



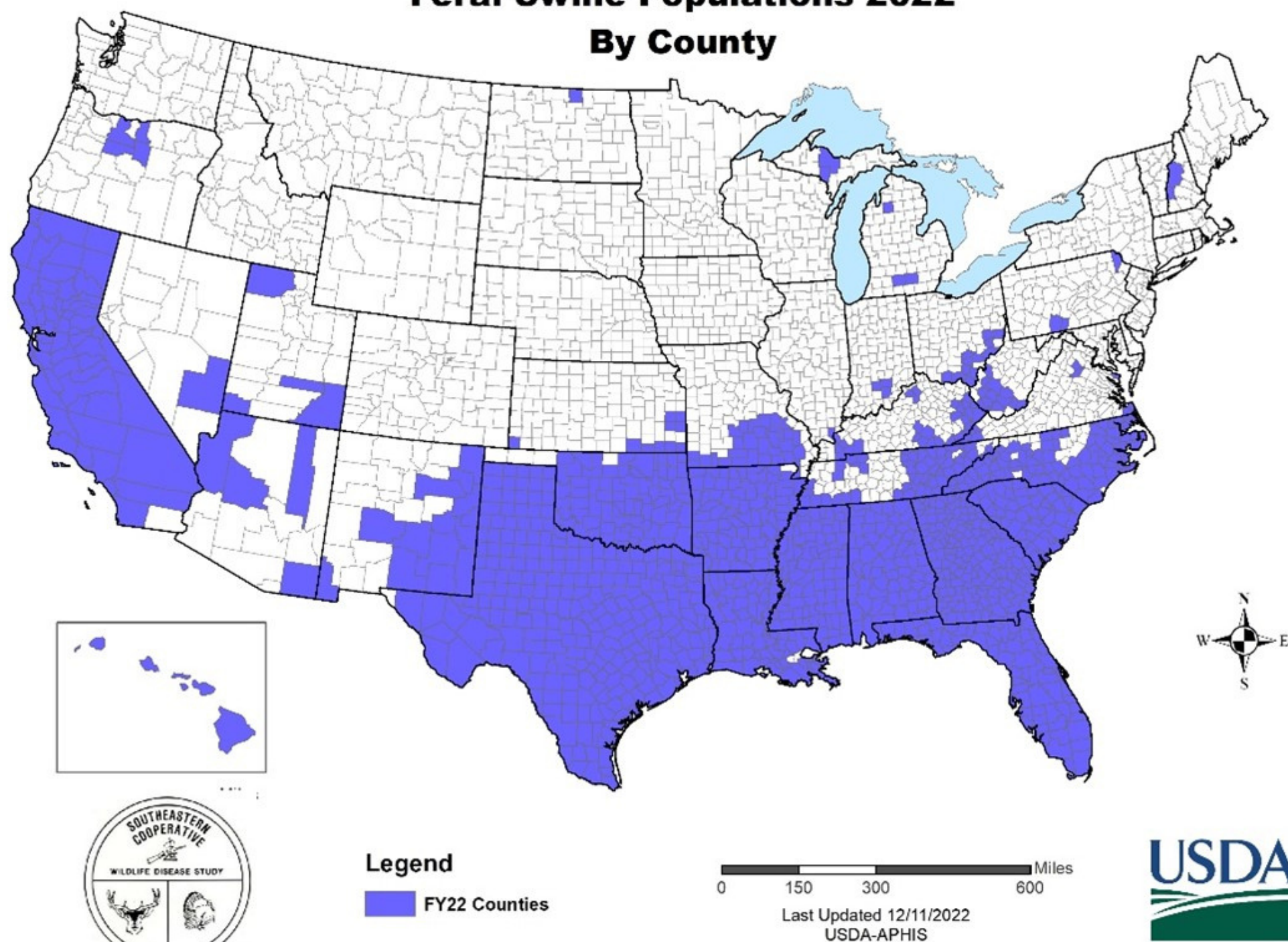
WATERSHED SCALE FERAL HOG MANAGEMENT

STATUS & TRENDS

Feral hogs are an exotic invasive species that have spread across at least 35 states with an estimated U.S. population over 6 million primarily within southern and western regions (1). First introduced to North America by European explorers in the 1500s as a food source, these free-ranging domestic swine later hybridized with Eurasian wild boars that had been introduced for sport hunting in the 1900s (1, 2). Texas has nearly half of the U.S. population (3). As of 2022, El Paso County is the last county in Texas where no feral hogs have been reported (2).

Feral Swine Populations 2022

By County



Texas has an estimated **2.6 million feral hogs**, which is nearly half the U.S. population (3).

Feral hog damage costs **more than \$500 million per year in Texas***.

