Washington State Department of Health

ZOONOTIC AND VECTOR-BORNE DISEASE UPDATES FROM WASHINGTON

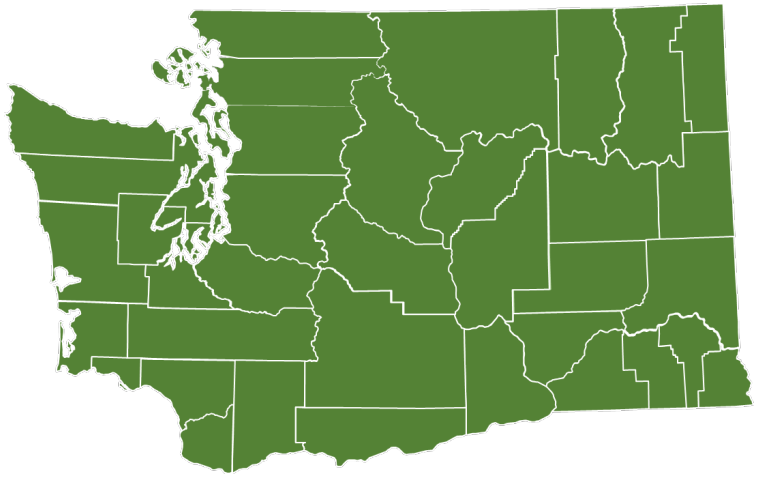
Hanna Oltean, WA DOH

Overview

- Vector-borne disease updates
  - WNV
  - Anaplasmosis
- Zoonotic disease updates
  - HPAI
- One Health updates
  - One Health needs assessment

