



United States Department of Agriculture



## ORBIVIRUS ACTIVITIES AT NVSL

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OCTOBER 19, 2016



# Topics

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- 2015 Calendar Year
- 2016 Year-to-date
- Bluetongue
- Epizootic Hemorrhagic Disease
- Testing at NVSL

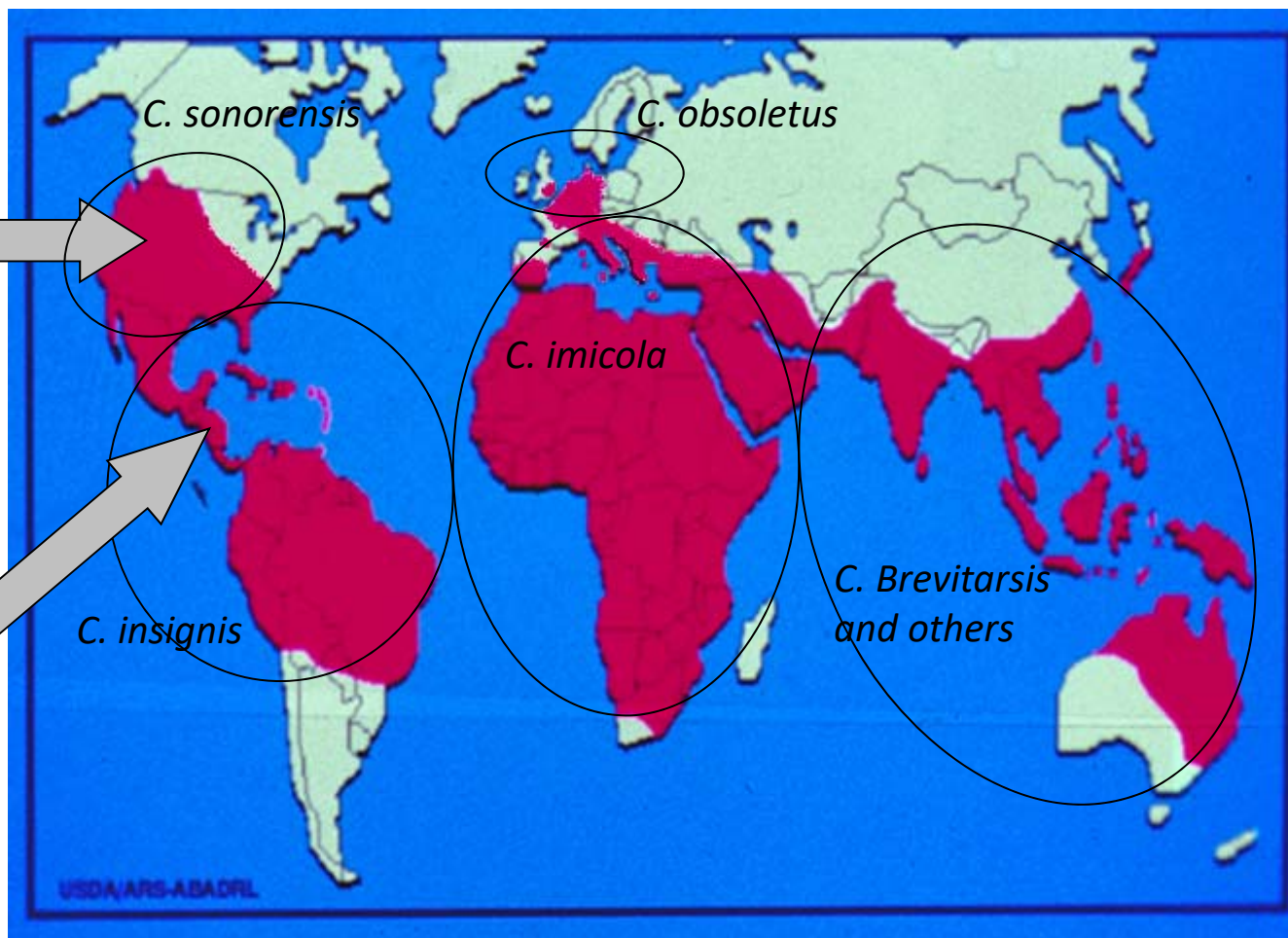


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# Distribution of BTV and Vectors

