



2021 Scrap Tire Annual Report Summary

Purpose of the Scrap Tire Annual Report Summary

Scrap tire transporters, storage sites, and facilities are required to submit an annual activity report detailing the number of tires transported and the end use or destination. The Texas Commission on Environmental Quality (TCEQ) Scrap Tire Program compiles the data from annual activity reports to create this report summary. The purpose of the report is to provide information on the state of scrap tire management in Texas to industry professionals, legislators, regulatory entities, and citizens.

Background on the TCEQ Scrap Tire Program

The TCEQ Waste Permits Division regulates the management of used and scrap tires in Texas under the authority of Texas Health and Safety Code Sections 361.011, 361.112, and 361.1125. The tire regulations in Title 30, Texas Administrative Code Chapter 328, Subchapter F, outline regulatory requirements and standards related to used and scrap tire management activities. Owners or operators of regulated scrap tire management activities are required to obtain a registration with TCEQ to ensure the safe management of scrap tires to protect human health and the environment.

Regulated Tire Management Activities

Regulated management activities include used and scrap tire transportation, processing, recycling, utilization, storage, and land reclamation projects using tires (LRPUTs). Scrap tire generators and owners or operators of LRPUTs are not required to submit an annual report for their regulated tire management activities.

Reporting Period and Requirements

Scrap tire transporters, as well as owners or operators of scrap tire facilities and scrap tire storage sites, must submit an annual report to TCEQ and include information related to their tire management activities during the calendar year. The annual report for the preceding calendar year is due on or before March 1 on a form prescribed by TCEQ.

Transporters

Scrap tire transporters must report the following information using the form [Annual Activity Report for Scrap Tire Transporters \(TCEQ-10311\)](#):

- **tires collected from generators** — number and type (passenger, truck, off-the-road) of whole used tires and scrap tires, and weight of tire pieces and shreds *collected*, listed by generator name and address; and
- **tires delivered to destination or end-use facility** — number and type of whole used tires and scrap tires, and weight of tire pieces and shreds *delivered* to each destination or end-use facility, including name and address.

Scrap tire facilities and scrap tire storage sites

Owners or operators of scrap tire facilities and scrap tire storage sites must report the following information using the form [Annual Activity Report for Scrap Tire Facilities and Scrap Tire Storage Sites \(TCEQ-10305\)](#):

- **tires received** — number and type of whole used tires and scrap tires, and weight of tire pieces and shreds *received* from generators, transporters, or other tire facilities;
- **tires processed or stored** — number and type of whole used tires and scrap tires, and weight of tire pieces and shreds *processed and stored* at scrap tire facilities and scrap tire storage sites; and
- **tires delivered to destination or end-use facility** — number and type of whole used tires and scrap tires, and weight of tire pieces and shreds *delivered*, listed by destination or end-use facility name and address.

Number of Active Registrations by Type

According to agency records, the total number of active scrap tire registrations in 2021 was 11,956. The numbers of each type of activity by registered entities are detailed in *Table 1. Number of Active Registrations by Type*. A single registration may include more than one type of tire handling activity.

Table 1. Number of Active Registrations by Type

Type of Registered Entity	Number of Registrations
Generator	11,361
Transporter	452
Scrap Tire Facility—Processing	128
Scrap Tire Facility—Recycling	10
Scrap Tire Facility—Energy Recovery	8
Scrap Tire Storage Site	11
LRPUT	16

End-Uses and Disposal Rates for Scrap Tires

The summary findings were compiled from 156 Scrap Tire Transporter Annual Activity Reports and 101 Scrap Tire Facility and Scrap Tire Storage Site Annual Activity Reports received by March 1, 2021. The discrepancy in the number of reports received and the number of registered entities is due to owner or operators failing to submit timely annual reports and failing to notify the agency of changes in contact information or business operations.

