

Septic Systems / OSSFs A Nuisance or an Asset?

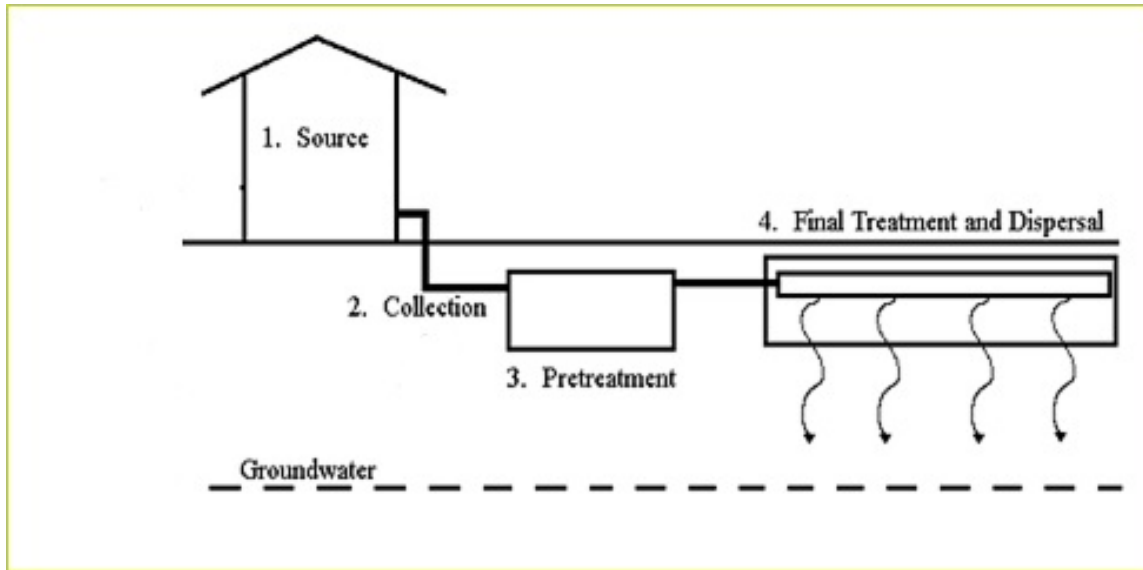
Anish Jantrania, Ph.D., P.E., MBA
Associate Professor and Extension Specialist
Texas A&M AgriLife Extension and Research
Department of Biological and Agricultural Engineering

Agenda

- Septic Systems / OSSFs 101;
- OSSFs Types/Choices and Trends;
- Rules/Permitting Entities (Authorized Agents);
- OSSFs a Nuisance or an Asset?;
- TAMU Education, Training, and Research Programs; and
- Open Discussion.