U.S. BTV: 1-3, 5, 6, 9-14, 17-19, 22, 24

BTV: 1-6, 8, 10-14, 17-19, 22, 24





# BTV Identifications 2015

*(NVSL, except where noted)*

BTV-10		
State	No.	Species
AZ	1	bighorn sheep
CA	7*	sheep, deer
FL	1	WTD

*\*BTV identified in 5 cases by UC Davis, typing NVSL*

BTV-11		
State	No.	Species
CA	2*	sheep

*\*BTV identified by UC Davis, typing NVSL*

BTV-13		
State	No.	Species
OK	1	sheep
OR	1	sheep
NV*	1	cattle

*\*BTV identified by WADDL, typing NVSL*

BTV-17		
State	No.	Species
CA	7	sheep/ *mule deer/ †*antelope
ID*	8	cattle, WTD, sheep, yak
NV*	3	bighorn sheep
WA*	9	WTD, mule deer

*BTV identified by \*WADDL, †UC Davis, typing NVSL*



# BTV Identifications 2015

*(NVSL, except where noted)*

<b>BTV not typed</b>		
<b>State</b>	<b>No.</b>	<b>Species</b>
<b>ID*</b>	<b>21</b>	<b>deer, sheep, cattle, bighorn</b>
<b>NV*</b>	<b>1</b>	<b>cattle</b>
<b>OR*</b>	<b>2</b>	<b>Sheep, goat</b>
<b>TX*</b>	<b>3</b>	<b>WTD</b>
<b>WA*</b>	<b>28</b>	<b>WTD, mule deer, elk, bighorn, sheep, camel</b>

*\*BTV identified by WADDL, reported to NVSL*

*Additional BTV activity has been reported in TX, but information regarding numbers and types is not available.*



# BTV Identifications 2015

*(NVSL, except where noted)*

BTV-3		
State	No.	Species
TX	1*	Cattle
TX	1*	White-tailed deer

*\*BTV identified at TVMDL, typing NVSL  
First report of BTV-3 in TX*

BTV-6		
State	No.	Species
FL	1*	White-tailed Deer

*\*Also positive EHDV-6; BTV-6 previously identified in FL in 2006*

BTV-19		
State	No.	Species
FL	1	White-tailed Deer

*BTV-19 previously identified in FL in 2003*

BTV-22		
State	No.	Species
FL	1*	White-tailed Deer

*\*BTV identified at TVMDL, typing NVSL;  
BTV-22 previously identified in FL in 2002 & 2005*

