

Epizootic Hemorrhagic Disease and Bluetongue in South Dakota 2016

The State of South Dakota experienced a substantial die-off of white-tailed deer during late July-November 2016 due to Epizootic Hemorrhagic Disease (EHD) and/or Blue Tongue (BT). The South Dakota Department of Game, Fish, and Parks (SDGFP) started receiving reports of sick and deceased white-tailed deer during the early summer of 2016. As in previous years with substantial mortality in the summer months, EHD was suspected and efforts were made to document the virus through the Diagnostic Lab at South Dakota State University. Through laboratory testing, confirmation was received that the EHD virus was present in white-tailed deer, and confirmation was received about cases of the BT virus in a pronghorn and a bighorn sheep. The SDGFP continued to document sick and dead ungulates until late November when a substantial frost ceased EHD/BT disease transmission in most areas of the state.

Twenty-one counties from across South Dakota had confirmed EHD virus (26 cases) or BT virus (2 cases) in white-tailed deer, pronghorn, or bighorn sheep (Table 1; Figure 1). Most cases were found in eastern South Dakota with 2,040 deer reported. West of the Missouri River, 222 reports of dead or sick deer, 5 reports of pronghorn, and 1 report of a sick bighorn sheep were recorded. Statewide, a total of 2,268 dead or sick animals were recorded in 2016, which included 2,262 deer, 5 pronghorn, and 1 bighorn sheep (Table 2; Figure 2). Substantially more animals were reported lost to EHD/BT in 2016 than in 2015 (Figure 3).

Due to the large number of white-tailed deer that were being lost to the disease, the SDGFP removed all or some unsold licenses (1,251 licenses; 2,005 tags) from Aurora, Brule, Buffalo, Douglas, Hand, Hughes, Jerauld, Miner, Sanborn, and Sully counties for the East River Deer Season (Table 3). In addition, SDGFP offered refunds to hunters who previously received a deer license for any East River Deer Season hunting unit including archery, youth, or muzzleloader licenses. Refunds were also offered to hunters from Lyman County for the West River Deer Season if they voluntarily returned their licenses before the season started. License returns totaled 1,803 which equated to 2,547 tags in all hunting units (Table 3).

Table 1. Confirmed epizootic hemorrhagic disease or blue tongue in South Dakota, 2016.

| Species | Sex | County | EHD | | BT | | LAT | LONG |
|-----------|-----|-------------|------------|----------|------------|----------|----------|------------|
| | | | EHD | Serotype | BT | Serotype | | |
| WTD | F | Bennett | POS by PCR | ehdv-1 | | | 43.10408 | -101.62041 |
| WTD | M | Bon Homme | POS by PCR | nd | | | 42.95944 | -98.04007 |
| WTD | M | Brule | POS by PCR | nd | | | 43.58491 | -99.28334 |
| WTD | M | Butte | POS by PCR | ehdv-2 | | | 44.66549 | -103.85807 |
| WTD | M | Butte | POS by PCR | ehdv-2 | | | 44.70505 | -103.94869 |
| WTD | M | Charles Mix | POS by PCR | nd | | | 43.43451 | -98.87625 |
| WTD | F | Davison | POS by PCR | nd | | | 43.52657 | -98.22304 |
| WTD | F | Davison | POS by PCR | nd | | | 43.73121 | -98.18484 |
| WTD | M | Haakon | POS by PCR | nd | | | 44.07438 | -101.60721 |
| WTD | M | Hanson | POS by PCR | nd | | | 43.77511 | -97.71836 |
| WTD | F | Hughes | POS by PCR | nd | | | 44.52421 | -99.99028 |
| WTD | F | Jerauld | POS by PCR | nd | | | 44.01373 | -98.55174 |
| WTD | M | Jones | POS by PCR | nd | | | 44.08757 | -100.54623 |
| WTD | F | Lyman | POS by PCR | ehdv-2 | | | 43.90179 | -99.86899 |
| WTD | F | McCook | POS by PCR | nd | | | 43.77505 | 97.58935 |
| WTD | M | Miner | POS by PCR | ehdv-2 | | | 43.89229 | -97.57027 |
| Pronghorn | F | Pennington | NEG | | POS by PCR | btv-17 | 44.03196 | -102.06760 |
| WTD | M | Pennington | POS by PCR | nd | | | 43.89934 | -103.30856 |
| Bighorn | M | Pennington | NEG | | POS by PCR | nd | 43.76128 | -101.93797 |
| WTD | F | Perkins | POS by PCR | nd | | | 45.48540 | -102.25253 |
| WTD | M | Stanley | POS by PCR | ehdv-2 | | | 44.37202 | -100.89332 |
| WTD | F | Stanley | POS by PCR | ehdv-2 | | | 44.40439 | -100.39934 |
| WTD | F | Sully | POS by PCR | ehdv-2 | | | 44.84985 | -100.00838 |
| WTD | M | Sully | POS by PCR | nd | | | 44.73696 | -100.14689 |
| WTD | M | Union | POS by PCR | nd | | | 42.53047 | -96.52716 |
| WTD | F | Union | POS by PCR | nd | | | 42.52667 | -96.596276 |
| WTD | M | Walworth | POS by PCR | ehdv-2 | | | 45.33976 | -100.2293 |
| WTD | M | Yankton | POS by PCR | ehdv-2 | | | 42.87863 | -97.48375 |

