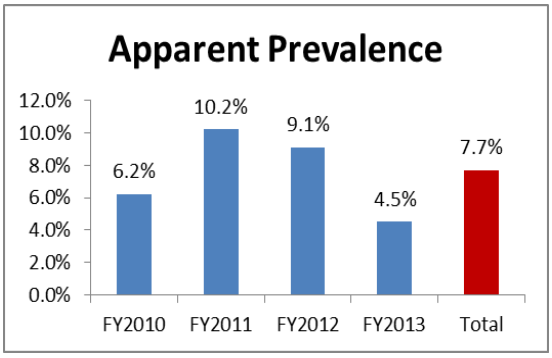
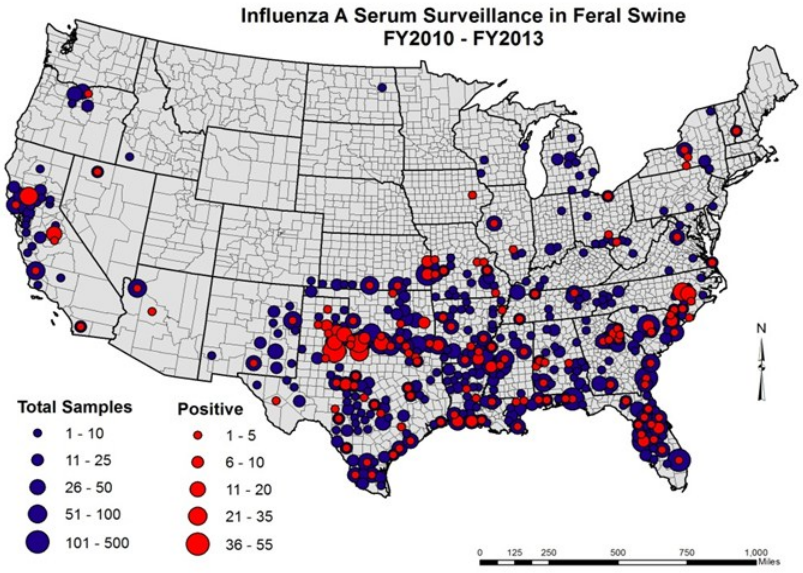
Program Activity Report (PAR)

Feral Swine Exposure to Influenza A Viruses

Influenza viruses in swine can cause serious disease and they have the ability to impact the commercial swine industry via loss of consumer confidence in pork safety, as well as through disease prevention costs and production losses. These viruses also have the ability to infect people and novel influenza A viruses that move into human populations may potentially become pandemic. We saw this in 2009 with pH1N1. Swine have cellular receptors that are found in both birds and humans and because of this they can become infected with subtypes of influenza A viruses associated with both species. These opportunities for co-infection can lead to an increased chance of genetic reassortment, changes in virulence, and novel subtypes.





To help increase our understanding of the ecology of influenza A in feral swine, the NWDP has been investigating exposure by analyzing feral swine serum samples. Results are now available for over 8300 serum samples that have been tested using the IDEXX Multi-species ELISA kit. One of the goals of this surveillance program is to identify and map the distribution of antibody positive samples in feral swine populations. In four years of surveillance, 35 states have provided samples and 26 states have had feral swine samples test positive for influenza A antibodies. The map shows the total number of samples tested for each sampled county, along with the number of positive samples. Results indicate that apparent prevalence fluctuates over time, even though the number of samples tested each year has remained relatively constant.

Further analyses are being conducted to determine if influenza hot spots can be identified. Future influenza testing of archived serum samples is also planned to broaden the scope of the project. Overall, this surveillance effort is providing new insights on a pathogen that is important to both livestock and human health. For more information, please contact Mark Lutman, Mark.W.Lutman@aphis.usda.gov

The original artwork on this page was created by the National Wildlife Disease Program's Erika Kampe and Sarah Goff