BTV-24		
State	No.	Species
FL	1	White-tailed Deer

*BTV-24 previously identified in FL in 2007*



# BTV Identifications 2016

*(NVSL, except where noted)*

BTV-17		
<i>State</i>	<i>No.</i>	<i>Species</i>
OK	1*	cattle
CA	1	sheep

*\*Collected January 2016,  
likely infected fall 2015*

***Detection of Endemic Strains vary from year to year***



# BTV Identifications 2016

*(NVSL, except where noted)*

BTV-1		
State	No.	Species
FL	3*	Sheep
CA	1**	sheep

BTV-3		
State	No.	Species
FL	1*	Sheep
VA	1**	deer

BTV-22		
State	No.	Species
FL	1*	sheep

BTV-not typed		
State	No.	Species
CA	1	alpaca

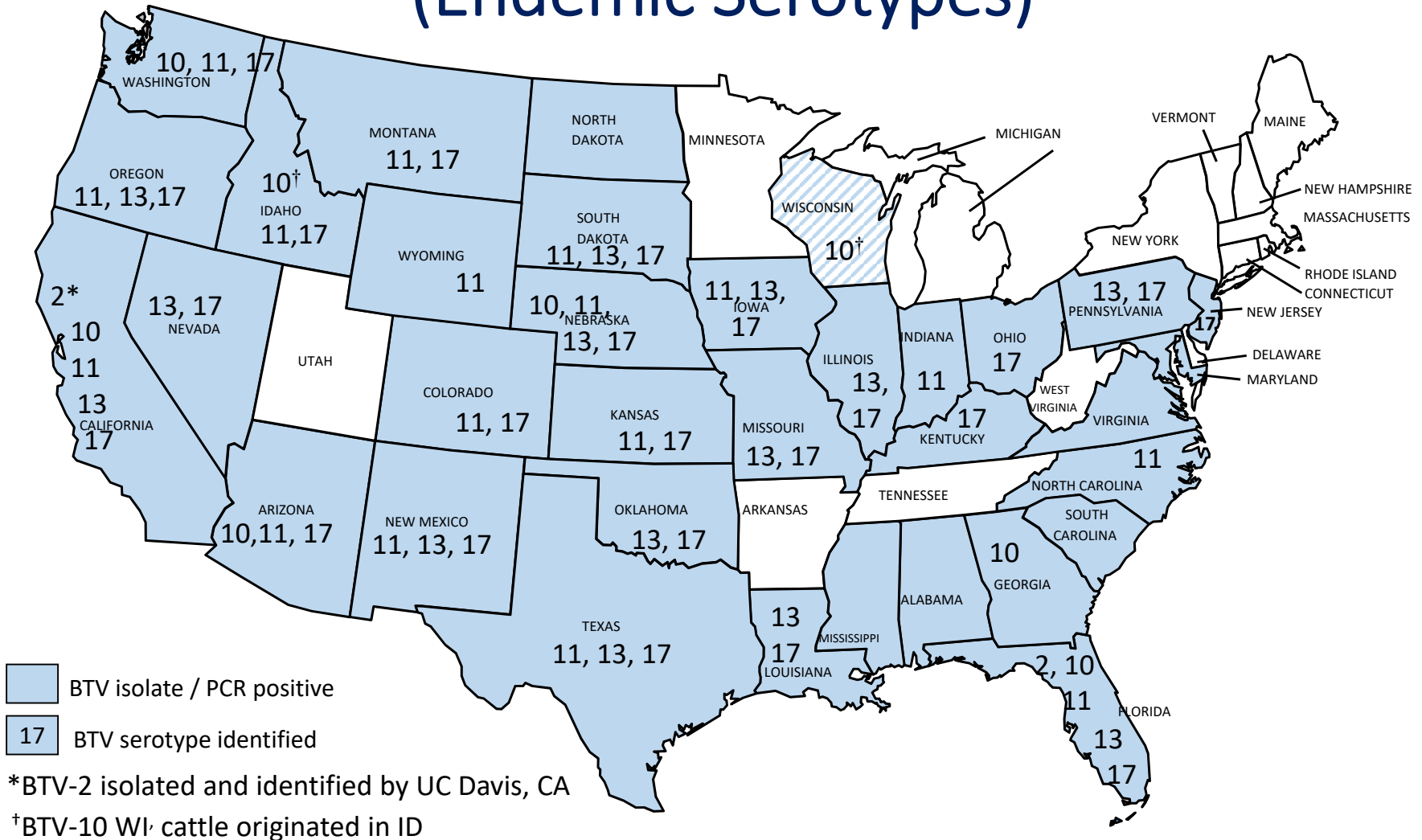
*\*Collected January 2016,  
likely infected fall 2015*