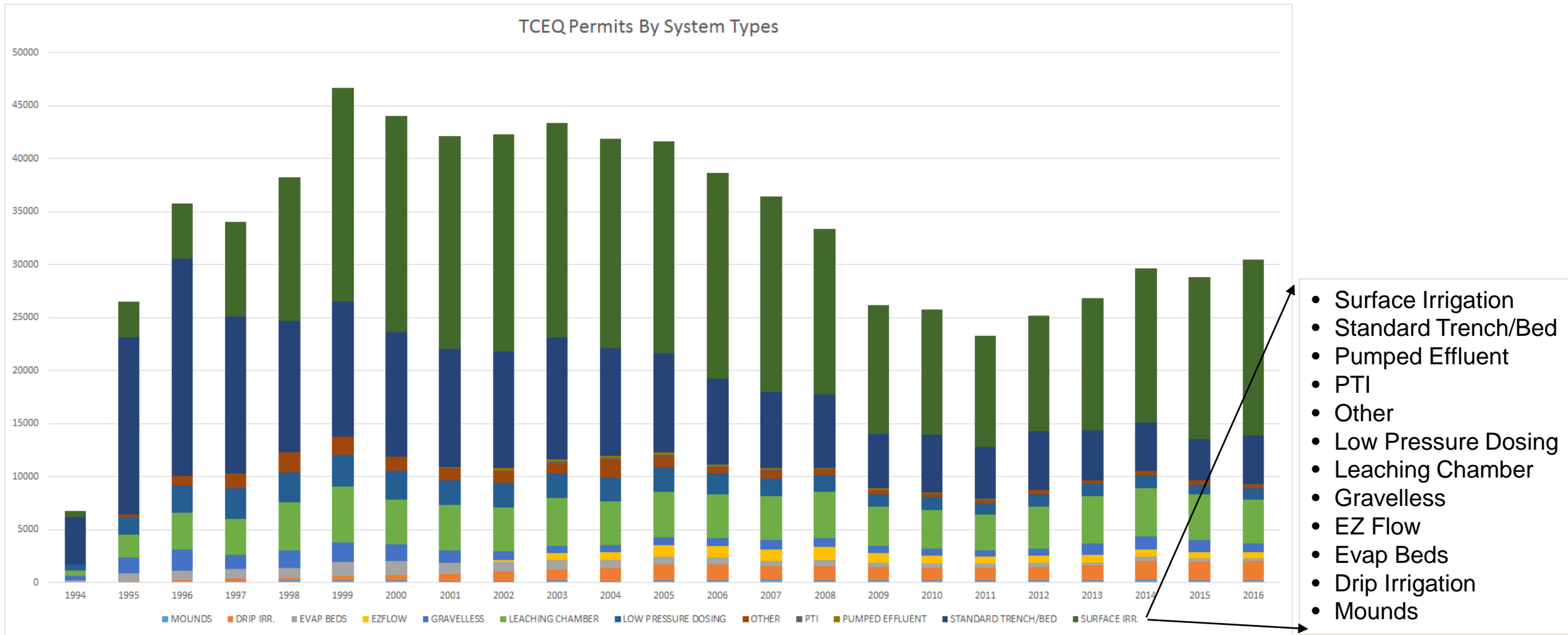
Septic System / OSSF 101

Onsite wastewater treatment and disposal systems for homes and businesses in areas where connection to a centralized sewer and treatment system is NOT available;



- Most common Pretreatment = Septic Tank/ATU; and
- Most common Final Treatment and Disposal = Drainfield/Spray.

Trend in OSSF System Types in Texas



This information was compiled from OARS data from TCEQ.

AgriLife Publication B-6077 (S)

On-site wastewater treatment systems

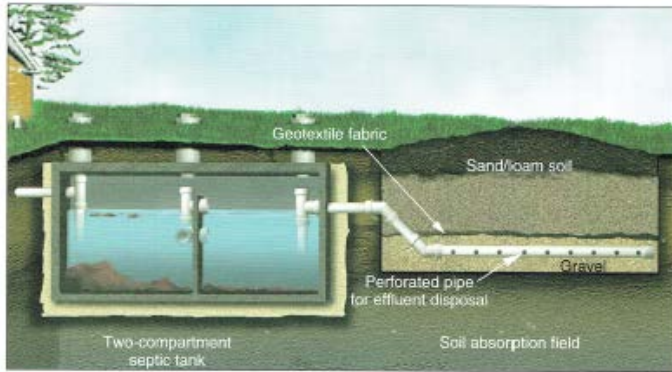


Figure 1: A septic tank and soil absorption field system.

Selecting and permitting

Bruce Lesikar

Extension Agricultural Engineer
The Texas A&M University System

About 50,000 on-site wastewater treatment systems are installed annually in Texas to treat wastewater from rural and suburban homes as well as from small businesses. An on-site wastewater treatment system collects, treats and applies wastewater to the soil.

By definition, wastewater managed by an on-site system cannot leave the property where it is generated. The water can evaporate into the air, transpire through plants or move through the soil to groundwater. An effective on-site system removes wastewater from the home, treats and distributes the wastewater, and protects our water resources.