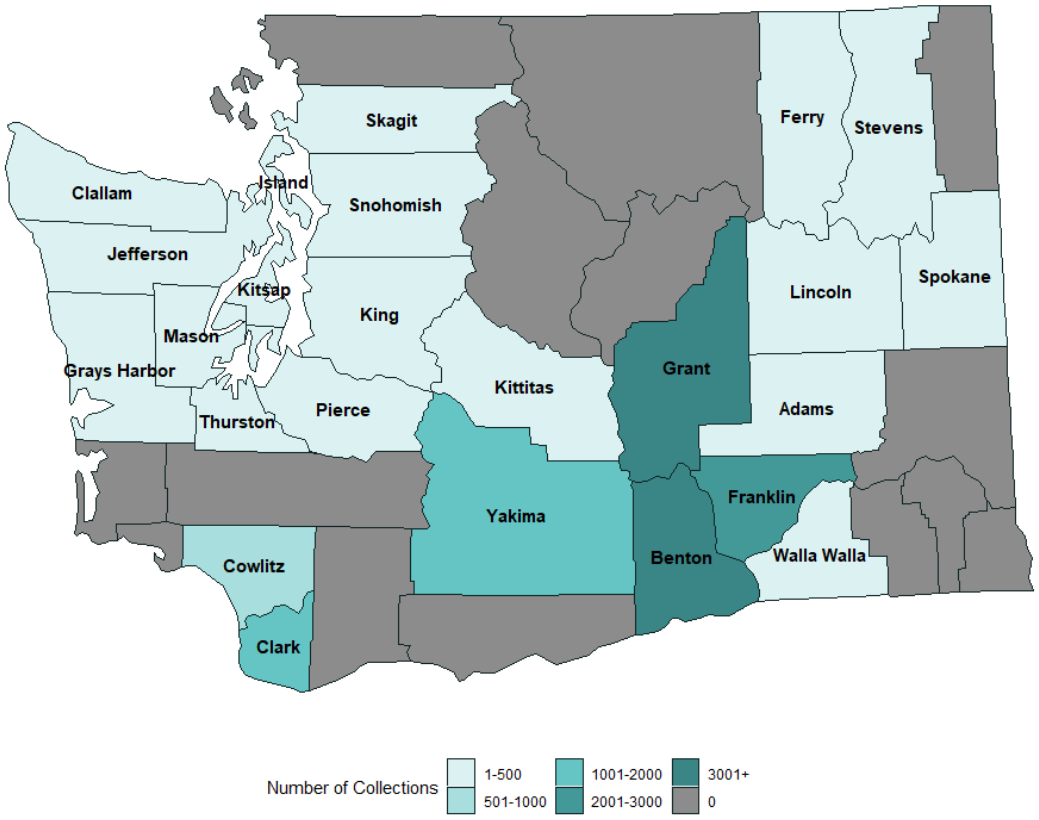
WNV Surveillance in Washington

- WNV reportable to local health jurisdictions from laboratories, providers, hospitals
  - Includes lab results from healthy blood donors
  - Local health jurisdictions report to WA State Dept. of Health (DOH)
- Horse or bird cases reportable to WA State Dept. of Agriculture
- Mosquito trapping and testing
  - Mosquito control districts
  - Military partners
  - Academic partners
  - Local Health Jurisdictions
  - WA State Dept. of Health



