



## Projected Economic Impacts of a Chronic Wasting Disease (CWD) Outbreak in Tennessee

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### Background

- Chronic Wasting Disease (CWD) is a progressive and always fatal disease that can be found in cervids, such as deer and elk.
- The primary clinical sign of CWD is weight loss over time. Behavioral changes usually occur such as decreased interactions with other animals, listlessness, lowering of the head, blank facial expression, and repetitive walking in set patterns.
- There is no known relationship between CWD and any other transmissible spongiform encephalopathy of animals or people.
- CWD has been found in Wisconsin. Research has projected that the presence of CWD in Wisconsin contributed to a 10 to 20% decline in the hunter-days and a decline in spending on deer hunting of between \$48 million and \$96 million (Bishop).

*If CWD were to occur in Tennessee, it is likely that a decline in hunter days would occur. The decline in hunter days could be about 15%. With the loss in hunter days, travel, equipment, and other hunting related expenditures would decline.*

### Measuring the Economic Impacts

Prior research on deer hunting travel expenditures in Tennessee have shown that hunting expenditures in the state were about \$589 million in 2001 (Fish and Wildlife Service). Expenditures were allocated as food and lodging, 10.88%, transportation, 6.46%, equipment rental, 2.72%, hunting equipment, 23.47%, auxiliary equipment, 41.84%, and other, 14.63%. Using TN-AIM (an IMPLAN based input-output model for the Tennessee economy), industry output of the sectors representing those where hunters spend money were decreased by 15%.

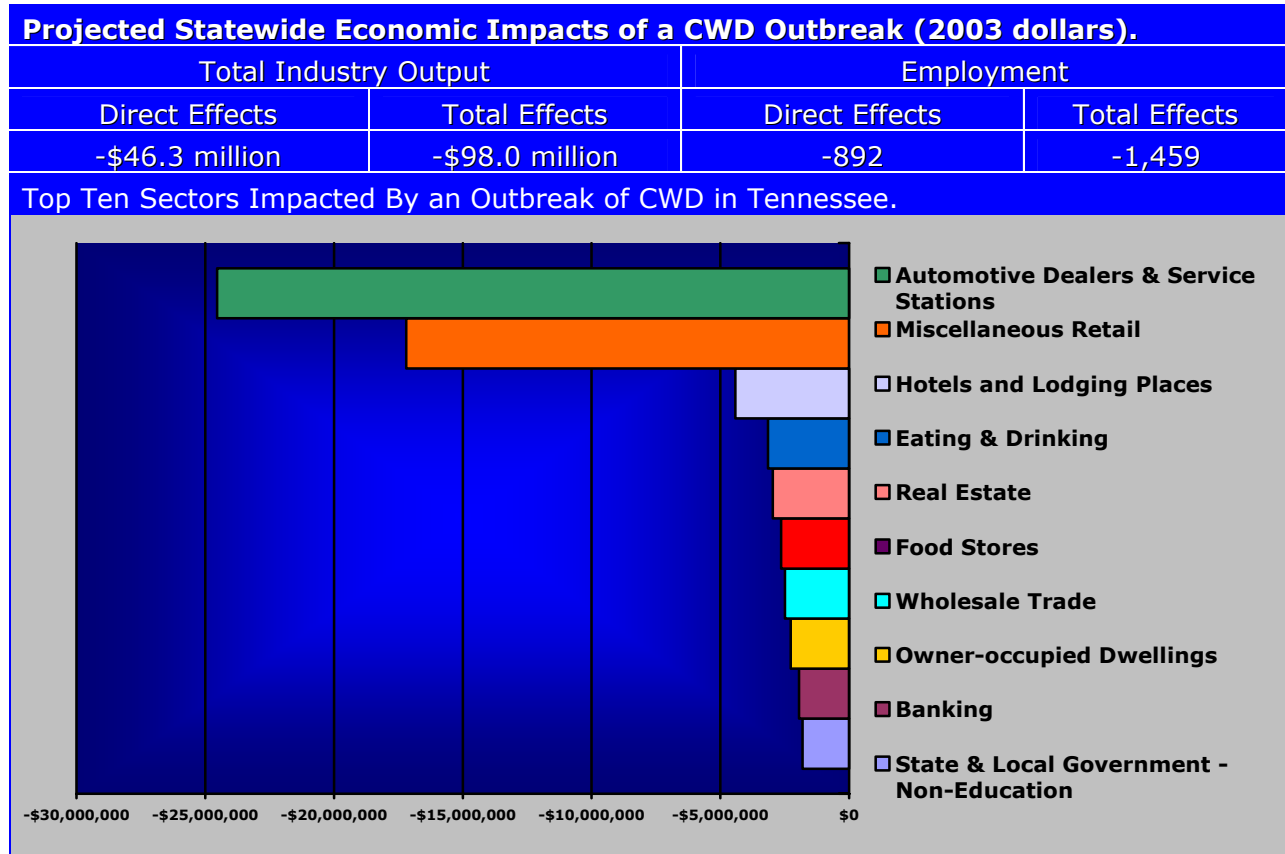
### Results

An outbreak of CMD in Tennessee would cause an estimated \$46.3 million decline in direct total industry output and a loss of 892 jobs. When the direct effects are combined with effects from decreased purchases from supplying industries and service providers and

The **TN-AIM IMPLAN** based model describes the transfer of money between industries and institutions and contains both market-based and non-market financial flows, such as inter-institutional transfers. When total sales of a particular industry sector are expected to change, three types of impacts economy wide are measured: Direct, Indirect and Induced effects.

- **Direct effects**-the immediate effects associated with the change in the final demand for a particular industry.
- **Indirect effects**-secondary effects or production changes in backward-linked industries caused when inputs needs change due to the impact of directly affected industry.
- **Induced effects**-response by all local industries caused by increased expenditures of new household income and inter-institutional transfers generated from the direct and indirect effects of the change in final demand for a specific industry.
- **Total effects=direct + indirect + induced**

effects from fewer expenditures with income losses, the total economic losses are estimated at \$98.0 million and 1,459 jobs. The sectors most impacted by this decline include service stations, retail, hotels and lodging places, eating and drinking, real estate, food stores, wholesale trade, owner occupied dwellings, banking, and state and local government. These effects would accrue from less travel, food expenditures, lodging, equipment and supplies purchases, fewer licenses sold, and the spillover effects of these declines on the general economy.



**Areas of Impact**

As indicated by the map, deer hunting occurs throughout rural areas in Tennessee. However, centers for deer hunting exist in West Tennessee. The top rankings for deer harvest are held in counties in upper and lower West Tennessee. Therefore, it is likely that unless the outbreak were limited to another area of the state, that these areas would experience much of the declines in expenditures on deer hunting activities.