Selecting the appropriate system for the site conditions is critical to the system's success. If you select the wrong system or design, or install, operate or maintain the system improperly, it can fail, which could result in pollution of your property and that of others. You could also be fined.

Because homeowners are responsible for conducting or contracting for

maintenance of a system, they should be involved in selecting the technology, or type of system used.

State regulations

In 1987, the Texas legislature passed a law (HB 1873) to regulate on-site sewage facility (OSSF) systems statewide. The law called for regional and local governments — such as counties, cities, river authorities and special districts — to implement and enforce on-site sewage regulations with approval and oversight by the Texas Commission on Environmental Quality (TCEQ).

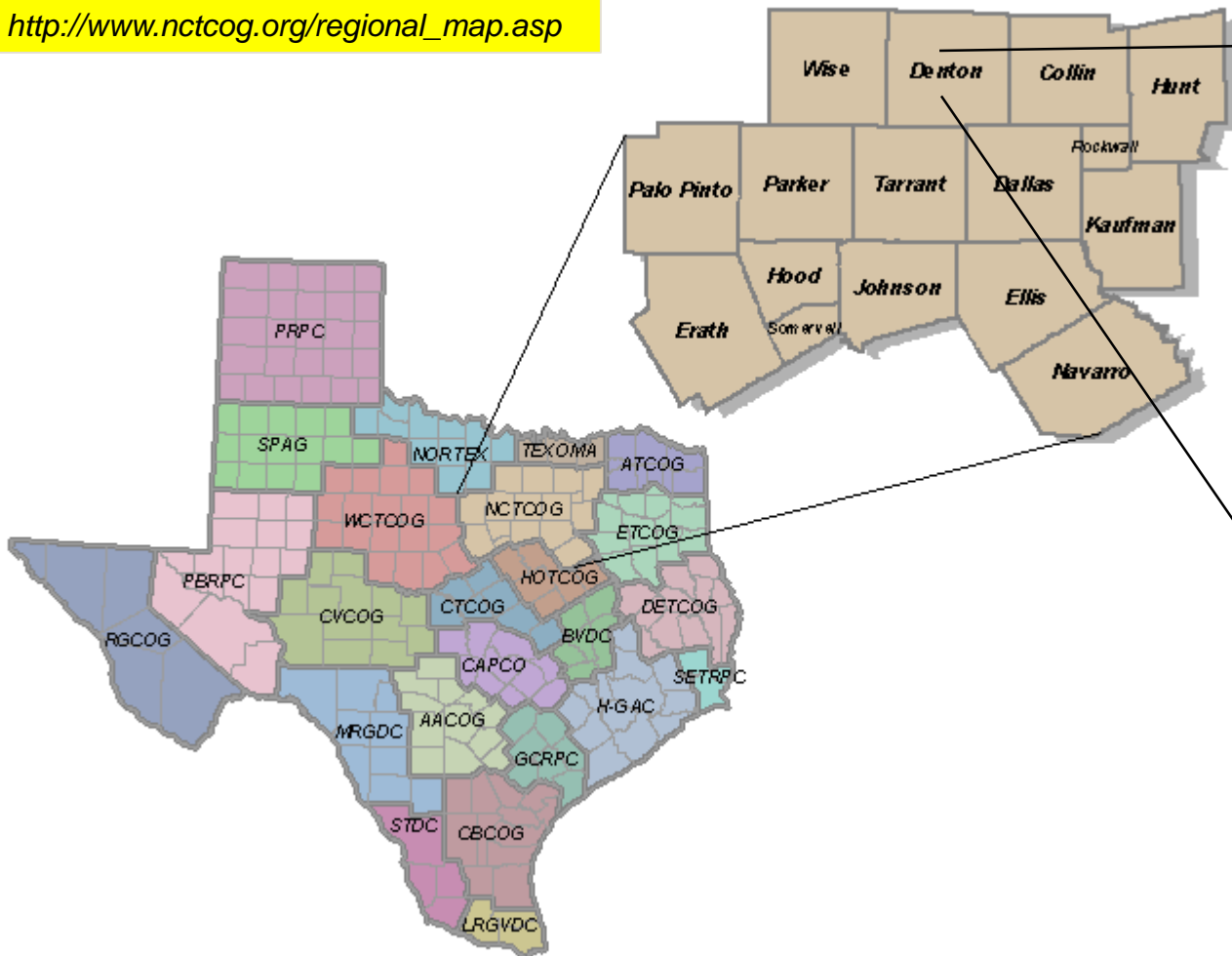
Soil conditions	Distribution systems								