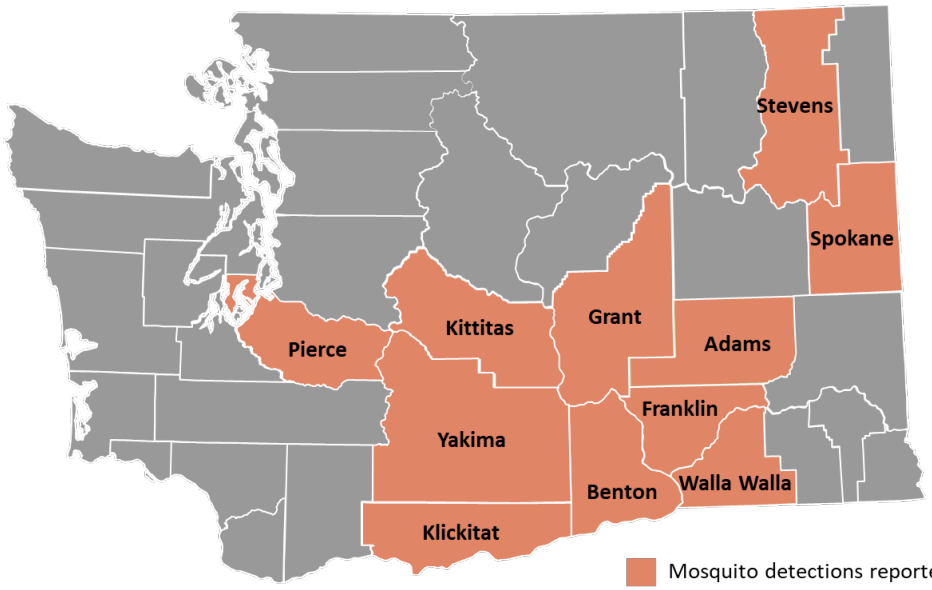
WNV Surveillance

Distribution of Mosquito Trapping Events by County, Washington, 2016-2020

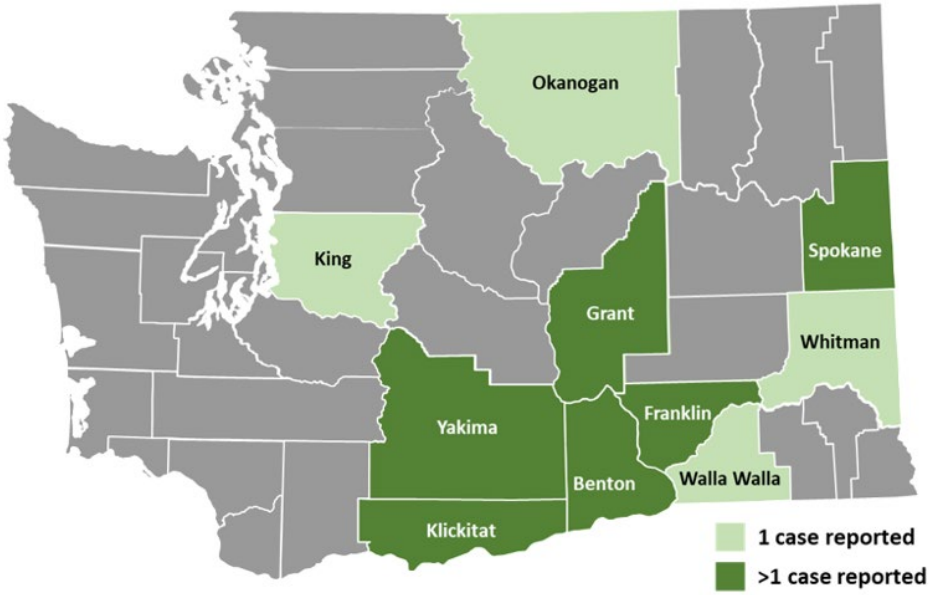


WNV Surveillance