Based on the findings, approximately 50.6 million used and scrap tires were managed in Texas in 2021. For this report, TCEQ considers one scrap tire unit equivalent to weigh 20 pounds, regardless of size. The main use or disposition avenues in Texas for whole used and scrap tires include the following broad categories: tire-derived fuel (TDF) source, landfill disposal, crumb rubber production, other beneficial use, use in LRPUT, and other recycling. The breakdown of the different types of end-uses and their corresponding number of scrap tire units utilized is presented in *Table 2. End-Use Types and Quantities of Tires Used in 2021*. The total number of tires for each broad category over a five-year period are shown in *Table 3. End-Use Types by Year from 2017 to 2021*, and the percentages for each broad category over a five-year period are shown in *Figure 1. End-Use Types Utilized by Year from 2017 to 2021*. A discussion for each end-use type begins on page 4.

Table 2. End-Use Types and Quantities of Tires Used in 2021

End-Use or Disposition	Approximate Scrap Tire Units Utilized or Disposed	Percent of Utilization
Tire-Derived Fuel	18,024,479	36%
Crumb Rubber	14,497,329	29%
Landfill	12,537,120	25%
Other Recycling	3,509,605	7%
LRPUT	2,025,484	4%
Other Beneficial Use	41,132	<1%
Total	50,635,149	100%

Table 3. End-Use Types by Year 2017-2021

Year	TDF	Crumb Rubber	Landfill	Other Recycling	LRPUT	Other Beneficial Use	Total
2017	13,558,237	7,806,881	10,720,825	1,944,520	4,103,046	5,615,488	43,748,997
2018	15,599,449	9,816,961	13,875,682	1,595,695	1,956,872	3,045,214	45,889,873
2019	16,335,234	6,526,925	9,220,752	4,470,128	5,115,955	3,116,038	44,785,032
2020	16,357,436	15,699,376	9,415,625	2,677,818	2,582,254	693,760	47,426,269
2021	18,024,479	14,497,329	12,537,120	3,509,605	2,025,484	41,132	50,635,149