	Standard drain field ^A	Low-pressure distribution	Subsurface drip distribution	Spray distribution ^B	Mound system	ET bed ^C	Soil substitution drain field	Pumped effluent drain field	
Soil type ^D	Ia	No	No ^B	No ^B	Yes	Yes	Yes (lined only)	Yes	No
	Ib	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	II	Yes ^H	Yes ^H	Yes ^H	Yes	Yes ^H	Yes	Yes ^H	Yes ^H
	III	Yes ^H	Yes ^H	Yes ^H	Yes	Yes ^H	Yes	Yes ^H	Yes ^H
	IV	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Depth of good soil (type Ib, II, III) below application depth	2 or more feet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	1 foot	No	Yes	Yes	Yes	Yes ^F	Yes (lined only)	Yes ^E	Yes
	Less than 1 foot	No	No	Yes ^B (6 inches)	Yes (must support vegetation)	Yes ^F	Yes (lined only)	Yes ^E	No
Groundwater depth below application depth	2 feet or more	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	1 foot	No	No	Yes ^B	Yes	Yes ^F	Yes (lined only)	No	No
	Less than 1 foot	No	No	No	Yes	Yes ^F	Yes (lined only)	No	No
Soil surface slope	0-30%	Yes ^I < 30%	Yes	Yes	Yes ^G	≤10%	Yes	Yes	≤ 2%
	Over 30% or complex slopes	No	Yes	Yes	Yes ^G	No	No	No	No