WNV Detections in Mosquitoes, 2002-2021

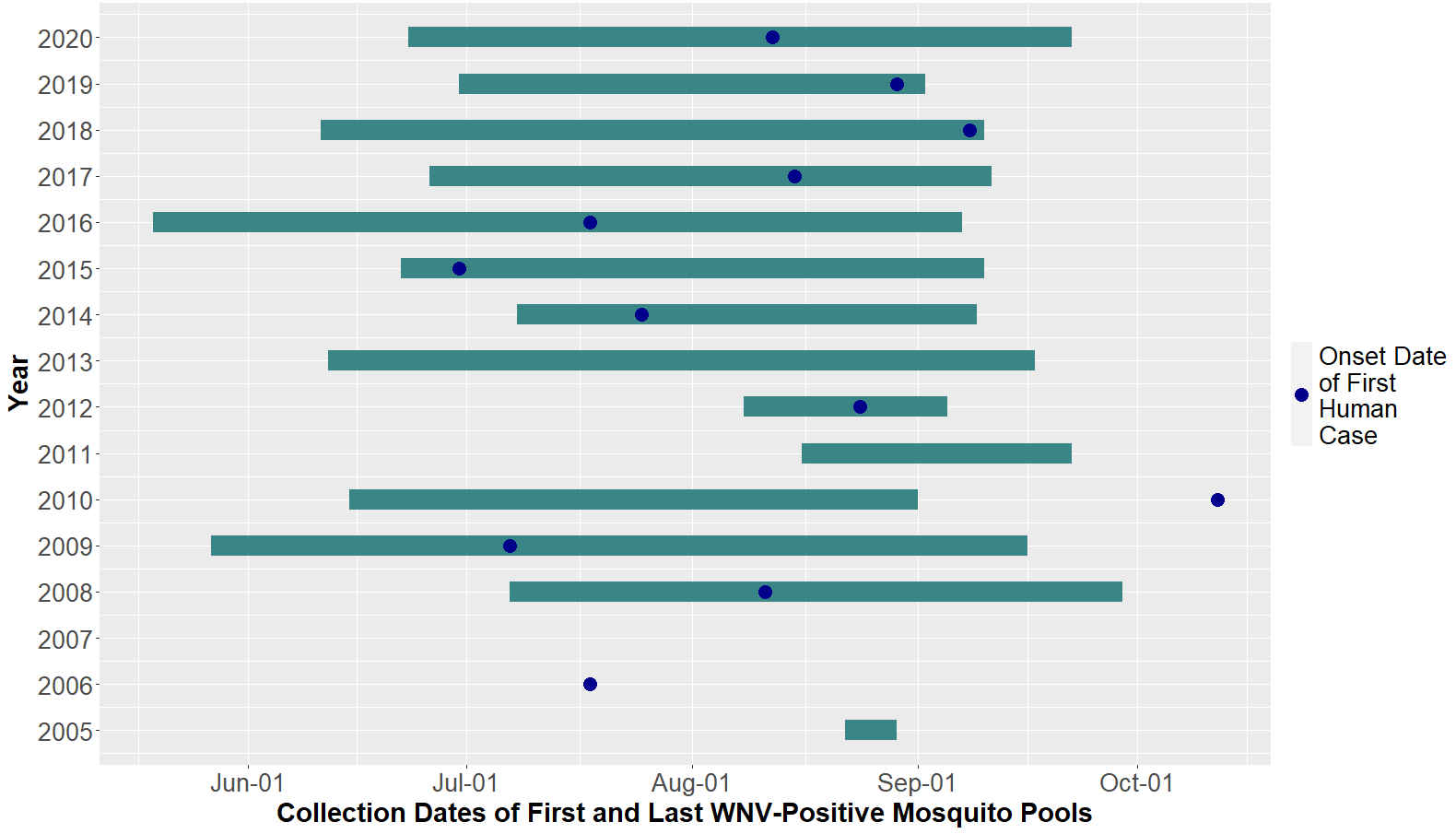


Counties Where Humans Acquired WNV, 2005-2021



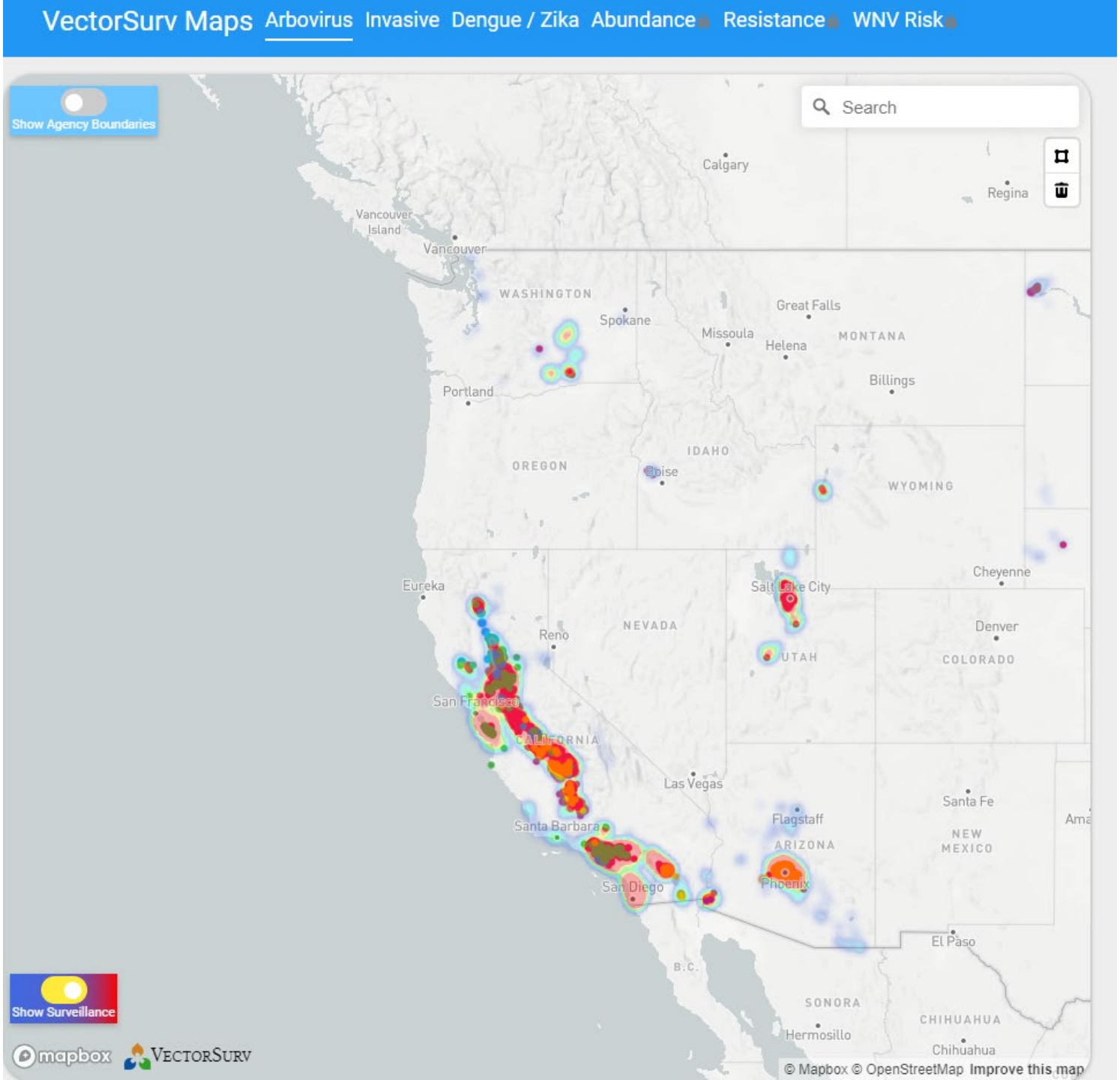
* Excludes cases with multiple county exposures