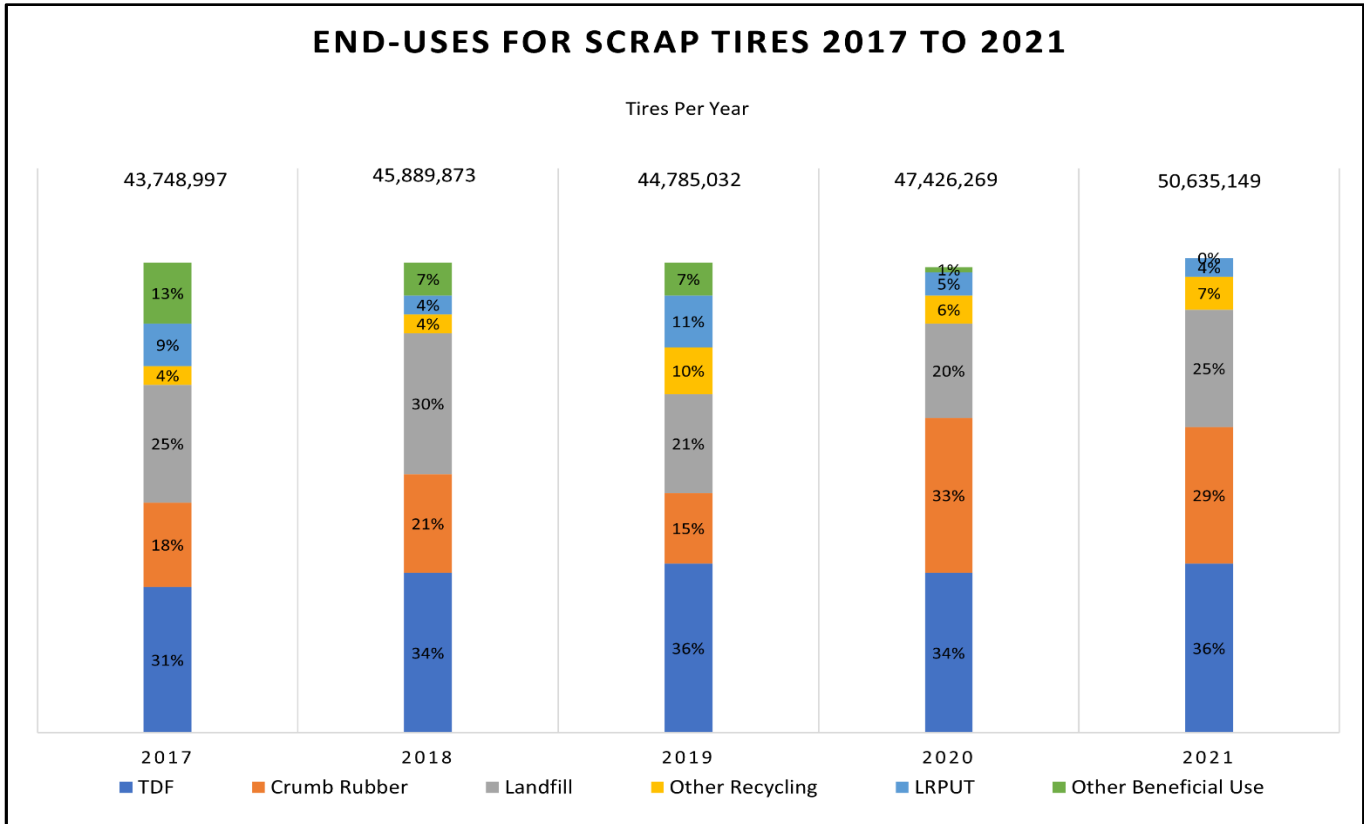


Figure 1. End-Use Types Utilized by Year from 2017 to 2021

Tire-derived fuel

The highest use of used and scrap tires is for energy recovery and use as a fuel source. Tire-derived fuel accounted for 18 million (36%) of the 50.6 million tires managed at six of the eight energy-recovery facilities with active registrations located in Texas. Approximately one million additional tires were transported outside the state for use as tire-derived fuel.

Crumb rubber

Approximately 14.5 million (29%) of used and/or scrap tires were used to produce crumb rubber. To produce crumb rubber, steel and tire cord are removed and the tire shreds are ground to a granular consistency either with the aid of cryogenic or mechanical means to reduce the size of the particles. Rubberized asphalt is the largest market for crumb rubber. Crumb rubber can be blended into asphalt and used in various roadway projects. Crumb rubber is also used as an infill for synthetic turf fields and as feedstock to produce new products.

Landfill disposal

Approximately 12.5 million (25%) of the used tires and scrap tires generated or managed in Texas were disposed of in municipal solid waste landfills. TCEQ regulations specify that tires be split, quartered, or shredded before they are disposed of in a landfill. Scrap tire storage or processing activities at a landfill are authorized through the landfill's municipal solid waste permit.

Other recycling

Of the 50.6 million tires managed in 2021, approximately 3.5 million (7%) tires were recycled. A tire is considered recycled when it has been collected, separated, or processed and returned to use in the form of raw materials in the production of new products.

LRPUTs

Approximately 2 million (4%) of the used and scrap tires generated or managed in Texas during 2021 were used for land reclamation at locations authorized by TCEQ. Approved projects restore land to its approximate natural grade to prepare or reclaim the land for reuse.

Other beneficial uses

Other beneficial use of tires accounted for approximately 40,000 (less than 1%) of the used and scrap tires utilized during 2021 in Texas. Beneficial uses in 2021 included construction rings (tire ring base for traffic barrel drums) and agriculture uses (e.g., water and feed troughs).

