note 140.

145. *Id.*

146. Karl Moffatt, *New Mexico Winning War on Wild Hogs*, OUTDOORSNEWMEXICO.COM (June 24, 2014), <http://www.outdoorsnewmexico.com/2014/uncategorized/nm-winning-the-war-on-wild-hogs/> [hereinafter *New Mexico Winning*].

147. Karl Moffatt, *Wild Hogs Invade New Mexico & Threaten to Wreak Havoc*, OUTDOORSNEWMEXICO.COM (Feb. 1, 2012), <http://www.outdoorsnewmexico.com/2012/uncategorized/wild-hogs-invade-new-mexico-threaten-to-wreak-havoc/> [hereinafter *Wild Hogs Invade*].

148. *Id.*

149. *Id.*

150. Susan Montoya Bryan, *New Mexico’s Feral Pig Project Will Cost \$1 Million in Federal Funds*, HUFFINGTON POST (Mar. 18, 2013),

state efforts to lower the feral swine population.

Wildlife managers had complained for years about a lack of manpower and money to fight the growing pig problem. Now, they say the pilot program will enable them to systematically take out populations that are centered along the Canadian and Pecos rivers in eastern New Mexico, in the Bootheel and along the Middle Rio Grande, home to thousands of acres of irrigated farmland.¹⁵¹

With the aid of the USDA, wildlife managers report “good results despite some uncooperative private landowners.”¹⁵² However, New Mexico’s private landowner backlash is not nearly as problematic as Michigan’s. New Mexico is not faced with the same concerted legal effort to challenge governmental attempts to control the swine. Further, in terms of methods, the New Mexico team is “focus[ed] on determining what combination works best in which circumstances.”¹⁵³ Extensive research has been completed to see which hunting techniques can eradicate the most swine.¹⁵⁴ For example, the use of the “Judas Pig” hunting method, as suggested in the Eradication Plan is “a very effective way . . . to find and eliminate large groups of pigs in a single outing.”¹⁵⁵ The Judas Pig method “involves placing radio transmitters on feral hogs to disclose the whereabouts of other populations.”¹⁵⁶ Thus, “this technique takes advantage of the gregarious behavior of feral hogs”¹⁵⁷ to help locate them in large groups.

An important difference between New Mexico and Michigan is the community and federal government agency support. It seems that the New Mexico landowner and small farm backlash has been far less influential in bogging down the process of eradication in New Mexico than in Michigan. The level of community support, and the USDA’s financial support sets New Mexico’s efforts up to be successful, whereas Michigan’s state-wide efforts, have been tied up by lawsuits from small farmers and private pig owners. Further, unlike New Mexico at the state government level, Michigan’s DNR *was* found to have the authority to control the feral swine, thus, there seems to be no comparable funding from the USDA. New Mexico’s intergovernmental cooperation is the first of its kind and more successful than Michigan thus far.

http://www.huffingtonpost.com/2013/03/18/feral-pigs-project-new-mexico-texas_n_2902876.html.

151. *Id.*

152. *New Mexico Winning*, *supra* note 146.

153. Bryan, *supra* note 150.

154. *See* WILDLIFE SERVS. N.M., *supra* note 8.

155. *Wild Hogs Invade*, *supra* note 147.

156. WILDLIFE SERVS. N.M., *supra*, note 8.

157. *Id.*

A second, important difference is New Mexico's unique climate, environmental, and agricultural settings.

Population dynamics are a key factor in designing and implementing control strategies. Environmental conditions have a great deal of influence on the reproductive capacity of wild female pigs; in particular areas with limited food availability, juvenile females generally do not breed. Therefore, in certain areas, recreational hunting that removes mostly adults may be a successful tactic on its own.¹⁵⁸

The availability of food in the harsh, dry climate of New Mexico (as opposed to Michigan's climate, which provides large numbers of agricultural and natural food sources) may be an integral factor in why their efforts have been more successful. With limited food sources and drought in New Mexico, female pigs are limited in their reproductive capacity.¹⁵⁹ These same environmental conditions are even cited as at least partially responsible for helping eradicate some of the swine naturally.¹⁶⁰

Lastly, New Mexico's hunting strategies are considerably different from Michigan's. Michigan did not implement the "Judas Pig" hunting method that has been successful in eradicating the feral swine population in New Mexico. The aspects of New Mexico's landscape differs greatly from Michigan's, meaning aerial hunting, the component that is integral to the Judas Pig strategy is not a feasible in Michigan thick vegetation.¹⁶¹ Normally, "[a]erial shooting can be effective in some areas, and despite the costs associated with aircraft, might be the most cost-effective solution in certain landscapes with low-growing vegetation and relatively flat topography where wild pig populations are dense."¹⁶² New Mexico's use of for aerial transportation and because its terrain is well-suited for this type of effective hunting strategy may be partly responsible for why their efforts have been more successful. The primary takeaway from comparing these efforts is that unique, political, cultural, and natural state-specific elements *must* be taken into account for eradication efforts to be successful.