Timing of WNV detections in mosquitoes and first human case, 2005-2020



WNV Surveillance Updates

- Increasing surveillance at the county-level
  - Expand coverage in areas where human cases are likely
  - Yearly mini-grants to LHJs for surveillance
- Incorporating genomic surveillance
- Implementing WASurv tool (VectorSurv)
  - Database system allowing mapping and vector-specific tools
  - https://maps.vectorsurv.org/arbo


VectorSurv Maps
Arbovirus
Invasive
Dengue / Zika
Abundance
Resistance
WNV Risk
Show Agency Boundaries
Search
Calgary
Regina
Vancouver Island
Vancouver
WASHINGTON
Spokane
Great Falls
Missoula
Helena
MONTANA
Billings
Portland
IDAHO
OREGON
Boise
WYOMING
Cheyenne
Eureka
Salt Lake City
NEVADA
Reno
Denver
UTAH
COLORADO
San Francisco
CALIFORNIA
Las Vegas
Santa Fe
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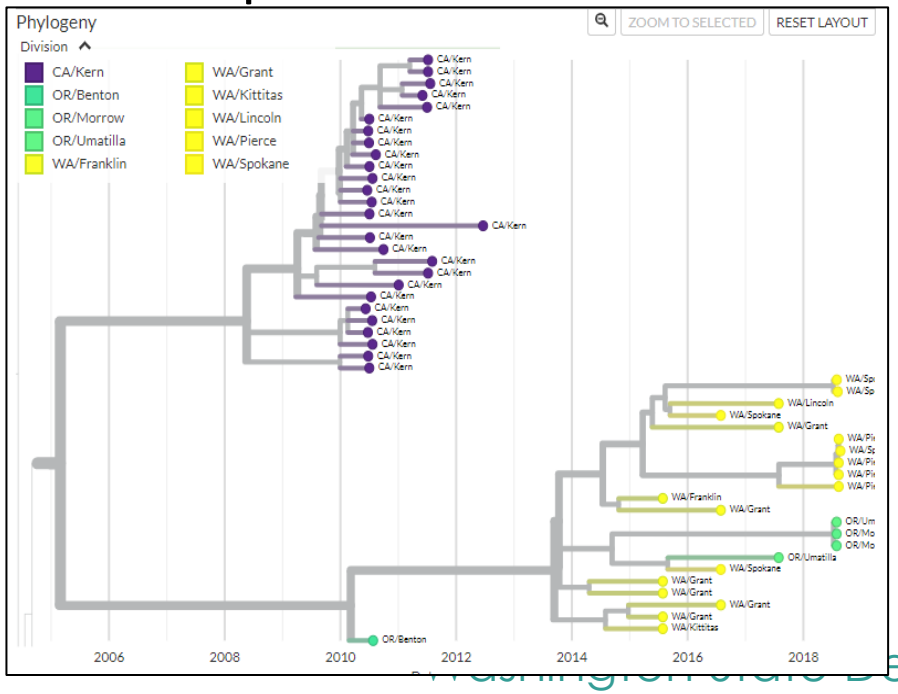
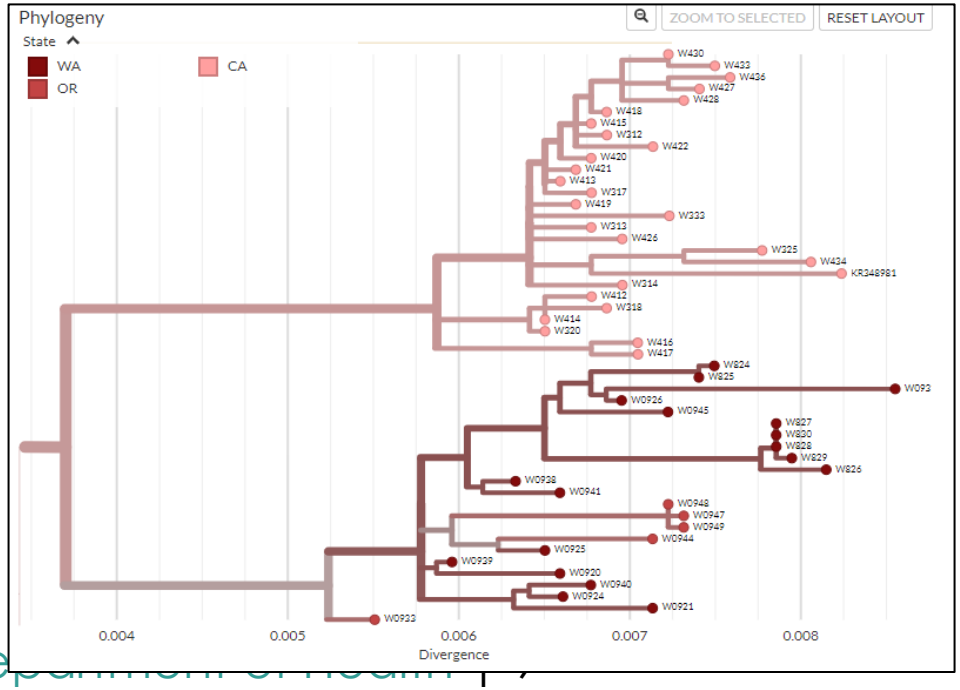
WNV Genomic Surveillance

