

Wild Pig Newsletter

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County-based Cooperative Wild Pig Abatement

By: Andy James, Project Coordinator - Texas A&M Natural Resources Institute

Countywide wild pig abatement programs have been implemented across Texas for decades. Many of these programs are based on some type of bounty system, usually pertaining to a 1-3 month period when snouts, ears, or tails are brought to a central location and exchanged for money. While bounty programs do accomplish important objectives including promoting public awareness and providing the public incentive to reduce populations, there are several challenges and issues associated with these types of programs. There are usually a limited amount of funds associated with a bounty program and those funds tend to run out well before the end of the program, thereby eliminating the incentive for landowners to continue reducing the number of wild pigs on their property. Another issue raised with bounty programs is the perception that some participants may collect and freeze tails, ears, or snouts throughout the year in

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anticipation of a bounty program the following year. Concerns of participants cutting off the ears or tail and then releasing the hog have also risen in past programs. These types of problems have led many counties throughout the state to stop offering bounty programs and look for alternative opportunities to offer their constituents.

Co-ops for Wild Pigs

Cooperative land management efforts are increasing in popularity across Texas, and one alternative is the creation of a landowner cooperative (co-op) abatement program. Wildlife management co-ops allow for collective management plans, where relatively large tracts of land can be actively managed through the pooling of resources and effort. These same principles can be applied through a targeted wild pig abatement co-op. Landowners who are interested may enter the program by paying a small fee, usually on a per acre basis. This fee can then be matched by the county through various funding sources. By requiring landowners to match the funding that the county is putting towards the program, the amount of resources available to the program essentially doubles. The money then goes into a targeted abatement effort, bringing aerial gunning, corral traps, box traps, the use of wireless/suspended trap technologies and other means of reducing the damages associated with wild pigs.



Available county funding can be matched by participating landowners in order to purchase emerging technologies such as remote and suspended trapping systems.

Advantages of Wild Pig Co-op's

Advantages of a county-based wild pig co-op can include increased landowner engagement, reduced numbers of wild pigs over a continuous area, long-term success through continuous control and others. When landowners contribute funds to the program, they are much more likely to be engaged, while also taking advantage of the available services and expertise for as little as fifty cents on the dollar. Encouraging neighbors to participate together in a program ensures large, continuous tracts of land can be impacted. While the upfront cost of a county purchasing head gates and materials to build corral traps can be somewhat expensive, the long-term benefits are significant and can potentially quickly offset the initial investment. For example, while a bounty program may last 1-3 months, traps can last decades with regular maintenance and good care. Additionally, funds invested into a co-op program continue to work for the county, whereas once bounty funds are distributed they no longer contribute towards future wild pig abatement.



Adjacent landowners who participate together in cooperative wild pig abatement can increase the success of their efforts when enacting control methods such as trapping and aerial gunning.

A Case Study

Over the last 2 years, one central Texas county has successfully implemented a similar co-op type program instead of offering a conventional bounty program. The county was able to obtain several grants in the amount of \$37,500 along with an additional \$15,000 in county funds that were set aside for wild pig abatement efforts. The funding, along with funds from participating landowners, were then used to purchase enough materials to build 9

large corral traps and 5 remotely activated head gates. A suspended trapping system and other supplies including game cameras, corn, feeders, and batteries were also purchased. As assembly of the traps was completed, abatement efforts were then enacted over a period of 10-12 months. Since the first traps were placed on properties almost 2 years ago, more than 1,000 hogs have been trapped and removed from the population. A wild pig is estimated to cause a minimum of \$250 in annual damages, either to agriculture or through other means. Considering this figure, this Texas county has saved more than \$250,000 by implementing a county wide cooperative trapping program in lieu of a conventional bounty program. However, this figure is from trapping activities only, and does not include the additional savings incurred through other abatement strategies including aerial gunning, snaring, strategic shooting and the use of trained dogs.

Conclusion

County based cooperative wild pig abatement is a viable alternative to conventional bounty programs. If you are interested in participating in a similar program or are just curious as to what kinds of resources may be available to you within your county, a good place to start is to contact your county extension agent. He/she can inform you of what kinds of programs/resources are available in your county, and can also put you in touch with professionals such as those from Texas Wildlife Services who can assist with efforts such as beginning an aerial gunning regimen on your property and/or within the co-op. While the success of any cooperative hinges on collaboration and cooperator engagement, this strategy can offer a continuous and long term abatement alternative to conventional bounty programs.