TCEQ Scrap Tire Program Funding

Currently, there is no dedicated funding for the scrap tire program. There is no application fee for obtaining a scrap tire registration. Presently, the scrap tire management activities operate under a free-market system. Tire dealers set their own fees to cover their administrative and tire disposition costs.

The cleanup of tire sites is addressed using financial assurance funds posted by the registration holder (for registered scrap tire storage sites) or through supplemental environmental projects, administered by the TCEQ Office of Compliance and Enforcement and/or the Office of Legal Services.

Activities of the TCEQ Scrap Tire Program

In 2020, TCEQ published the *Five-Year Plan for Scrap Tire Management in Texas*. The plan outlines strategies for proper handling, storage, use, and disposal of scrap tires; identifies challenges for scrap tire management; and established goals to improve scrap tire management in Texas. Activities related to the five-year plan are presented in annual report summaries. The five-year plan and previous annual report summaries are available on the [TCEQ Used and Scrap Tire Management webpage](#).

Scrap Tire Workshop in 2021

The [Five-Year Plan for Scrap Tire Management in Texas](#) details goals to develop and coordinate partnerships with scrap tire handlers, and state and local agencies. In line with that, the TCEQ Scrap Tire Program collaborated with the U.S. Tire Manufacturers Association (USTMA) to host a virtual scrap tire workshop on May 12, 2021.

The workshop included presentations by experts from existing scrap tire markets in Texas. Industry professionals presented on tire derived fuel, crumb rubber production and uses, land reclamation projects using tires, scrap tire processing and recycling, rubber modified asphalt, and porous pavement. Over 180 engaged stakeholders from local governments and the scrap tire industry participated in the workshop.

Updated Outreach Materials for Local Governments

In 2021, the TCEQ Scrap Tire Program updated two reference guides for local governments to distribute to scrap tire transporters and scrap tire generators. RG-510 provides requirements for scrap tire transporters and RG-513 provides requirements for scrap tire generators. The reference guides are available for download on the [TCEQ Used and Scrap Tire Management webpage](#).

TCEQ's Role in Monitoring Scrap Tire Activities and Enforcing Regulations

TCEQ regional offices monitor scrap tire management activities in the state and evaluate compliance with TCEQ rules. The TCEQ Office of Compliance and Enforcement conducts enforcement actions against violators. The existing provisions for administrative and civil penalties for violating the Texas Health and Safety Code, Chapter 361, and corresponding TCEQ rules, are in Texas Water Code, Chapter 7. TCEQ's efforts focus on ensuring proper management of scrap-tire related activities, including the prevention of unauthorized disposal of tires.

Challenges of Managing Scrap Tires

TCEQ has made significant efforts towards addressing scrap tire management issues and in reducing the number of unauthorized stockpiles of scrap tires in Texas. Registration and regulatory requirements are designed to facilitate the safe management of tires and minimize adverse impacts to human health and the environment.

Ongoing challenges and opportunities for future progress include:

- funding cleanup efforts for existing and newly created tire stockpiles;
- expanding existing markets or developing new markets and end-users, including transportation-related uses;
- minimizing illegal dumping of scrap tires; and
- improving compliance with TCEQ scrap tire regulations.

Scrap Tire Sites in Texas

TCEQ maintains a list of known unauthorized scrap tire sites in the state. The locations of these sites are shown in *Figure 2. Unauthorized Scrap Tire Sites in Texas*, along with information on the approximate quantity of tires. The number of tires at such sites ranges from a few hundred to a few million, for a total of approximately 12.2 million tires across 117 sites. In 2021, approximately 254,650 tires were removed from 11 unauthorized sites, with cleanup continuing at one site.

Scrap tire sites can broadly be categorized as:

- New, generally small, unauthorized scrap tire piles that are reported to TCEQ; and
- Legacy, generally large, well-documented scrap tire piles that may have been registered at one time.