<http://ossf.tamu.edu/educational-materials-2/>

NCTCOG – OSSF Permitting Maze

http://www.nctcog.org/regional_map.asp

<https://www6.tceq.texas.gov/oars/index.cfm?fuseaction=search.county>

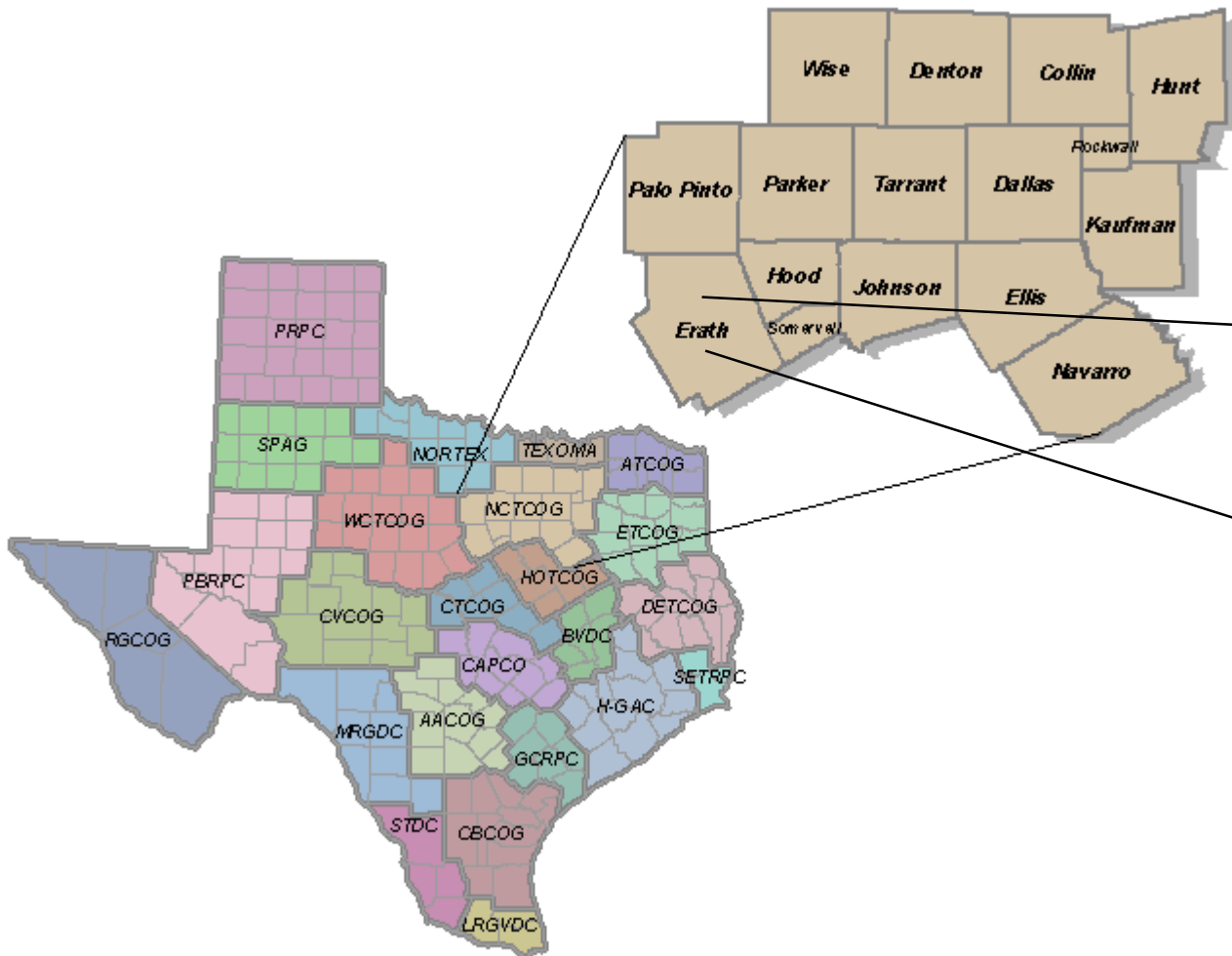


Search Results

Authorized Agent	Area Served
DENTON COUNTY AUTHORIZED AGENT	Denton County
CITY OF DENTON AUTHORIZED AGENT	
TOWN OF FLOWER MOUND AUTHORIZED AGENT	
CITY OF ARGYLE AUTHORIZED AGENT	
TOWN OF LITTLE ELM AUTHORIZED AGENT	
TOWN OF BARTONVILLE AUTHORIZED AGENT	
TOWN OF HICKORY CREEK AUTHORIZED AGENT	
TOWN OF SHADY SHORES AUTHORIZED AGENT	Town of Shady Shores
CITY OF KRUGERVILLE AUTHORIZED AGENT	
CITY OF KRUM AUTHORIZED AGENT	
TOWN OF DOUBLE OAK AUTHORIZED AGENT	
CITY OF FRISCO AUTHORIZED AGENT	
TOWN OF CROSS ROADS AUTHORIZED AGENT	
CITY OF OAK POINT AUTHORIZED AGENT	
TOWN OF PONDER AUTHORIZED AGENT	
TOWN OF NORTHLAKE AUTHORIZED AGENT	
TOWN OF DISH AUTHORIZED AGENT	
REGION 04 - DFW METROPLEX	