V. IMPACTS OF THE BACKLASH: TOO LATE FOR ERADICATION?

There are many who argue that Michigan's plan to eradicate has "fallen so short," "there seems to be an attitude shift within the last six years from dogged determination to exterminate the population to a rather resigned new emphasis on

158. Lefkowitz, *supra* note 3.

159. See WILDLIFE SERVS. N.M., *supra* note 8, at 7, 17.

160. Lefkowitz, *supra* note 3.

161. See WILDLIFE SERVS. N.M., *supra* note 8, at 24.

162. Lefkowitz, *supra* note 3.

control.”¹⁶³ “‘We want to eradicate them, but no state has ever done it,’ said DNR wildlife biologist Shannon Hannah.”¹⁶⁴ An important statistic to note: “[i]f 70 percent of the pigs in a region are killed, the remaining ones can have piglets fast enough to replace all those lost in just two and a half years.”¹⁶⁵

“Other states tell us we’re at the tipping point now with an estimate of between 1,000 pigs and 3,000 pigs,” which is the number of feral swine estimated to be in Michigan currently.¹⁶⁶ Dr. James Averill, veterinarian and doctor of MDARD’s animal industry section says that this shift in approach is not necessarily a shift in philosophy, “[w]e would love to eradicate them, but first we have to find them, so the emphasis of our efforts is to try to control them and get additional resources.”¹⁶⁷

One reason for this state of things is the “detour” the state took in “fighting over this issue when all the groups involved were on the same page as far as eliminating wild pigs.”¹⁶⁸ “Unfortunately, the same effort wasn’t put forth outside the fences as it was dealing with pigs inside fences.”¹⁶⁹ The lawsuits and regulation of those who already owned the pigs weren’t helpful to targeting the feral swine already on the loose. As an example, in Cheboygan, the DNR was forced to file its first lawsuit to enforce the ban against a ranch that refused to let a DNR officer on its land.¹⁷⁰ A lawsuit like this, along with the multiple other lawsuits DNR faced took away from available resources that could have been spent eradicating swine on the loose. The “red tape” within the government is also targeted as part of the problem—as feral swine have been a growing problem for some time, and now that they are getting out of control governmental intervention may be too late.¹⁷¹ Dr. Pat Rusz, director of wildlife programs as Michigan Wildlife Conservancy says “[w]e’ve had a lot of committee meetings, but no one has gone after the hogs. We’ve lost years, and allowed the hogs to gain a foothold because we wanted everyone to be on the same page. This is a multi-faceted problem.

163. Paul W. Jackson, *Are Wild Pigs Out of Control?*, MICH. AG CONNECTION (Sept. 9, 2012), <http://www.michiganagconnection.com/story-state.php?Id=711&yr=2012>.

164. *Id.*

165. Amy Nordrum, *Can Wild Pigs Ravaging the U.S. Be Stopped?*, SCI. AM. (Oct. 21, 2014), <http://www.scientificamerican.com/article/can-wild-pigs-ravaging-the-u-s-be-stopped/>.

166. Jackson, *supra* note 163.

167. *Id.*

168. *Id.*

169. *Id.*

170. Linda Stephen, *Banned Pigs: State Targets Cheboygan Hunting Ranch*, INTERLOCHEN PUB. RADIO (Apr. 11, 2012), <http://interlochenpublicradio.org/post/banned-pigs-state-targets-cheboygan-county-hunting-ranch>.

