

PROGRAM ACTIVITY REPORT (PAR)



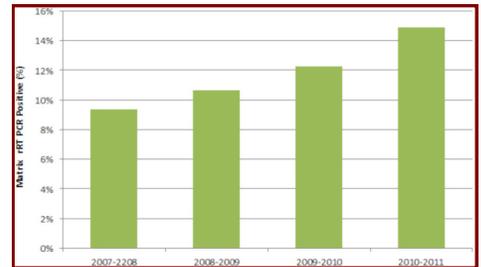
Large-Scale Avian Influenza Surveillance in Wild Birds

In 2006, the U.S. Departments of Agriculture and Interior, along with multiple state and tribal agencies, implemented a nationally coordinated, avian influenza surveillance effort in wild birds. This strategy was based on the premise that while the greatest risk of highly pathogenic avian influenza introduction was from the illegal importation of poultry or poultry products, as well as through the illegal trade of wild and exotic birds, highly pathogenic avian influenza could also be introduced through wild bird migration. An ancillary benefit of this large-scale surveillance system was an unprecedented amount of data on all avian influenza viruses in wild birds.

While no highly pathogenic viruses were detected, this unique dataset revealed regions with high numbers of other influenza positive wild birds. Clusters of positive birds were concentrated in the northern latitudes of

the U.S. and in wetland areas or specific water bodies that offer migrating waterfowl stopover points on the landscape. The only clusters located entirely below the 40° parallel were along a riparian area of the Rio Grande River in New Mexico, and another along the Mississippi River in Arkansas and Mississippi.

The geographic and temporal scope of this effort provided an opportunity to document an increasing trend in avian influenza prevalence at biologically relevant regional and continental scales. It also provides evidence that this trend did not result from differences in population size, sample size, sampling efficiency, or diagnostic testing efficiency. While the actual mechanism and implication for the observed trend is unknown, it may represent part of a multi-year cycle of avian influenza viruses in their natural reservoirs.



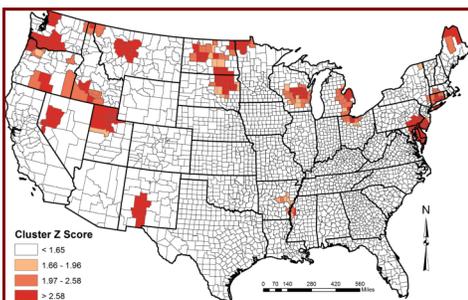
ranges over relatively short periods of time are critical for understanding host–virus relationships; however, extrapolating this knowledge to metapopulations and metacommunities of wild birds at regional and continental scales can be problematic. Large-scale surveillance programs such as this one are important for providing ecological data on infections at politically and biologically relevant scales, which can be used to establish infection status in target populations. These programs also allow for modeling disease spread and more precise risk analyses.

For additional information please see:

[Bevins, et al. 2014. Large-scale Avian Influenza surveillance in wild birds throughout the United States. PLoSOne 9\(8\): e104360. doi: 10.1371/journal.pone.0104360.](#)

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Prior to 2005 much of our knowledge of influenza in wild birds came from research studies designed to examine the ecology of viruses at specific locations, times, and in a limited number of species. Such small-scale studies performed in focused geographic

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