Prevalence of West Nile virus in migratory birds during spring and fall migration 2001-2003

Case study:

This study investigated the role of migratory birds in spreading West Nile Virus (WNV) in North America. Blood samples were collected from over 13,000 birds during spring and fall migrations from 2001 to 2003. The presence of WNV and WNV-specific neutralizing antibodies in a variety of bird species and determine the specific bird species involved in WNV transmission. Identify the migratory season when WNV transmission is most likely.

KPI :

Bird Population and Sampling

- Birds family, species, and count of samples: This KPI provides a baseline understanding of the bird diversity and abundance in your study area. It is essential for understanding the overall health of the bird population.
- Birds family, species, and count of positive viral samples: This KPI indicates the prevalence of different viruses among different bird species. It can help identify which species are most susceptible to certain viruses.
- Birds family, species, and count of positive antibodies samples: This KPI indicates the prevalence of antibodies against different viruses among different bird species. It can help identify which species have been exposed to or infected with certain viruses.

Geographic Distribution

- Flyway, state, sample site, and count of positive viral samples: This KPI helps understand the geographic distribution of viral infections among birds. It can help identify areas with high or low prevalence of certain viruses.
- Flyway, state, sample site, and count of positive antibodies samples: This KPI helps understand the geographic distribution of antibody prevalence among birds. It can help identify areas with high or low exposure to certain viruses.

Temporal Trends

- Positive viral samples over time and season: This KPI helps understand the temporal trends of viral infections among birds. It can help identify seasonal patterns or outbreaks of certain viruses.
- Positive antibodies samples over time and season: This KPI helps understand the temporal trends of antibody prevalence among birds. It can help identify seasonal patterns of exposure to certain viruses.

Disease Severity

- Plaque reduction neutralizing antibody titer and count samples positive: This KPI is a measure of the level of antibodies that can neutralize a virus. It can help understand the severity of viral infections and the effectiveness of the immune response.

Demographic Factors

- Positive viral samples by sex and age category: This KPI helps understand how viral infections vary by sex and age. It can help identify vulnerable groups of birds.

Data headers:

Lab_ID	**Sample laboratory identification number**	
BANDNUMB	**Band number**	**Blank=no band number available.**
Family	**Bird family**	**Full names provided, no coding.**
AOU	**AOU species code**	**THE BIRD BANDING LABS SPECIES CODE https://www.pwrc.usgs.gov/BBl/manual/speclist.cfm**
Com_Name	**Bird species common name**	**Full names provided, no coding.**
YR	**Year**	
Season	**Season**	
MO	**Month**	
DAY	**Day**	
ASEX	**Sex**	**M=male, F=female, U=unknown YES**
AAGE	**Age category**	**AHY= After hatch year. ASY= After second year, ATY= After third year, HY= hatch year, SY= second year, TY= third year, U=Unknown**
SITE_MST	**Sampling site**	**GMNWR - Great Meadows National Wildlife Refuge(NWR), Massachusetts; WNWR – Wertheim NWR, New York (NY); GNRA – Gateway National Recreation Area, NY; CMNWR – Cape May NWR, New Jersey; CNWR – Chincoteague NWR, Virginia; CNF - Croatan National Forest, North Carolina (NC)**
LAT_DEG	**Sampling site latitude (degrees)**	
LAT_MIN	**Sampling site latitude (minutes)**	
LONG_DEG	**Sampling site longitude (degrees)**	

LONG_MIN	**Sampling site longitude (minutes)**	
ST	**State**	**Standard US state abbreviations 10/1963**
FLYWAY	**Flyway**	**A=Atlantic; M=Mississippi**
Cult_Res	**Viral culture result**	
Vir_Res	**Virus identity by sequencing**	**EEE,Flanders,Highlands J, WNv,Unidentified**
ELISA_Re	**Flavivirus antibody detection by ELISA**	
PRNT_Res	**Detection of neutralizing antibodies by plaque reduction**	**SLE=St Louis encephalitis, WNV=West Nile virus, NEG=negative PRNT was only run on samples that were ELISA positive; this column only contains a value if ELISA_Re is POS; samples not tested by PRNT are blank.**
PRNT_Ttr	**Plaque reduction neutralizing antibody titer**	**PRNT was only run on samples that were ELISA positive; this column only contains a value if ELISA_Re is POS; samples not tested by PRNT are blank. End point dilutions were determined.**

Data link:

https://www.sciencebase.gov/catalog/item/5633bf0de4b048076347f025