171. See Jackson, *supra* note 163.

Now is the time for leadership, not consensus-building.”¹⁷²

VI. SOLUTIONS

A. Attempt for Eradication Through Enforcement

Based on the efforts and experiences of other states, (and contingent on the outcome of the afore-mentioned appeal that is pending), there may still be time to reverse the spread of feral hogs, but it would take a concerted effort. One technique is to target the feral swine in the wild, not those on ranches and farms. As discussed, feral swine may be shot on sight, even without a permit.¹⁷³ However, that approach is not without challenge because even though Michigan “encourage[s] hunters to shoot them . . . they’re very elusive.”¹⁷⁴ Not only are they difficult to shoot, “[t]hey are a very tough animal and can survive on just roots during a Michigan winter.”¹⁷⁵ Thus, “[s]port hunting pressure alone won’t be enough to stop a population from spreading.”¹⁷⁶ A more comprehensive plan would focus on areas where they are known to be heavily concentrated, but “the undertaking of a comprehensive program involving trapping and hunting feral swine is a massive undertaking and would require local, state and federal participation.”¹⁷⁷

One area where Michigan could follow the example of New Mexico would be to seek federal funding and support. In September 2014, the “USDA kick[ed] off a national effort to ‘reduce the devastating effort caused by feral, or free ranging, swine.’”¹⁷⁸ There was a budget of \$9.5 million for state projects that could to help the state overcome some of the judicial red tape, and reallocate resources to hunt swine in the wild before their numbers exceed control.¹⁷⁹ As discussed above, federal funding is an understated and integral difference between Michigan’s and New Mexico’s plans. Also, Michigan should re-focus its attack from feral swine confined to those that are freely breeding in the wild.

Some studies examining which types of eradication techniques may be

172. *Id.*

173. Puit, *supra* note 18.

174. Ryan Schlehuber, *Woods and Water: On the cusp of a feral swine outbreak?*, GREENVILLE DAILY NEWS, Sept. 30, 2014, <http://thedailynews.cc/2014/09/30/woods-water-on-the-cusp-of-a-feral-swine-outbreak/>.

175. *Id.*

176. Bryan, *supra* note 150.

177. *Id.*

178. News Release, APHIS, USDA, USDA Announces \$20 Million Effort to Reduce Damage Caused by Feral Swine (Apr. 2, 2014), http://www.aphis.usda.gov/wps/portal/aphis/home/?1dmy&urile=wcm:path:/aphis_content_library/sa_newsroom/sa_news/sa_by_date/sa_2014/sa_04/ct_feral_swine.

179. *See id.*

most effective in Michigan's climate have already occurred,¹⁸⁰ but "[t]o eradicate feral swine from Michigan, we need to develop a better understanding of their ecology — specifically, how they use and disperse through landscapes . . . [w]e have several questions to answer that will ultimately help us control feral swine more efficiently."¹⁸¹ Michigan must learn from and adapt New Mexico's strategy to its unique climate and natural environmental factors in order to craft an effective hunting technique.

However, a counterargument to focusing on free range swine and leaving owners alone is that "[a]t the heart of the conflict is this very issue of whether the animals can be contained. Those who are advocating for a complete ban on feral swine say you can't [contain them]."¹⁸² This argument is not without merit, especially in a climate like Michigan where feral swine thrive. For the feral swine that are loose right now, those "[i]nvasive pigs are going to be removed only when people decide to take personal responsibility for the problem and go hunting."¹⁸³ *But* there is a strong argument to eradicate the ranch and farm population as well. Although difficult to prove, it is suspected that escaped ranch and farm swine are what caused the population growth in the first place, and it can happen again if not regulated. Michigan must exhaust eradication as a possibility, not give up on that option and settle for control. Giving up on the option of eradication raises other concerns in itself.

In Texas, which allows "hunters to kill wild hogs year-round without limits or capture them alive to take to slaughterhouses to be processed and sold to restaurants as exotic meat . . . the goal is not eradication, which few believe possible, but control."¹⁸⁴ If it came to the point where eradication was not possible, Michigan's agriculture would be in jeopardy of succumbing to an invasive threat.

B. Attempt for Eradication Through Legislation

Part of the solution may be to pass legislation that defines feral swine dif-

180. See *Scientists Plan Study of Michigan's Exotic Swine*, LANSING STATE JOURNAL, Oct. 10, 2014,

<http://www.lansingstatejournal.com/story/news/local/michigan/2014/10/05/scientists-plan-study-of-michigans-exotic-swine/16782915/> (Researchers seek to develop a predictive model of how feral swine use their habitats and seek to uncover if there are times of the year when the groups may be particularly vulnerable).

181. *Id.*

182. Puit, *supra* note 18.

183. Jackson Landers, *Want to Help the Environment? Go Shoot a Pig*, SLATE (Aug. 9, 2012),

http://www.slate.com/articles/health_and_science/science/2012/08/hunt_wild_pigs_for_the_environment_kill_and_eat_invasive_species_.html.