The removal of over 1000 wild pigs in less than two years from one Texas county shows that county-based cooperative wild pig management can be successful. The resources and program are still in use today and will continue to serve landowners for many years to come.



An Evaluation of Contraceptive Viability in Wild Pig Management

By: Josh Helcel, Extension Associate, Texas A&M Natural Resources Institute

Contraception, or “birth control,” has long been suggested as a potential means of controlling wild pig (*Sus scrofa*) populations. While there are currently no pharmaceuticals labeled for use on wild pigs in Texas, the recent withdrawal of the registration of a warfarin-based toxicant from the Lone Star State has many Texans again questioning the viability of wild pig contraception. Given the prolific fecundity of these animals, the idea of contraception admittedly does make sense. But what does the research tell us about the feasibility of this technique? This article will highlight research that has been conducted on wildlife fertility control, and will also discuss challenges that could potentially limit the success of this alternative within free-ranging populations of wild pigs.

General Contraceptive Use in Wildlife Species

Contraception has been administered worldwide as a tool for fertility control in a variety of wildlife species including mice, rats, donkeys, wild horses, elephants, deer and others.^{3,8,12,14} Common types of contraceptives include both steroid-based and immunocontraceptives. While commonly used in humans, steroid-based contraception is widely considered as impractical for wildlife.^{1,2} Early efforts at wildlife contraception conducted in the late 1980’s encountered significant issues including prolonged estrus cycles in females, animal aggression, diminished efficacy over time, animal toxicity, passage through the food chain and others.⁷ Subsequent wildlife vaccines have since improved considerably, and today are administered to wildlife species within protected nature preserves, urban areas, and other locations where conventional control techniques are either not feasible or legal.



Wildlife contraceptives have been successfully given to species including deer, mice, elephants, donkeys and others. However, physical control of the animal and repeated dosing/boosters are required in order to be effective.

The research cited above documenting contraceptive use in wildlife species share several conditional factors in common. First, contraceptives were administered directly and through a vaccine – not remotely or through oral uptake (consumption). Second, contraceptives were generally given within controlled environments and not in free ranging habitats. Finally, vaccines were administered under the assumption that contracepted species would not be intended for human consumption. With these commonalities in mind, let's consider the feasibility and potential impacts of administering an immunocontraceptive to free-ranging exotic invasive feral swine.

Feasibility of Wild Pig Contraception

In order to administer an intramuscular (IM) contraceptive vaccine to a wild pig, one must first gain physical control of the animal. Now to many this goes without saying, but if a person goes through all the trouble of pre-baiting, patterning and trapping a wild pig why on earth would they let that animal go? No matter how effective any contraceptive is, at least one much easier and less expensive option exists that will solve the problem just the same. And therein lies a significant problem – the only feasible delivery of a contraceptive to free-ranging wild pigs would be through remote oral uptake. Put simply, this means that the pigs would need

to physically consume the “birth control” while in the wild. And if administered through consumption, a number of challenges are inherited including many of the same concerns associated with the use of toxicants.

Challenges to Fertility Control in Wild Pigs

Research showed that efficacy of various wildlife fertility control agents can vary dramatically by type as well as by wildlife species.⁵⁻⁸ Population modeling indicated that 66% of the Texas wild pig population would need to be removed annually in order to begin to reduce populations.¹³ Based on this research, we can assume that an ideal wild pig immunocontraceptive would have a minimum efficacy of at least 66%, provided it were administered to all sows within the breeding population. Treating millions of wild pigs even once would in itself be a major undertaking. However, this challenge is compounded by the fact that there are currently no wildlife immunocontraceptives that do not require multiple initial and/or subsequent periodic inoculations in order to be effective. Research conducted on long term wildlife immunocontraception has shown efficacy over several years, but in each case was obtained through an injectable vaccine that required physical control of the animal.^{5,6,14}



Wild pigs would likely need to be trapped and sedated before an IM contraceptive vaccine could be administered. (Image Credit Dr. Billy Higginbotham)

Either a single dose immunocontraceptive would need to be extensively researched and synthesized, or wild pigs would need to be dosed periodically throughout their entire

reproductive life span. Female wild pigs, or sows, are capable of reproduction as early as 6 months of age and have average lifespan of 8-12 years in the wild.⁹ Research has documented a single immunocontraceptive dose as costing as much as \$50 or more,⁴ and there are currently an estimated minimum of 2.6 million wild pigs in Texas alone. Such expense as well as the near logistical impossibility of administering over a decade of treatments to millions of animals (with a product that doesn't even exist) would represent a tremendous challenge.