NCTCOG – OSSF Permitting Maze

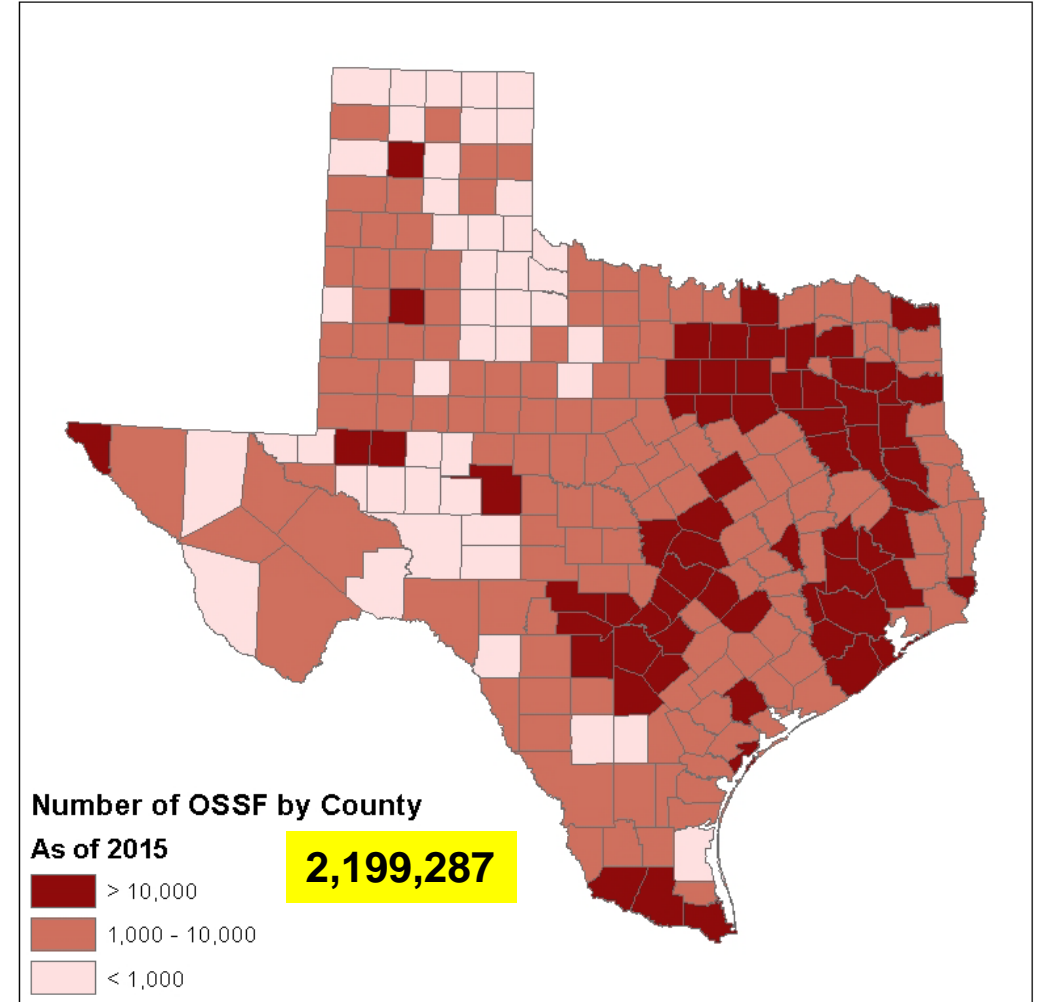
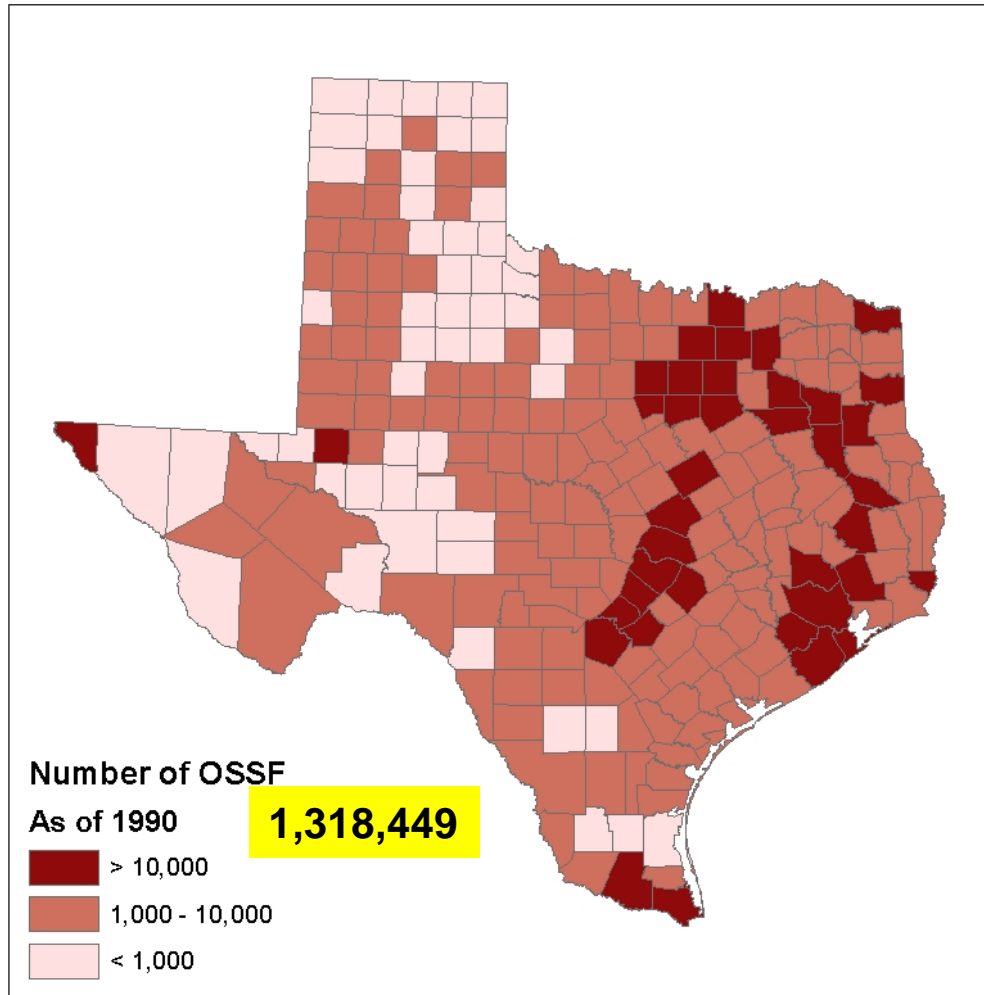
<https://www6.tceq.texas.gov/oars/index.cfm?fuseaction=search.county>