nd=not determined

South Dakota EHD Records (2016)

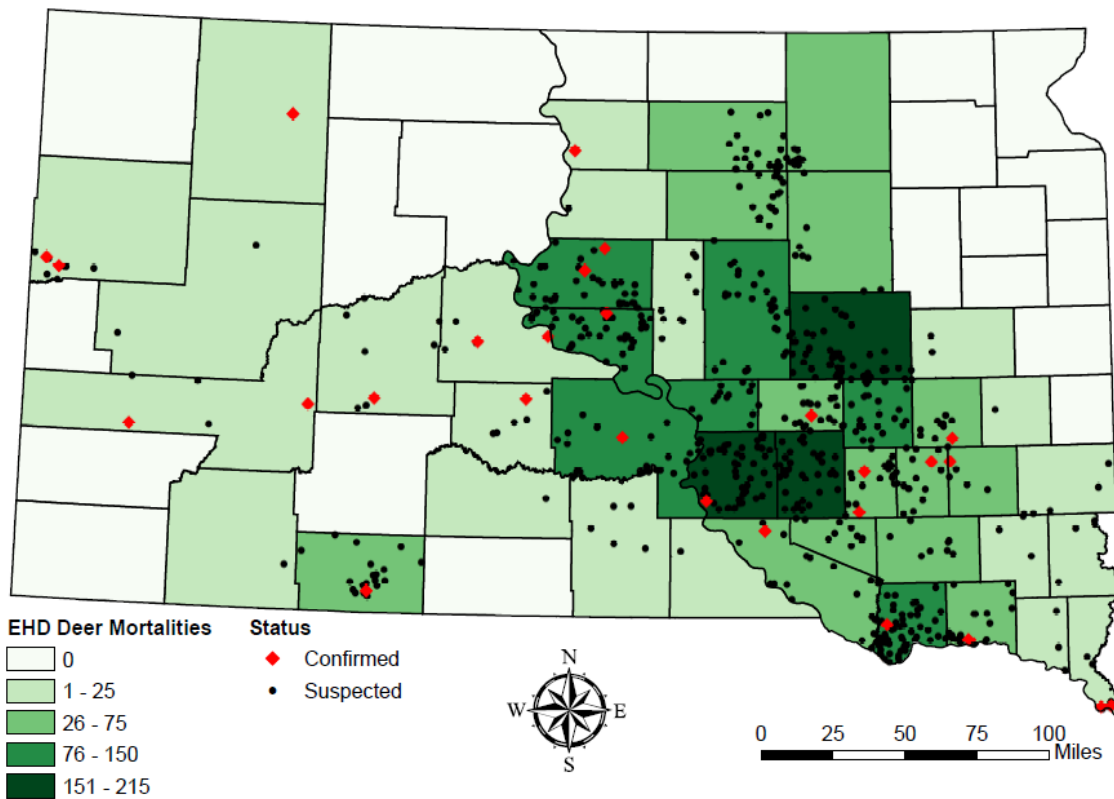


Figure 1. Locations of reported dead deer and pronghorn in South Dakota, 2016. Red locations indicate positive results from laboratory testing.

Table 2. Numbers of reported white-tailed deer (WT), mule deer (MD), pronghorn (PR), and bighorn sheep (BS) in South Dakota counties, 2016.