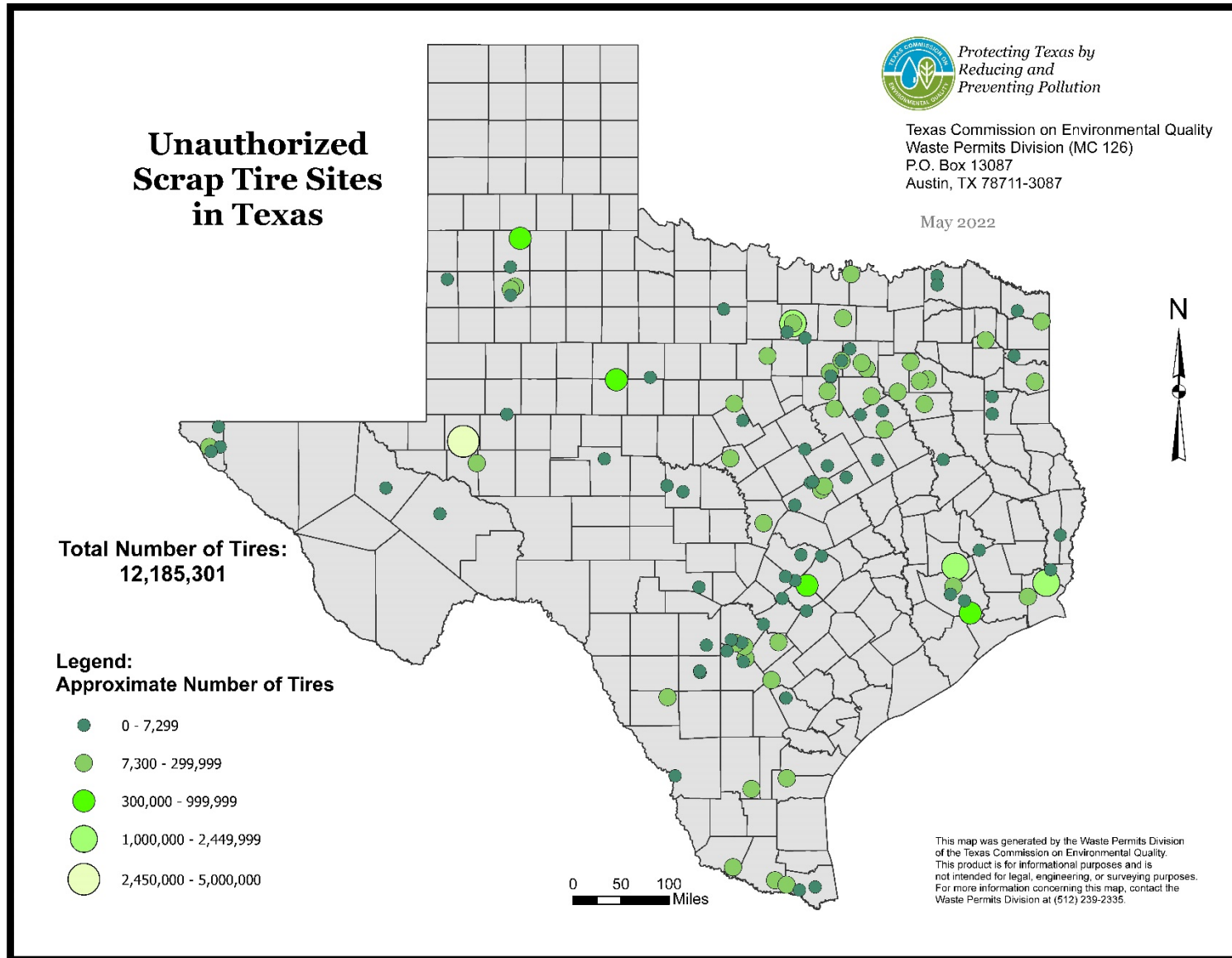


Figure 2. Unauthorized Scrap Tire Sites in Texas