**According to research by Texas A&M University and the National Wildlife Research Center*

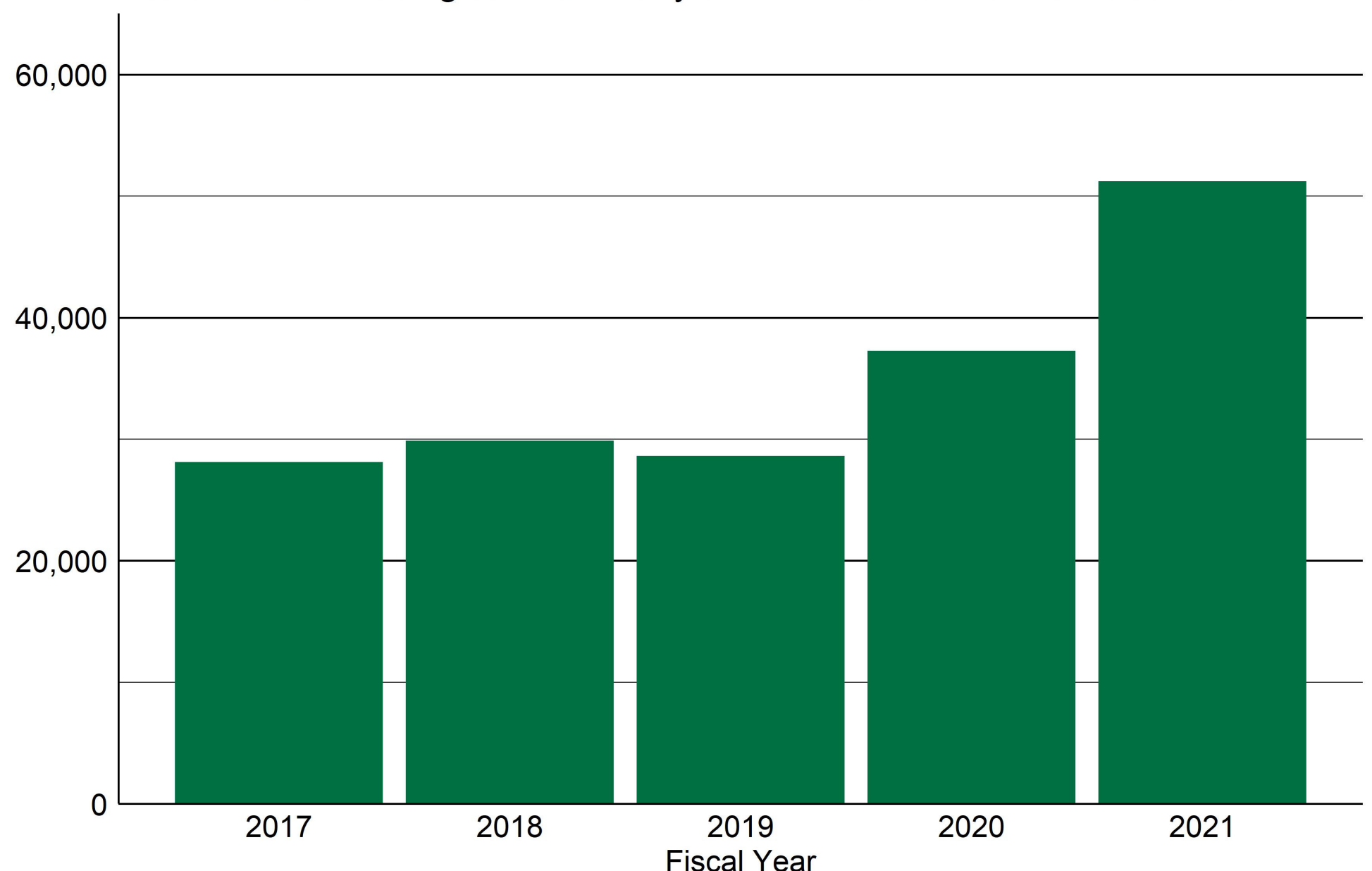
REMOVAL EFFORTS STATEWIDE

Feral hogs damage agriculture and the environment by impacting water quality, as well as destroying crops and native habitats. They are a nuisance in communities where grassy areas and manicured landscapes are rooted up. In populated areas, they are more likely to encounter humans, which poses a safety concern. The Texas Cooperative Wildlife Services Program is a joint effort between USDA-APHIS-Wildlife Services, the Texas A&M AgriLife Extension Service, and the Texas Wildlife Damage Management Association whose mission is to protect the State's resources from damage caused by impactful species (4). The number of feral hogs removed from the state through this program has increased since fiscal year 2019 with 51,215 individuals removed in fiscal year 2021.