*\*\*First report of BTV-1 in CA  
and BTV-3 in VA*



# 1992-2016

## NVSL Bluetongue Virus Identification (Endemic Serotypes)

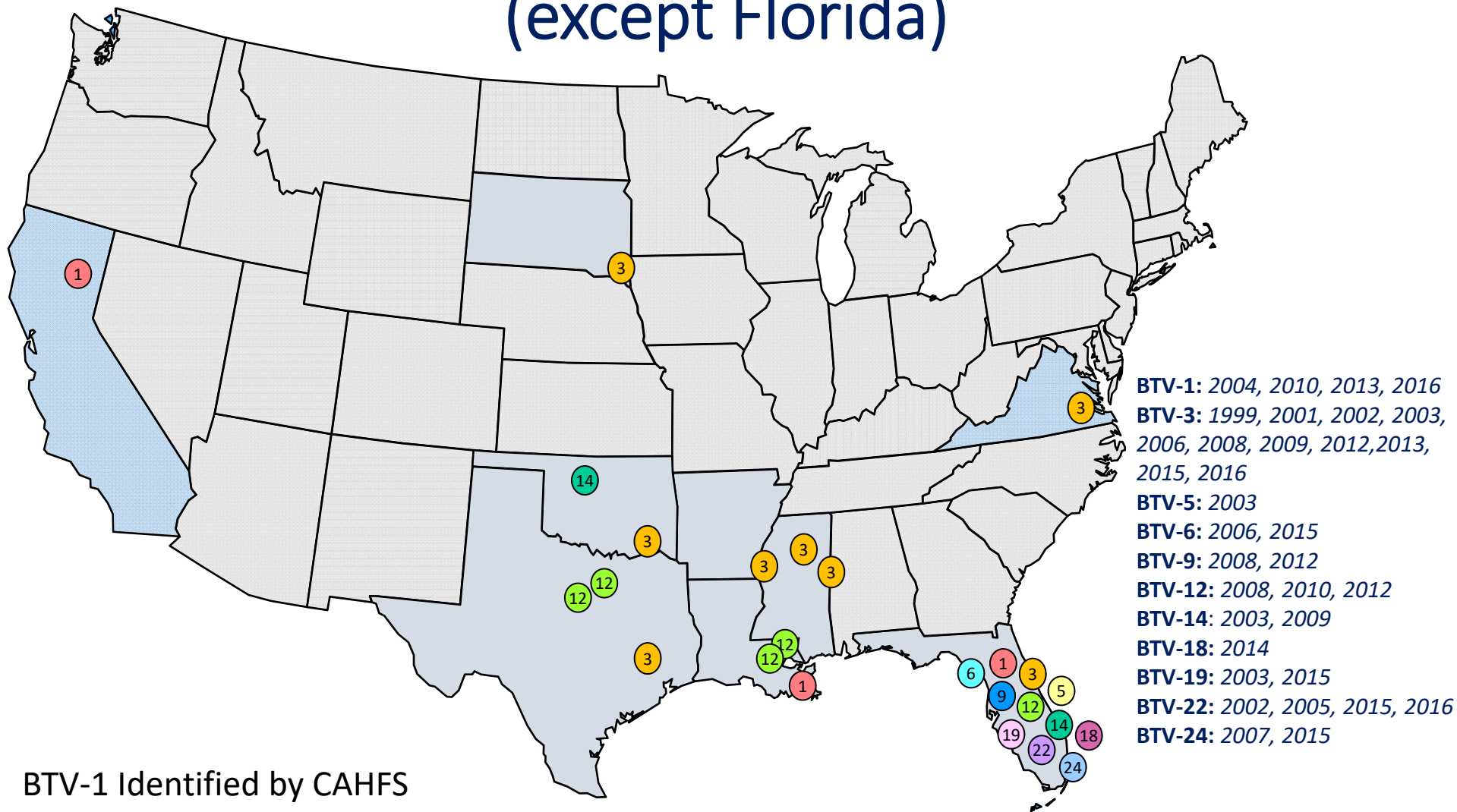




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# 1999-2016

## 'Exotic' BTV serotypes in U.S. by county (except Florida)



BTV-1 Identified by CAHFS

BTV-3 Isolated and Identified by SCWDS



# BTV In the Caribbean



NVSL Identifications: Trinidad 1990, Belize 1990, Dominican Republic 1996, Puerto Rico 2012, Jamaica 2013

GenBank Posts: Martinique 2006, 2009, 2010; Guadeloupe Islands 2010; French Guiana 2011, 2012



# EHDV Identifications, 2015

- Sept 23, 2015  
ProMed reports EHD outbreak in Illinois  
47 suspected cases in white-tailed deer  
Type not reported
- Increased EHD 2 activity in Iowa in 2015

EHD 2		
<i>State</i>	<i>No.</i>	<i>Species</i>
IA	7	WTD, cattle
IL	1	WTD
KS	1	WTD
OK	3	elk, WTD
SD	2*	WTD

