

## PROGRAM ACTIVITY REPORT (PAR)



## NWDP Disease Sample Archives

The NWDP currently maintains 3 archives to store biological samples collected for disease surveillance. The largest collection consists of over 280,000 swab samples collected from birds during the Interagency H5N1 Avian Influenza Early Detection survey conducted from 2006 to 2011. The feral swine serum collection consists of serum samples from approximately 16,000 animals obtained since 2006. Whenever possible, 8 or more vials of serum are collected from each feral swine to facilitate concurrent diagnostic testing for a variety of diseases, and to retain one or more vials in the archive. Both feral swine serum samples

and avian swab samples are accessioned into the archive and stored in ultracold freezers at  $-80^{\circ}\text{C}$ . The third archive consists of Nobuto strips collected for plague and tularemia surveillance. Nobuto strips are small strips of absorbent filter paper that absorb a uniform amount of blood. The strips are air-dried in the field. Once dried the sample is relatively stable and can be kept at ambient temperatures for long periods with minimal degradation of sample quality.



For archiving purposes, each strip is placed in a small paper envelope assigned a unique barcode. The strips are stored at  $-20^{\circ}\text{C}$  to further extend the storage period. Nobuto strips have been collected since 2006, and almost 19,000 have been accessioned.

The focus of the Nobuto sample collection is to monitor a variety of animals for plague and tularemia exposure across the United States. Currently, the archive holds samples from 72 species of mammals and birds. The majority of samples are from mesocarnivores (small to medium size mammalian carnivores) and rodents. Many of the samples have been screened by the CDC for antibodies to

plague and tularemia.

Several research projects are currently using Nobuto strips from the archive. These include coyote samples supplied to researchers at the USGS National Wildlife Health Center in Madison, Wisconsin to validate the performance of a lateral flow reader developed for rapid detection of plague exposure in prairie dogs. The Veterinary Pathobiology Department at Texas A & M University is using Nobuto strips collected from mink, raccoons, and other animals associated with aquatic habitats to identify a mammalian reservoir of avian bornavirus, which they have found to be common and widespread in waterfowl in the United States. Additionally, Nobuto strips from the archive are being used by scientists examining the genetic variation of coyotes in the Eastern United States which are thought to have hybridized with other Canids as they expanded their range eastward over the past 90 years.

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