CHAMBERS COUNTY

In Chambers County where the Double Bayou Watershed is located, feral hog eradication has been successful in removing 402 individuals between December 2019 to October 2020. As part of their statewide program, Texas Wildlife Services removed: 230 feral hogs between October 2020 and September 2021 from 35,912 acres and 393 feral hogs between October 2021 and September 2022 from 36,512 acres in the county.

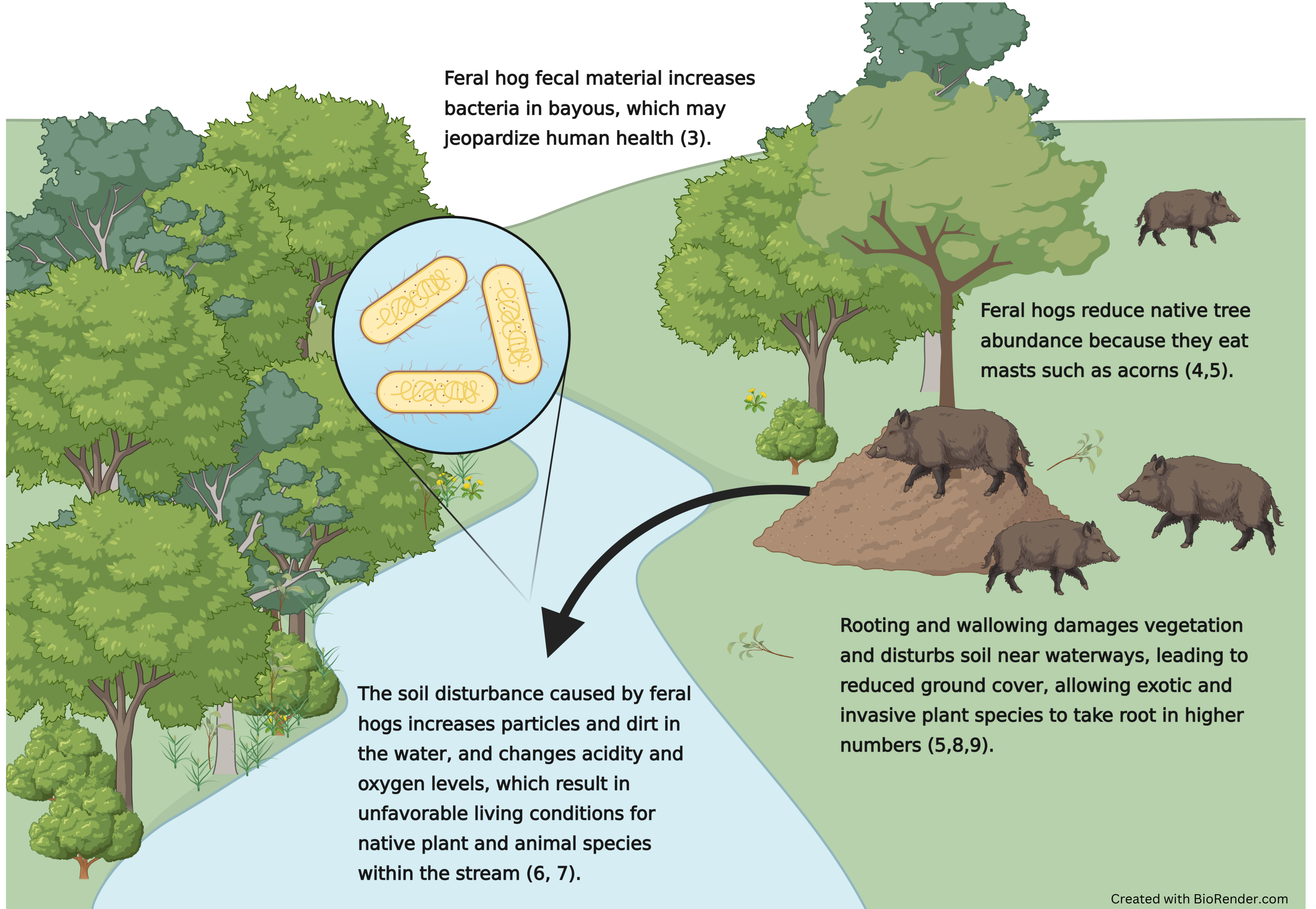
Number of Feral Hogs Removed by Texas Wildlife Services Statewide