*\*EHD identified by SDSU, typing NVSL*

EHD 6		
<i>State</i>	<i>No.</i>	<i>Species</i>
FL	1	WTD

EHD not typed		
<i>State</i>	<i>No.</i>	<i>Species</i>
KY	1*	cattle

*\*EHD identified by WADDL*



# EHDV Identifications, 2016

EHD 1		
<i>State</i>	<i>No.</i>	<i>Species</i>
IA	1	deer

EHD 2		
<i>State</i>	<i>No.</i>	<i>Species</i>
SD	7	Deer
NC	1	deer
VA	1	yak

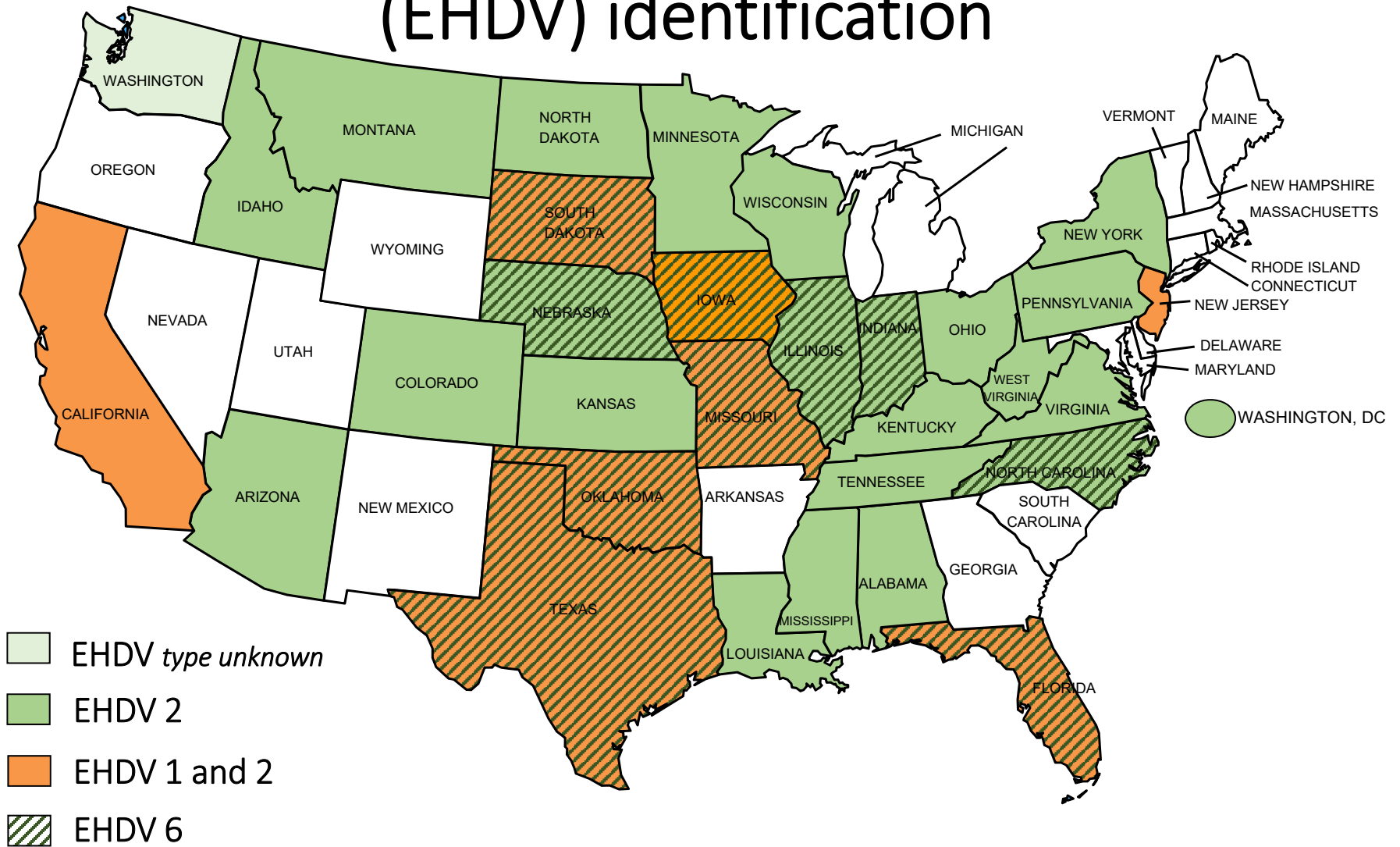
EHD-not typed		
<i>State</i>	<i>No.</i>	<i>Species</i>
NC	1	deer