184. Morthland, *supra* note 69.

ferently or places regulations on hunting and farming facilities or both. Compared to the disbelief that feral swine can adequately be enclosed, this is a legislative option instead of an enforcement option. This may involve changing what type of swine is primarily targeted by the Invasive Species Order.

Much of the time that DNR spent enforcing the order was targeted at those who kept the swine legally on hunting ranches or on farms, and, as discussed above, this faced a lot of opposition and legal red tape. “In at least two other states, Oregon and Wisconsin, there are strict feral swine rules in place, but both states also provide farmers an opportunity for an exemption for well-contained swine, like those found on farms.”¹⁸⁵ Rick Boatner, Oregon Department of Fish and Wildlife’s invasive species wildlife integrity coordinator said “[w]e have pot belly pigs that are feral crossbreeds, so our (rules) defines more by where the (pigs) are. If it’s not on a farm lot, then it’s feral.”¹⁸⁶ “There are a variety of definitions from state to state.”¹⁸⁷ Other legislative models follow Maine’s approach, which is to define “domesticated boar” instead of defining feral swine.¹⁸⁸

Michigan has proposed legislation to regulate feral swine within ranches, but partisan bickering is what held back passage of the bills. “Reps. Ed McBroom and Sharon Tyler, introduced legislation [such] as the Sporting Swine Marketing Act.”¹⁸⁹ In fact, “[t]his legislation, according to Mr. McBroom’s website, would make sporting swine part of Michigan’s livestock industry, and requiring gaming operations to register their animals. The legislation also established fencing, testing, tagging, and record keeping requirements, as well as developing penalties for accidental or deliberate release of swine.”¹⁹⁰

Other states have attempted legislation similar to Michigan’s ban. This includes Maryland, which found that feral swine “have been determined to be harmful to livestock or poultry” and prohibited possession in their state.¹⁹¹ Perhaps, as discussed above, maintaining (or even strengthening) the ban is the only option if there is any hope of eradication in Michigan.

VII. CONCLUSION

This is an issue that impacts a wide variety of Michigan’s agricultural

185. Puit, *supra* note 18.

186. *Id.*

187. *Id.*

188. ME. REV. STAT. ANN. Tit. 7 § 1341(3) (2015).

189. Puit, *supra* note 18; see MICH. HOUSE FISCAL AGENCY, LEGISLATIVE ANALYSIS: SPORTING SWINE MARKETING ACT, HOUSE BILLS 4503, 4506, AND 4507 (2011), <http://www.legislature.mi.gov/documents/2011-2012/billanalysis/House/pdf/2011-HLA-4503-1.pdf>.

190. Puit, *supra* note 18.

191. MD. CODE REGS. 15.11.16.01(A) (2015).

community. It has brought together unlikely allies and had, at times, surprising opponents. Michigan's regulatory and legislative problems are illustrative of how crucial it is for different parts of state government to work in conjunction. Here, the Department of Natural Resources not only reached out to the Department of Agriculture, but they in turn reached out to form a feral swine working group of those whose interests would be impacted. However, collaborative work like this at the policy stage is in vain when the legislature chooses not to address or adopt any of the suggestions, and thus angering the members of the agricultural community and spurring them into both protest and legal action. This undercuts the effectiveness of the Order's purpose: to lessen the number of feral swine in Michigan.

There are those that argue that the amount of damage that these feral swine can cause on the economy, natural resources, environment, and agriculture of Michigan outweigh the value in protecting hunting ranch and feral swine farmers' rights to possess them. However, this involves a balancing that has to weigh two very important and difficult-to-reconcile interests: freedom of an individual to "farm" what they want to farm, and protecting society's interests in not having feral swine. There is no easy answer to this question, but based on the trajectory of the case thus far, despite the recent decision of the Marquette court, what the courts and legislature will do in the future is likely to defer to the expertise of the DNR and MDARD who recommended the ban. Part of what may persuade the courts are comparable states like Maryland who have enacted similar bans, compared to other states like Texas, for whom it is too late. The exhaustive list of negative consequences that accompany feral swine, and the examples of what non-regulation can spiral into from other states has given them cause to classify feral swine as an invasive species for good reason. Therefore, I predict the courts will echo the Michigan Court of Appeals in upholding the ban and supporting the MDNR in their enforcement. However, if MDNR does not gain more resources to target feral swine already in the wild, all this political and legal support may be in vain. Regardless, this is an issue for Michigan's agricultural community to keep a close eye on, as its impacts are immense and far-reaching.