1. USDA APHIS (2022) History of Feral Swine in the Americas. Available at: <https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/operational-activities/feral-swine/sa-fs-history> (Accessed: 7 February 2023).
2. USDA APHIS (2023) Feral Swine Populations 2022 By County. Available at: https://www.aphis.usda.gov/wildlife_damage/feral_swine/images/2022-feral-swine-population-map.jpg (Accessed: 6 June 2023).
3. TPWD (2020) Nuisance Wildlife in Texas: Wild Pigs. Available at: http://tpwd.texas.gov/huntwild/wild/nuisance/feral_hogs/ (Accessed: 7 February 2023).
4. TWS (2021) Texas Wildlife Services State Report FY21. Available at: <https://agrilife.org/twxwildlifeservices/files/2022/10/State-report-FY21.pdf>

THE IMPACT OF FERAL HOGS ON WATER QUALITY

Feral hogs lack sweat glands and must frequent wetlands, bayous, and riparian forests in search of moist areas to cool off during hot humid Texas summers. Because they frequently spend time in and around water bodies, their waste often ends up in bayous either through direct deposition or in stormwater runoff, which increases bacteria concentrations in surface waters. Consequently, their presence within watersheds, especially at high densities, can be a significant source of bacteria loads. In fact, streams in watersheds with feral hogs have been found to have 40 times the bacteria levels than those without them (1). A previous study in the Double Bayou Watershed found that wildlife, including feral hogs, was the highest contributor to the bacterial source load (2).



A TEXAS SUCCESS STORY

Watershed scale management of feral hogs is essential to maintain and improve water quality. Reducing feral hog populations can reduce in-stream bacteria concentrations by as much as **50%** (10). When 537 feral hogs were removed by the Texas Wildlife Services from the Plum Creek Watershed in Caldwell and Hays Counties, bacteria concentrations were **reduced by 48%** when compared with an adjacent area with a larger feral hog population (11, 12). Success stories like this support the use of long-term management methods to improve water quality in bayous by removing wild hogs. This is a viable strategy for the successful implementation of the Double Bayou Watershed Protection Plan.

1. Bolds, S.A. et al. 2021. "Impacts of a Large Invasive Mammal on Water Quality in Riparian Ecosystems." *Journal of Environmental Quality* 50 (2): 441–53.
2. Glenn, Stephanie., Bare, Ryan., 2016. "Double Bayou Watershed Protection Plan" <https://www.doublebayou.org/wp-content/uploads/2016/07/EntireWPPFinal6-7-16modB.pdf>
3. Jay, M.T. et al. (2007) 'Escherichia coli O157:H7 in feral swine near spinach fields and cattle, central California coast', *Emerging Infectious Diseases*, 13(12), pp. 1908–1911. Available at: <https://doi.org/10.3201/eid1312.070763>
4. Campbell, T.A. and Long, D.B. (2009) 'Feral swine damage and damage management in forested ecosystems', *Forest Ecology and Management*, 257(12), pp. 2319–2326. Available at: <https://doi.org/10.1016/j.foreco.2009.03.036>
5. Siemann, E. et al. (2009) 'Experimental test of the impacts of feral hogs on forest dynamics and processes in the southeastern US', *Forest Ecology and Management*, 258(5), pp. 546–553. Available at: <https://doi.org/10.1016/j.foreco.2009.03.056>
6. Doupe, R.G. et al. (2010) 'Efficacy of exclusion fencing to protect ephemeral floodplain lagoon habitats from feral pigs (*Sus scrofa*)', *Wetlands Ecology and Management*, 18(1), pp. 69–78. Available at: <https://doi.org/10.1007/s11273-009-9149-3>
7. Kaller, M. et al. (2007) 'Feral hog research in western Louisiana: expanding populations and unforeseen consequences', *Human-Wildlife Conflicts*, 1(2), pp. 168–177.
8. Chavarria, P. et al. (2007) 'A landscape-level survey of feral hog impacts to natural resources of the Big Thicket National Preserve', *Human-Wildlife Conflicts*, 1(2), pp. 199–204.
9. Kotanen, P.M. (1995) 'Responses of Vegetation to a Changing Regime of Disturbance: Effects of Feral Pigs in a Californian Coastal Prairie', *Ecography*, 18(2), pp. 190–199.
10. Bolds, S.A. et al. 2022. "Wild Pig Removal Reduces Pathogenic Bacteria in Low-Order Streams." *Biological Invasions* 24 (5): 1453–63. <https://doi.org/10.1007/s10530-022-02731-8>.
11. Timmons, J. et al. (2011) Feral Hogs and Water Quality in Plum Creek. Texas AgriLife Extension Service. Available at: <https://feralhogs.tamu.edu/files/2011/08/Feral-Hogs-and-Water-Quality-in-Plum-Creek.pdf>
12. Texas A&M AgriLife Extension (2010). Feral Hog Project Accomplishments. Available at: <http://feralhogs.tamu.edu/files/2010/05/Final-2-year-F-HOG-ACCOMPLISHMENTS-2010.pdf>.

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