EHD 6		
<i>State</i>	<i>No.</i>	<i>Species</i>
IA	2	deer



# 1992-2016

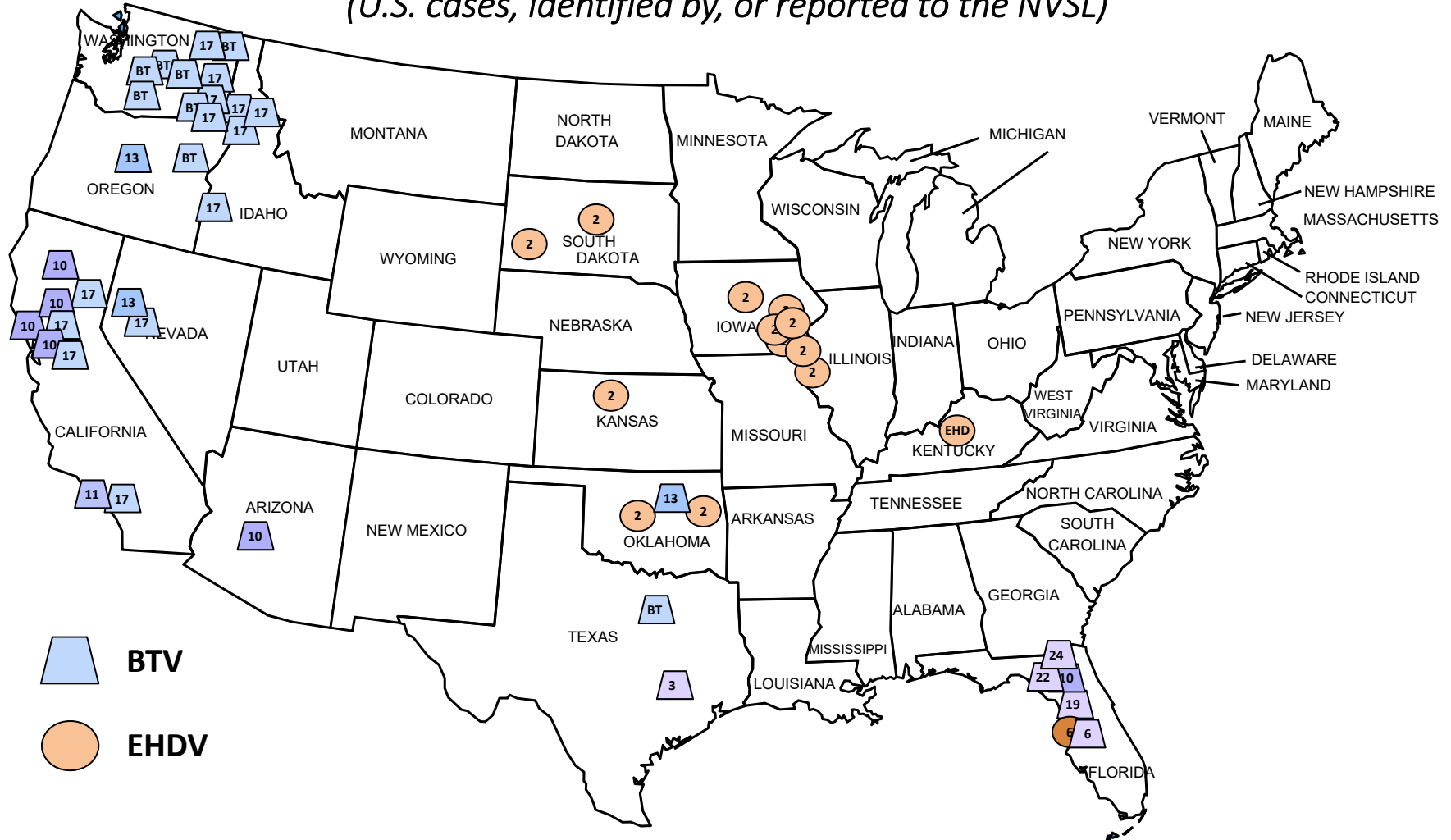
## NVSL Epizootic Hemorrhagic Disease virus (EHDV) identification