Search Results

Authorized Agent	Area Served
ERATH COUNTY AUTHORIZED AGENT	Erath County
REGION 04 - DFW METROPLEX	

OSSF Count then and now...



OSSF an Asset or a Nuisance...

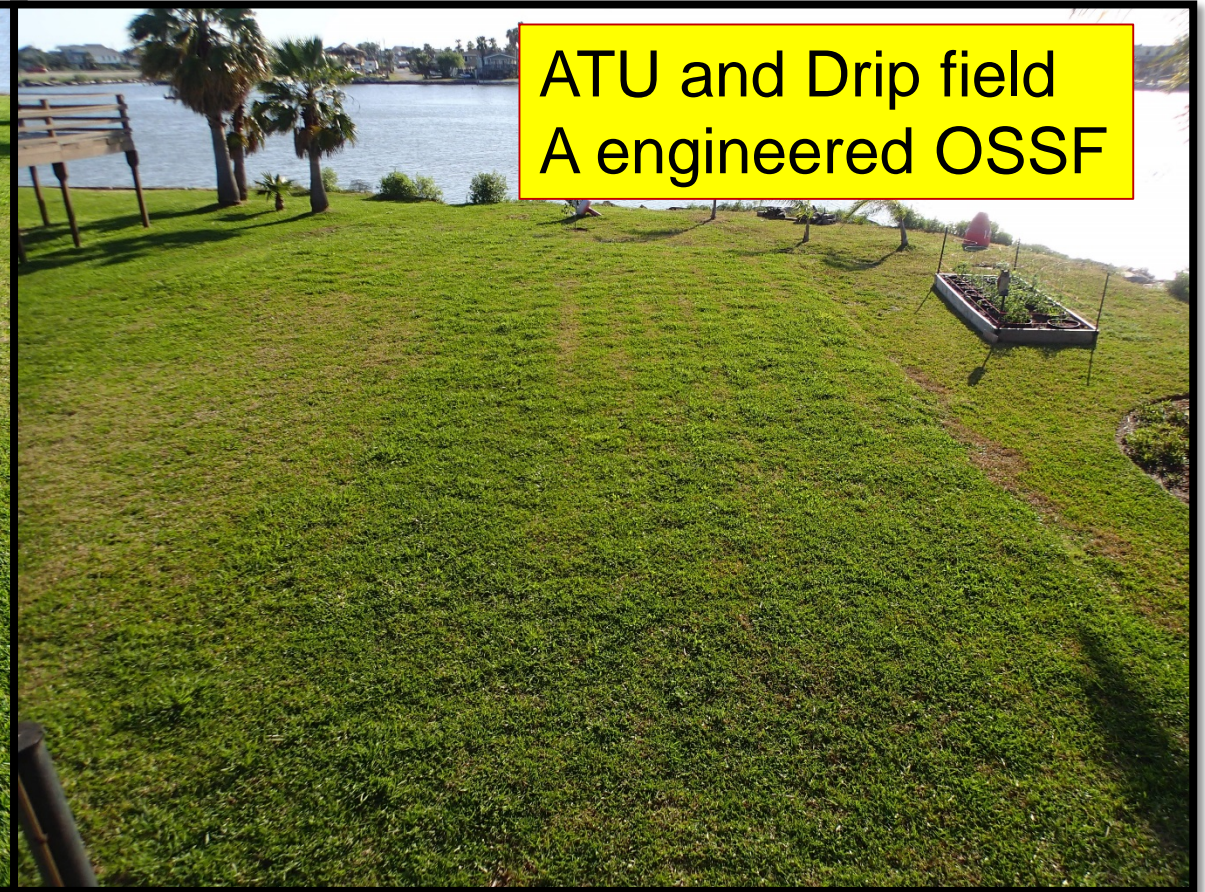


Septic tank drainfield
A conventional OSSF

OSSF an Asset or a Nuisance...



OSSF an Asset or a Nuisance...



ATU and Drip field
A engineered OSSF

OSSF an Asset or a Nuisance...



ATU and Spray field
Very popular in TX...

OSSF Challenges (Nuisance)...

- Improper design (miss-fit for a site and/or for an user);
- Poor installation;
- Inadequate or no maintenance.



OSSFs: On-Site Sewage Facilities Program

We offer services in the following areas:

- **Education & Training** – homeowners, licensed professionals, and policy makers; in-person and e-learning;
- **Research & Demonstration** – center for bench and field scale research; performance testing, and demonstration;
- **Inventory & Mapping** – OSSF count and moving towards Geolocation with permit and operation information....



Education & outreach: Workshops

- ◎ Intro to Septic Systems
 - ◎ 2 hour workshop
 - ◎ How to live with a septic system
 - ◎ PowerPoint with visual aids

- ◎ Homeowner Maintenance of ATUs
 - ◎ 6 hour class
 - ◎ Manual: “Checking my Aerobic System”



Continuing Education Units (CEUs) Programs

- Overview of Advanced WW Treatment Systems
 - 8 hour workshop
 - Treatment, Disposal, and Reuse Technologies
 - PowerPoint with video and other visual aids
 - Tour of Training Center
- “High Strength” Class
 - 16 hour class
 - Manual: “Analyzing WW Treatment Systems”



Hands-on Education, Research, and Demonstration Center @ RELLIS Campus



Hands-on Education, Research, and Demonstration Center @ RELLIS Campus



TAMU – OSSF Team Contacts

Anish Jantrania

Associate Professor & Extension Specialist

(254) 774-6014

ajantrania@tamu.edu

ossf.tamu.edu

Ryan Gerlich

Extension Program Specialist

(979) 458-4185

rgerlich@tamu.edu

THANK YOU.

