



OKLAHOMA



Thirty-five million acres of wetland forests provide valuable ecosystem services for people living in the US South, including:

- Protection from extreme events
- Recreation, tourism, and aesthetics
- Water filtration and waste treatment
- Food and pollination
- Climate regulation
- Raw materials.

Wetland forest ecosystem services are worth more than \$500 billion per year. But wetland forests are constantly under siege by external forces, including urban expansion, invasive species, increased demand for timber, conversion to intensively managed plantations or

agriculture, pollution, sea-level rise, and the changing climate. Over the next 30 years, how will we protect the valuable services our Southern wetland forests provide? What can we gain if we do the right thing? And what do we stand to lose if we do not invest in our forests?

We investigated how the value of wetland forests in the US South would increase if we protected more land, extended natural riparian buffers, and managed forests more responsibly. Here are the best facts from Oklahoma.

Oklahoma's Wetland Forests Are Worth \$1.7 Billion

- Worth could increase up to \$1.7 billion by investing in conservation
- Wetland Forest Gem: Little River National Wildlife Refuge
- 160,000 acres of wetland forest, including 7 named swamps and 3,076 named streams in the state¹

Protection From Extreme Events: Oklahoma's Wetland Forests Provide \$520 Million

- Value in protection from extreme events and water flow regulation could increase up to \$34 million by investing in conservation
- 18 major flood events hit four gulf states, including Oklahoma, between March of 2015 and August of 2016²
- Four flood events cost over a billion dollars in damages each since 1980³

Aesthetics, Tourism, and Recreation: Oklahoma's Wetland Forests Provide \$420 Million

- Value in aesthetics and recreation could increase up to \$32 million by investing in conservation
- Oklahoma had 25.5 million visitors in 2010, who spent \$6.2 billion in and supported 74,900 tourism jobs⁴
- Over two-thirds of residents participated in wildlife-related recreation, spending \$1.8 billion in 2011⁵

Water Supply and Waste Treatment: Oklahoma's Wetland Forests Provide \$390 Million

- Value in water supply and waste treatment could increase up to \$29 million by investing in conservation
- Over half of residents rely on public sewer systems. Many public facilities rely on natural infrastructure to reduce costs of waste and water treatment⁶
- Over ten percent of residents rely on private water sources like wells. Residents rely on forests to naturally filter pollutants from their water supply⁶

Food and Pollination: Oklahoma's Wetland Forests Provide \$240 Million

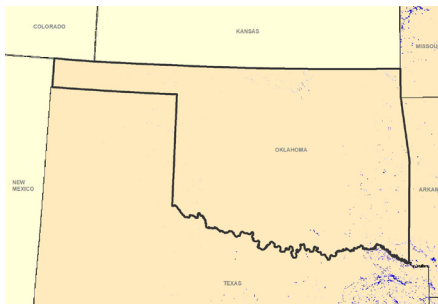
- Value in food and pollination could increase up to \$17 million by investing in conservation
- Wetland forests provide habitat for pollinators of agricultural crops
- Approximately 770,000 residents in the state hunt or fish⁵
- In 2016, hunters purchased 200,000 deer hunting licenses⁷
- In 2016, hunters harvested over 300,000 ducks and geese within the state⁸

Regulating Services: Oklahoma's Wetland Forests Provide \$149 Million

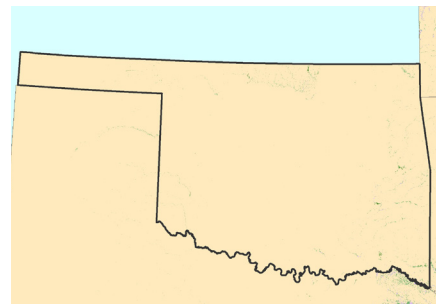
- Value in climate regulation, air quality, soil formation, and erosion control could increase up to \$5 million by investing in conservation
- There are an estimated 4 million megagrams of carbon stored in the state's wetland forests, and continual carbon storage reduces the worst impacts of climate change

Raw Materials: Oklahoma's Wetland Forests Provide \$11 Million

- In 2011, there were 13 forest product mills (e.g., pulp and timber) employing 951 people in the state⁹
- Wetland forests currently provide raw materials worth \$11 million in ecosystem services value



There are 3,633,000 megagrams of carbon stored in Oklahoma wetland forests.



Oklahoma has 160,000 acres of protected wetland forest (green), with an additional 18,000 acres of wetland forest proposed (purple) to be protected.

REFERENCES

1. Oklahoma Physical Features. Available at: <http://oklahoma.hometownlocator.com/features/category,c,physical.cfm>. (Accessed: 15th September 2017)
2. 18 Major Flood Events Have Hit Texas, Louisiana, Oklahoma, Arkansas Since March 2015 | The Weather Channel. The Weather Channel (2016). Available at: <https://weather.com/storms/severe/news/flood-fatigue-2015-2016-texas-louisiana-oklahoma>. (Accessed: 15th September 2017)
3. NOAA National Centers for Environmental Information. US Billion-Dollar Weather and Climate Disasters. (2017). Available at: <https://www.ncdc.noaa.gov/billions/events/US/1980-2017>. (Accessed: 11th September 2017)
4. Dean Runyan Associates. Oklahoma Travel Impacts. (Oklahoma Tourism and Recreation Department, 2016).
5. US Fish & Wildlife Service & US Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. (US Fish & Wildlife Service, 2014).
6. Census of Housing - Housing Characteristics In The US - Tables. Available at: <https://www.census.gov/hhes/www/housing/census/histcensusghg.html>. (Accessed: 18th September 2017)
7. Antler Nation. Realtree Available at: <https://www.realtree.com/deer-hunting/antler-nation>. (Accessed: 18th September 2017)
8. Harvest Trends | Flyways.us. Available at: <https://flyways.us/regulations-and-harvest/harvest-trends>. (Accessed: 18th September 2017)
9. The Southern Forest Products Industry. Available at: <http://usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=7f8429df087e4c86951a7e69d93207a7>. (Accessed: 18th September 2017)