## EHDV/BTV Identifications (by county)

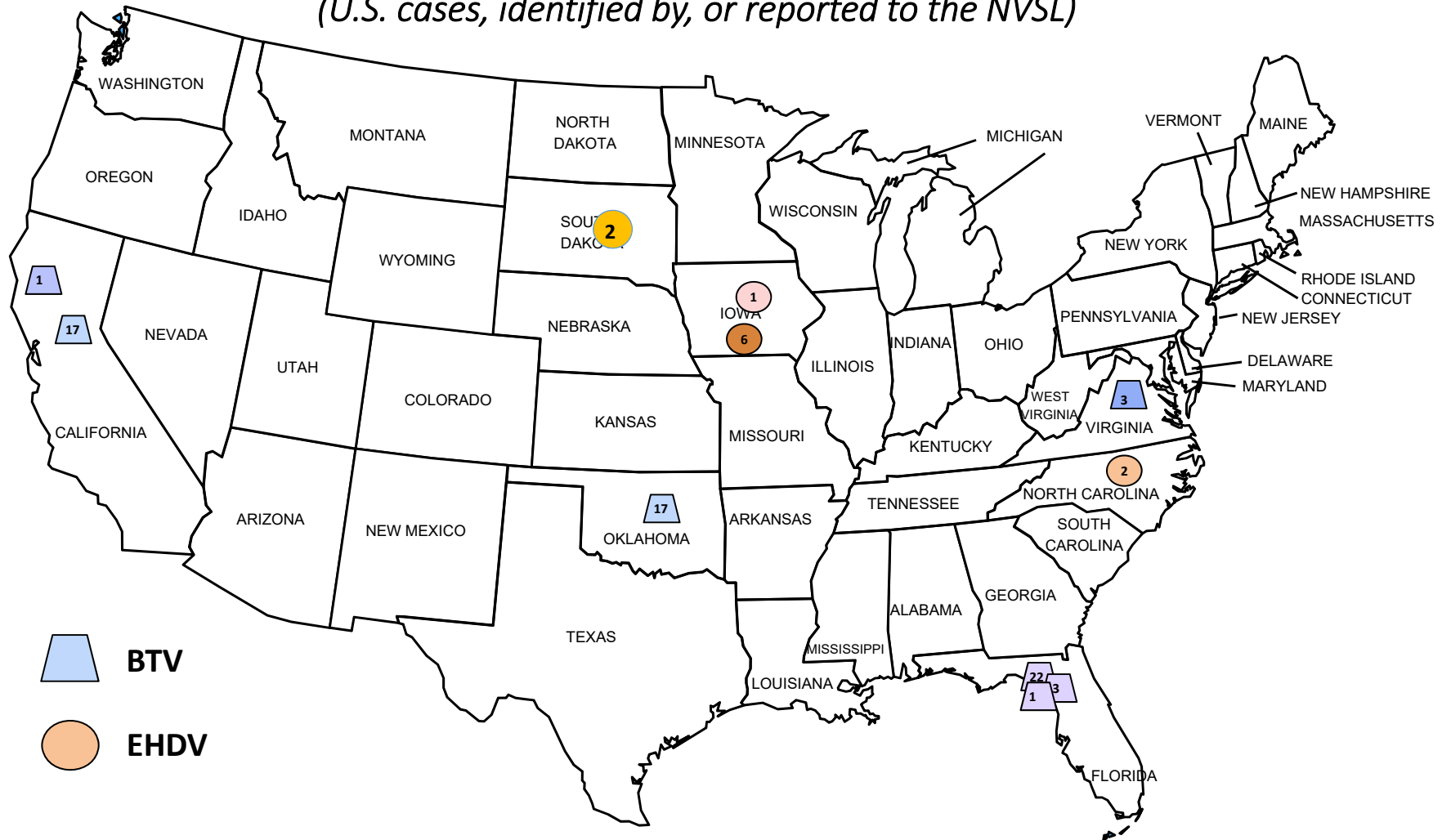
*(U.S. cases, identified by, or reported to the NVSL)*





## EHDV/BTV Identifications (by county)

*(U.S. cases, identified by, or reported to the NVSL)*





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# Questions?





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