| County | Species | Total |
|---------------|---------|-------|
| Aurora | WT | 167 |
| Beadle | WT | 213 |
| Bennett | WT | 40 |
| Bennett | MD | 4 |
| Bon Homme | WT | 96 |
| Bon Homme | MD | 1 |
| Brown | WT | 48 |
| Brule | WT | 204 |
| Brule | MD | 2 |
| Buffalo | WT | 152 |
| Butte | WT | 13 |
| Butte | MD | 2 |
| Charles Mix | WT | 75 |
| Clay | WT | 6 |
| Davison | WT | 50 |
| Douglas | WT | 50 |
| Edmunds | WT | 42 |
| Fall River | WT | 1 |
| Faulk | WT | 63 |
| Gregory | WT | 6 |
| Haakon | WT | 14 |
| Hand | WT | 138 |
| Hanson | WT | 55 |
| Hughes | WT | 138 |
| Hughes | MD | 1 |
| Hughes | PR | 1 |
| Hutchinson | WT | 45 |
| Hyde | WT | 21 |
| Jackson | MD | 1 |
| Jerauld | WT | 53 |
| Jones | WT | 14 |
| Kingsbury | WT | 6 |
| Lake | WT | 3 |
| Lincoln | WT | 6 |
| Lyman | WT | 92 |
| Lyman | MD | 3 |
| McCook | WT | 31 |
| Meade | WT | 4 |
| Mellette | WT | 2 |
| Miner | WT | 55 |
| Minnehaha | WT | 7 |
| Oglala Lakota | WT | 2 |
| Pennington | WT | 6 |
| Pennington | PR | 1 |
| Pennington | BS | 1 |
| Perkins | WT | 1 |
| Potter | WT | 1 |
| Sanborn | WT | 99 |
| Spink | WT | 34 |
| Stanley | WT | 8 |
| Sully | WT | 99 |
| Sully | MD | 2 |
| Sully | PR | 1 |
| Tripp | WT | 13 |
| Turner | WT | 5 |
| Union | WT | 25 |
| Walworth | WT | 2 |
| Yankton | WT | 43 |

2016 EHD Reports

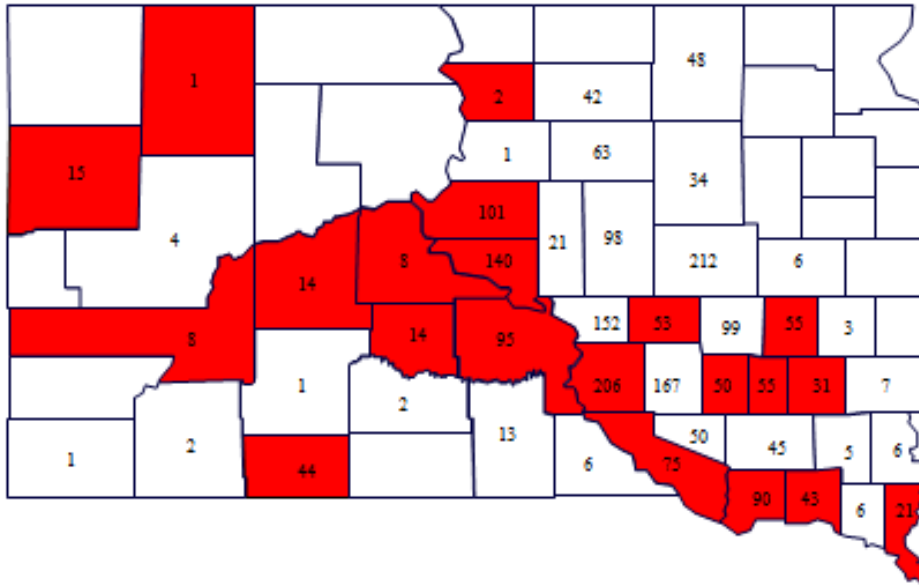


Figure 2. Number of suspected EHD or BT deer, pronghorn, or bighorn sheep reported in South Dakota, 2016. Red indicates at least one positive lab result occurred in the county.