- Partnership with WestNile 4k project & Andersen Lab at Scripps: https://westnile4k.org/
- 20 sequences from WA to-date
- WA specimens have common descendants with specimens from OR and California





WNV Genomic Surveillance

- What can we understand about importation/transmission of WNV in WA?
- Do findings from WGS/phylogenetic analysis impact mosquito control efforts?
  - Identification of endemic transmission networks
- Surveil for changing lineages/situational awareness
- Coordinate with regional partners to expand WGS efforts

Tickborne Disease Updates: Anaplasmosis

- *Anaplasma phagocytophilum* historically detected in WA ticks
  - But is it human variant?

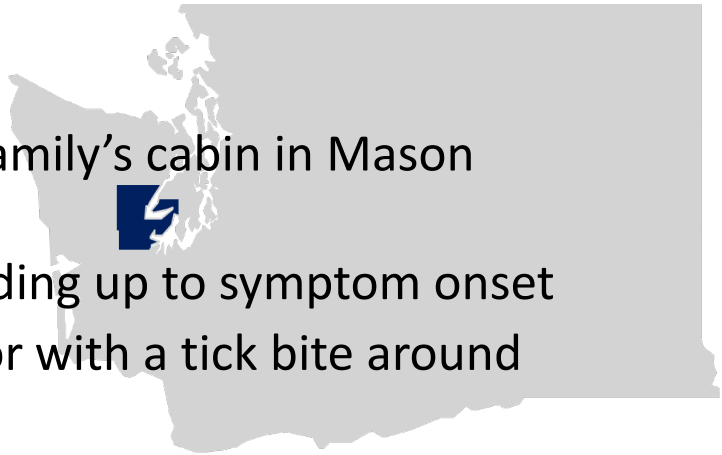
A. phagocytophilum detections in field-collected _I. pacificus_ ticks, 2011-2019

Tickborne Disease Updates: Anaplasmosis

- 2021 – CDC conducted genotyping on submitted specimens
  - 16s rRNA
- 11/27 identified as *A. phagocytophilum E. equi*/CA Human Variant
  - Genotype originally recovered from a human in CA
- 16/27 variant identity could not be determined
  - Likely due to low DNA (high Ct)