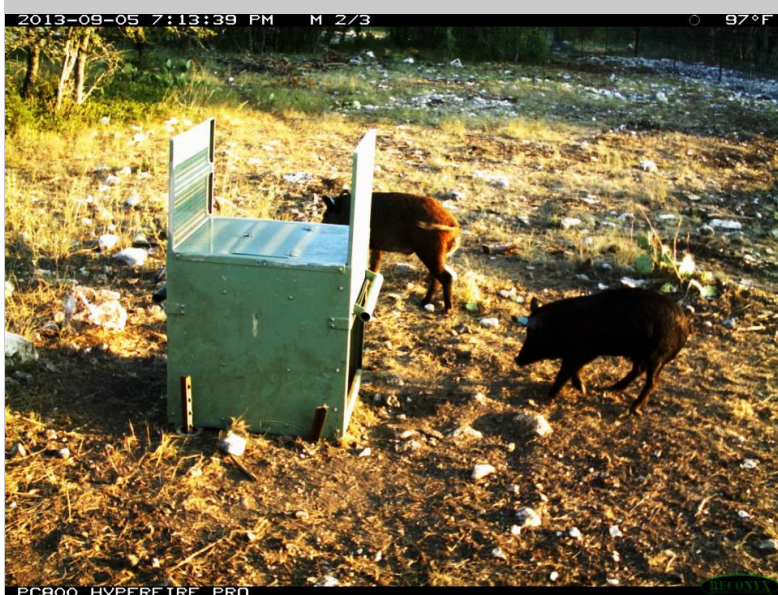
Another significant challenge to remotely administered wild pig fertility control is species specific delivery. The drug would need to be encapsulated or otherwise provided in such a way that it is not only bait stable and palatable, but also accessible to only wild pigs. Researchers have already been working for many years to develop this exact type of system in order to deliver toxicants such as sodium nitrite to wild pigs. A number of different designs for wild pig specific baiting systems have been devised that utilize animal recognition software, roter gates and various types of weighted doors. However, non-targeted species including raccoons and especially black bears have proven persistent in their ability to access baits intended only for wild pigs. Another compounding factor is that feral

swine are highly intelligent and adaptable animals,¹⁰ and are capable of exhibiting aversion to man-made contraptions including box traps, corral traps, roter gates and increasingly even helicopters.



The potential for secondary transfer to wildlife species and/or surface water systems is another challenge to wild pig contraception. (Image Credit Texas A&M AgriLife Extension Service)

Research has documented secondary transfer of wildlife contraceptives through the food chain, and wild pigs from Texas are popular table fare worldwide. Throughout the recent registration process of a warfarin-based toxicant in Texas, wildlife professionals, state officials and others observed significant political backlash from wild pig processing facilities, hunters and the general public. Unless a wild pig “birth control” were developed that was research proven to be completely incapable of secondary transfer, there would undoubtedly be considerable economic and political ramifications – not to mention a real threat to human health. Native predatory species including mountain lions, bobcats and others as well as federally protected carrion feeders such as black and turkey vultures could also potentially be impacted. Wild pigs cannot sweat and must occupy water sources in order to cool themselves, and secondary transfer could also potentially be actuated through any surface water system in which these animals routinely eliminate waste. And while bacteria such as E. coli can eventually be removed from water sources through conventional disinfection processes, many pharmaceuticals and pesticides either require special and expensive treatments or cannot be removed at all.



Species specific delivery systems such as this one are designed to allow wild pigs to access baits without allowing access to non-targeted species.

Conclusion

Wild pigs cause an estimated minimum of 1.5 billion dollars in agricultural damages in the United States each year.¹¹ They destroy habitat, negatively impact native wildlife, degrade water quality, threaten livestock production and the list goes on. These animals are classified as the most reproductively successful large mammal worldwide, so developing a means to inhibit the reproductive capacity of this species does seem like a logical strategy. However, at this time the research simply does not support this means as a feasible alternative in wild pig management. There is no wildlife inoculation currently available which would meet the criteria necessary to be effective. Additional challenges of species specific delivery, repeated dosing, cost, wild pig intelligence, secondary transfer and others further reiterate wild pig fertility control as currently being impractical. There is most likely no one “silver bullet” that will solve the wild pig problem, but the reality is that researchers are much closer to developing a viable toxicant than an immunocontraceptive. In the meantime, conventional techniques and emerging technologies such as remote/suspended trapping systems coupled with a routine aerial gunning regimen remain among the best available strategies for abating the damages associated with wild pigs.

