

PROGRAM ACTIVITY REPORT (PAR)

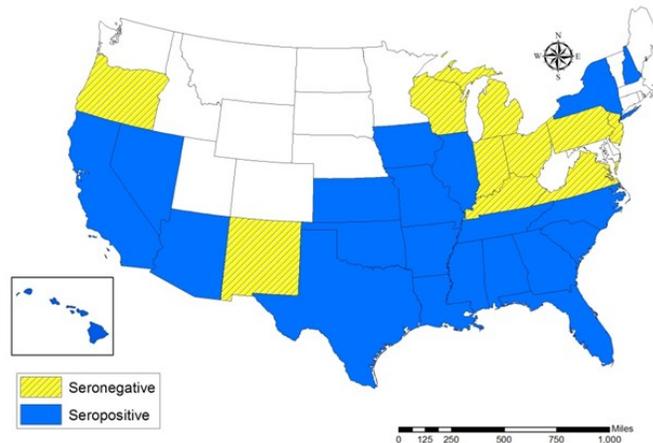


SIV IN FERAL SWINE

The NWDP is in its second year conducting swine influenza virus (SIV) surveillance. Since the emergence of the pandemic SIV (pH1N1) in March of 2009, this virus has received increasing attention from countries around the world. By August 2010, over 200 countries reported having many cases of the disease resulting in thousands of deaths. The first documented case of pH1N1 SIV in domestic swine was reported in May of 2009 from a Canadian farm. Because all swine are considered mixing vessels for type A influenzas, genetic reassortment of this virus into a more virulent strain is of great concern. Feral swine pose a risk of becoming a reservoir for type A influenzas and have the potential to reintroduce these zoonotic diseases into human, livestock, and wildlife populations.

Wildlife Services initiated a feral swine SIV surveillance program during November, 2010. Nasal swabs and serum samples are being collected to identify and map the distribution of type A SIV's in feral swine populations. Almost 1900 nasal swabs were

collected during the first year of surveillance resulting in 13 matrix positive samples by PCR analysis. Of the



13 matrix positive, two samples from Texas were confirmed pH1N1 positive by gene sequencing. These samples were the first confirmed pH1N1 samples from a feral swine population.

Serum samples are also collected to identify the geographic distribution and apparent prevalence of Type A SIV's in feral swine. Over 2500 serum samples were collected and tested using IDEXX blocking enzyme-linked immunosorbent assay (b-ELISA) test. This blocking ELISA

has excellent sensitivity to anti-influenza A antibodies, and able to detect these antibodies several months after a feral swine was exposed to influenza virus. Approximately 10% of the feral swine tested were seropositive by the IDEXX b-ELISA kit. Additional confirmatory testing using a hemagglutination inhibition test will be conducted to identify if any of the 6 known commercial strains of influenza are circulating in feral swine populations.

Future diagnostic testing of feral swine serum may include a Bioplex machine that utilizes multiplexing suspension array technology. A Bioplex can utilize a small amount of serum and test feral swine for several diseases (over 20) in a single assay. A Bioplex could ultimately reduce costs by eliminating the need to purchase separate ELISAs and this approach could also enable faster results.

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