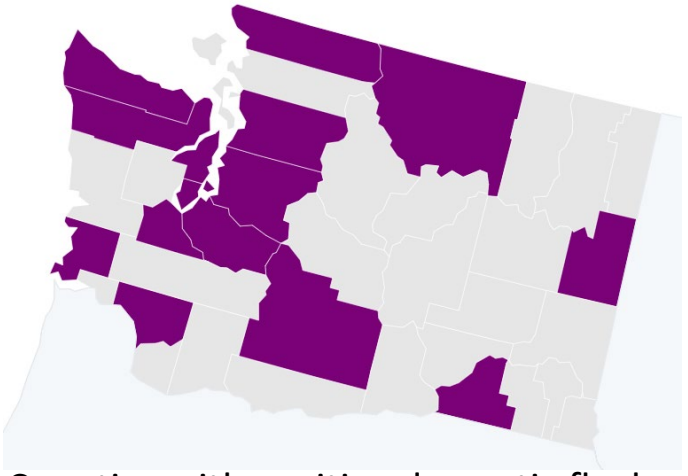
Tickborne Disease Updates: Anaplasmosis

- July 2022 – first human case of anaplasmosis with local exposure reported in WA
- Male in his 80's
  - Reported working in the brush around family's cabin in Mason County during exposure period
  - No travel out of state in the 4 weeks leading up to symptom onset
  - No known tick bite, did report a neighbor with a tick bite around the same time
  - Hospitalized with severe disease, but recovered & discharged
- PCR positive on whole blood
- CDC Genotyping = *A. phagocytophilum* / California Human variant
- Environmental surveillance pending to coincide with *I. pacificus* activity



WA HPAI Update

- Total number of positive backyard flocks in WA: **35**
  - Total number of affected domestic birds: **2,312**
- Total detections (events) in wildlife in WA: **59**
  - Positive wild mammals have included 3 raccoons

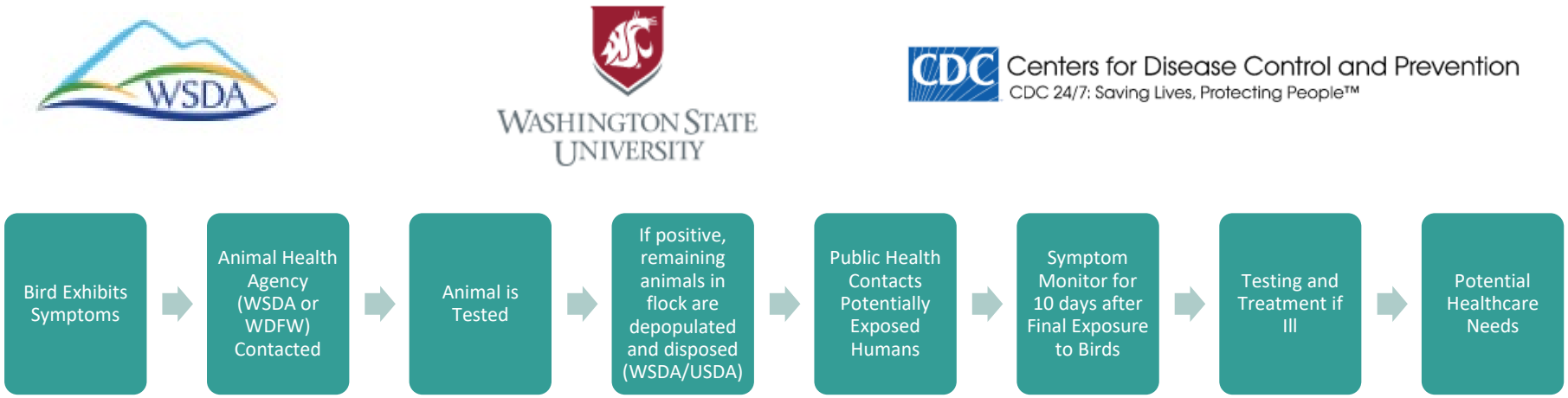


Counties with positive domestic flocks

- Total number of people exposed and monitored by public health: **153**
- Total number of people tested for avian influenza: **11**
  - **All tested individuals have been negative for H5N1 avian influenza**
  - **One person positive for seasonal human influenza**