Literature Cited

1 Barlow, N.D. 2000. The ecological challenge of immunocontraception. *Journal of Applied Ecology*. 37: 897-902.

2 Cooper, D.W. and E. Larsen. 2006. Immunocontraception of mammalian wildlife: ecological and immunogenetic issues. *Reproduction*. 132:821-828.

3 Delsinka, A. K., J. J. van Altenab, D. Groblerb, H. J. Bertschinger, J. F. Kirkpatrickd and R. Slotowa. 2007. Implementing immunocontraception in free-ranging African elephants at Makalali Conservancy. *Journal of South African Veterinary Association*. 78(1): 25–30.

4 Fagerstone, K. A., M. A. Coffey, P. D. Curtis, R. A. Dolbeer, G. J. Killian, L. A. Miller and L. M. Wilmot. 2002. Wildlife fertility control. *Wildlife Society Technical Review*. 2:2, 29 pp.

5 Fraker, M.A., R.G. Brown, G.E. Gaunt, J.A. Kerr and B. Pohajdak. 2002. Longlasting, single-dose immunocontraception in fallow deer in British Columbia. *Journal of Wildlife Management*. 66:1141–1147.

6 Gray, M.E., D.S. Thain, E.Z. Cameron and L.A. Miller. 2010. Multi-year fertility reduction in free-roaming feral horses with single-injection immunocontraceptive formulations. *Wildlife Research*. 37:475–481.

7 Kirkpatrick, J.F., R.O. Lyda and K.M. Frank. 2011. Contraceptive vaccines for wildlife: a review. *American Journal of Reproductive Immunology*. 66:40–50.

8 Locke, S.L., M.W. Cook, L.A. Harveson, D.S. Davis, R.R. Lopez, N.J. Silvy and M.A. Fraker. 2007. Effectiveness of Spayvac for reducing white-tailed deer fertility. *Journal of Wildlife Diseases*. 43 (4):726-30.

9 Mapston, M. E. 2004. Feral hogs in Texas. Texas Cooperative Extension Service and USDA-APHIS Wildlife Services. 26 pages.

10 Mungall, E.C. and W.J. Sheffield. 1994. Exotics on the range: the Texas example, part II. *The New Animals*. Texas A&M University Press, College Station. 67–73.

11 Pimental, D. 2007. Environmental and economic costs of vertebrate species invasions into the United States. *Managing Vertebrate Invasive Species*. Paper 38.

12 Shahiwala, A. and A. Misra. 2006. Preliminary investigation of the nasal delivery of liposomal leuporelin acetate for contraception in rats. *Journal of Pharmacy and Pharmacology*. 58:19–26.

13 Timmons, J. B., B. Higginbotham, R. Lopez, J. C. Cathey, J. Mellish, J. Griffin, A. Sumrall and K. Skow. 2012. Feral hog population growth, density and harvest in Texas. Texas A&M Agrilife Extension Service SP-472.

14 Walden, C.M., T.D. Butters, R.A. Dwek, F.M. Platt and A.C. van der Spoel. 2006. Long-term non-hormonal male contraception in mice using N-butyldeoxynojirimycin. *Human Reproduction*. 21(5): 1309-1315.

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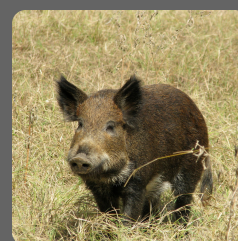


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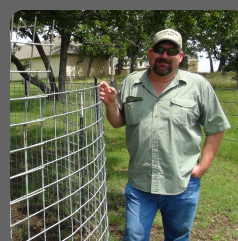
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Part I - Urban Wild Pigs: Impacts and Concerns

learn how urban/suburban wild pigs impact urban areas and challenge landowners
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How to Snare Wild Pigs

Texas Wildlife Services and AgriLife Extension team up to show you how to effectively snare wild pigs (click to view)

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