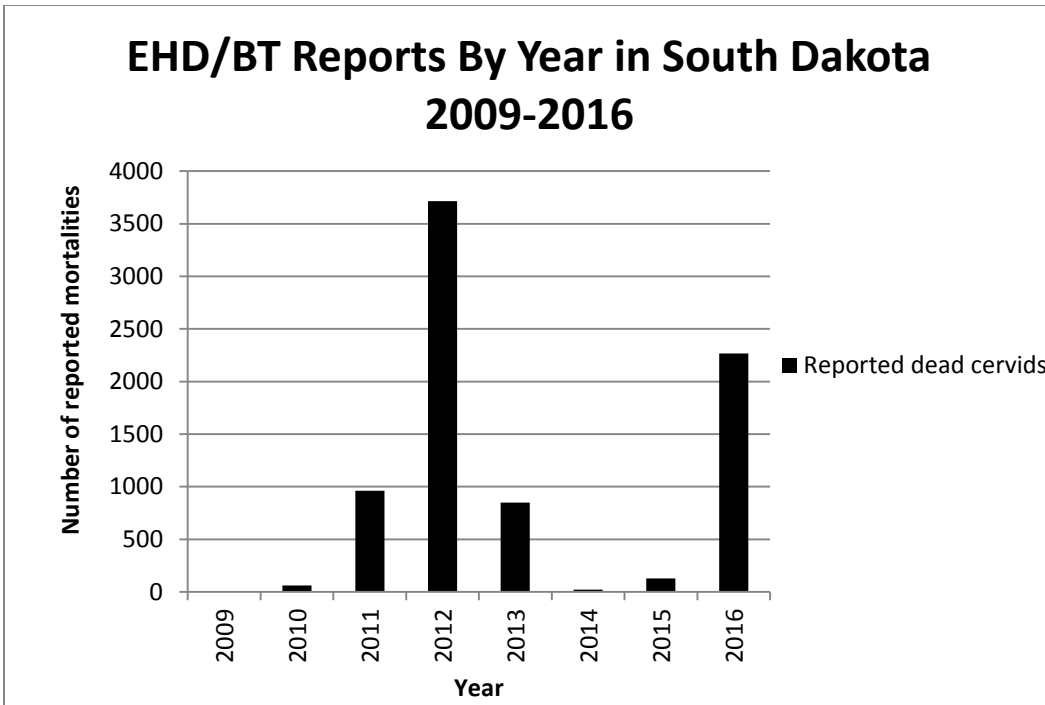


Figure 3. Annual reported loss of deer, elk, pronghorn, and bighorn sheep in South Dakota, 2009-2016.

Table 3. Licenses(tags) returned and licenses(tags) removed in response to EHD/BT in South Dakota, 2016.

| County | Total Licenses (tags) Returned | Total Licenses (tags) Pulled | Total Licenses (tags) Reduced |
|--------------|--------------------------------|------------------------------|-------------------------------|
| Aurora | 159 (291) | 236 (377) | 395 (668) |
| Beadle | 44 (51) | | 44 (51) |
| Bon Homme | 30 (30) | | 30 (30) |
| Brookings | 8 (8) | | 8 (8) |
| Brown | 31 (31) | | 31 (31) |
| Brule | 156 (279) | 21 (42) | 177 (321) |
| Buffalo | 22 (42) | 150 (300) | 172 (342) |
| Campbell | 6 (12) | | 6 (12) |
| Charles Mix | 52 (52) | | 52 (52) |
| Clark | 4 (4) | | 4 (4) |
| Clay | 5 (5) | | 5 (5) |
| Codington | 5 (5) | | 5 (5) |
| Davison | 32 (32) | | 32 (32) |
| Day | 4 (4) | | 4 (4) |
| Deuel | 6 (6) | | 6 (6) |
| Douglas | 38 (38) | 10 (10) | 48 (48) |
| Edmunds | 6 (12) | | 6 (12) |
| Faulk | 40 (120) | | 40 (120) |
| Grant | 2 (2) | | 2 (2) |
| Hamlin | 2 (2) | | 2 (2) |
| Hand | 1 (1) | 98 (196) | 99 (197) |
| Hanson | 23 (23) | | 23 (23) |
| Hughes | 45 (56) | 29 (58) | 74 (114) |
| Hutchinson | 12 (12) | | 12 (12) |
| Hyde | 32 (64) | | 32 (64) |
| Jerauld | 62 (119) | 201 (388) | 263 (507) |
| Kingsbury | 11 (11) | | 11 (11) |
| Lake | 9 (9) | | 9 (9) |
| Lincoln | 5 (5) | | 5 (5) |
| Lyman | 109 (188) | | 109 (188) |
| Marshall | 8 (8) | | 8 (8) |
| McCook | 13 (13) | | 13 (13) |
| McPherson | 14 (28) | | 14 (28) |
| Miner | 51 (54) | 59 (59) | 110 (113) |
| Minnehaha | 7 (7) | | 7 (7) |
| Moody | 6 (6) | | 6 (6) |
| Potter | 25 (45) | | 25 (45) |
| Roberts | 2 (2) | | 2 (2) |
| Sanborn | 52 (57) | 319 (319) | 371 (376) |
| Spink | 33 (33) | | 33 (33) |
| Sully | 109 (203) | 128 (256) | 237 (459) |
| Turner | 5 (5) | | 5 (5) |
| Union | 9 (9) | | 9 (9) |
| Walworth | 9 (17) | | 9 (17) |
| Yankton | 36 (36) | | 36 (36) |
| Archery Deer | 351 (351) | | 351 (351) |
| Misc * | 65 (65) | | 65 (65) |
| Totals | 1803 (2547) | 1251 (2005) | 3054 (4552) |

* special deer, muzzleloader deer, youth deer, mentored deer