Counties with positive wildlife

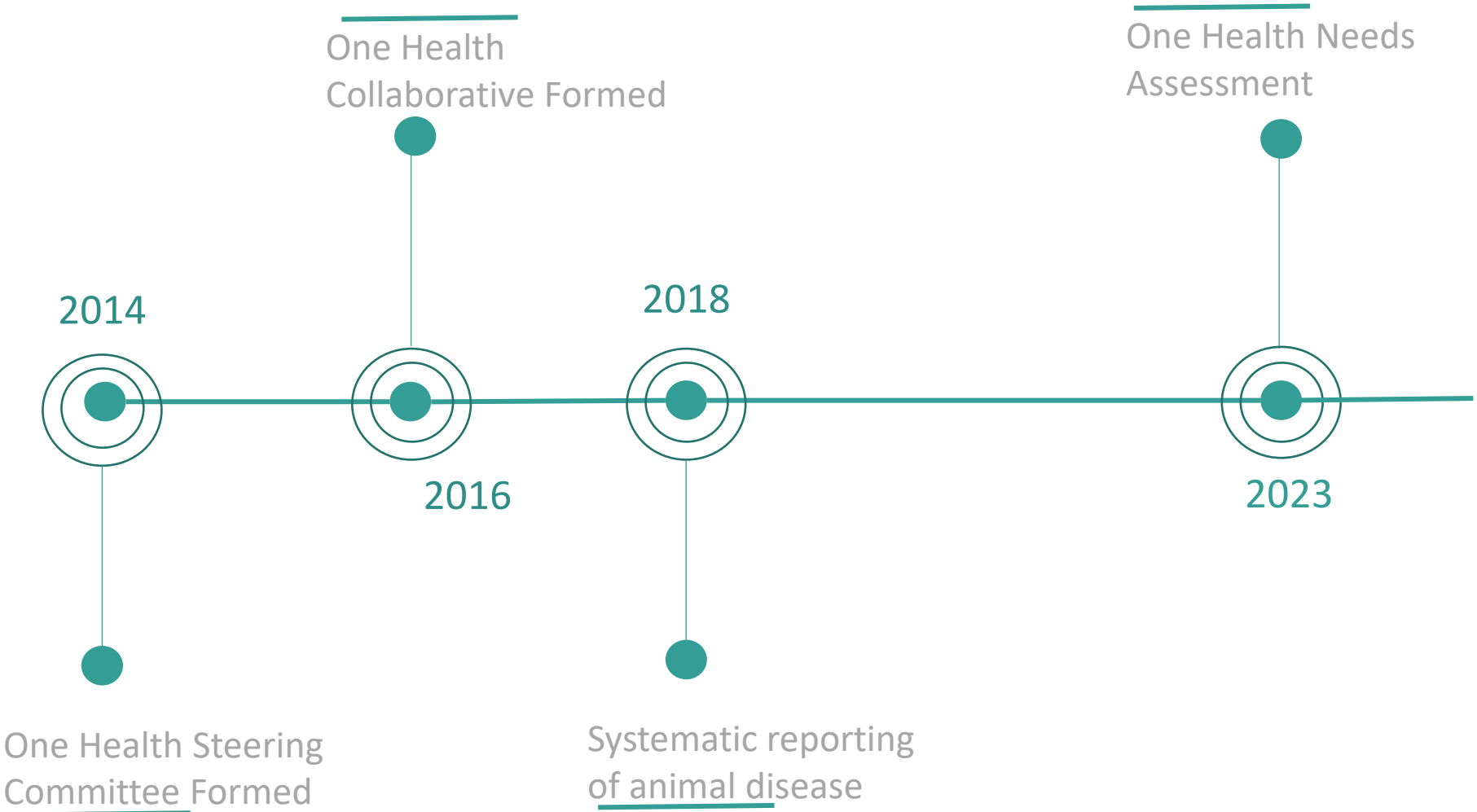
HPAI Multi-Agency Response



2022 Response Challenges

- Limited public health capacity
- PPE recommendations and availability for backyard flock owners
- Large impact on wild birds
  - Messaging around avoiding contact with sick and ill wildlife, particularly around chick season
  - Carcass disposal and environmental exposure risk for wild bird mortality events in publicly accessible areas

One Health Updates



One Health Needs Assessment

- Outcome: Prepare a report outlining present and desired state for One Health activities
  - Engagement with partners for prioritization
  - Outline goals/approached to inform future resource requests, workgroups, etc.
- Work to-date:
  - Formed planning/advisory committee
  - Determining scope
  - Developing list of partners for engagement
  - Planning workshop for March 2023

Acknowledgements

WA DOH:

-Mary Chan

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-Alyssa Aguilar

LHJs & MCDs performing mosquito sampling

WA PHL

Questions?

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