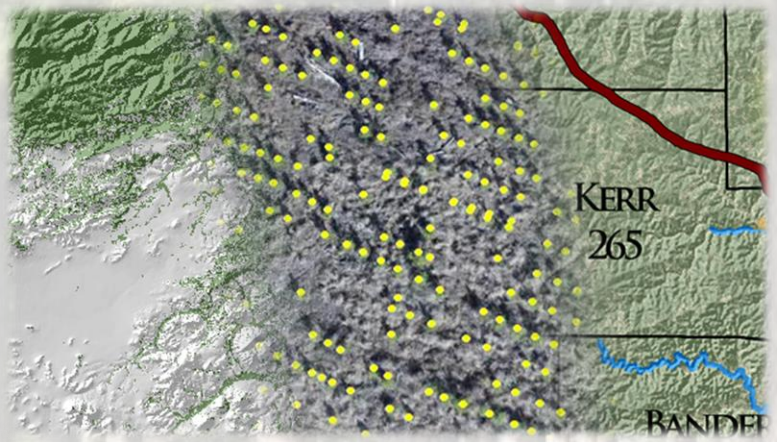
Technology in Working Forests

Rebekah Zehnder and Shruthi Srinivasan

TEXAS A&M FOREST SERVICE



TEXAS A&M FOREST SERVICE

Texas Forest Information Portal

Home Contact Sign Up

Show All | Forest Management | Forest Products | **Special Trees and Forests** | Community Forestry | Landowner Tools | Featured Apps

Big Tree Registry

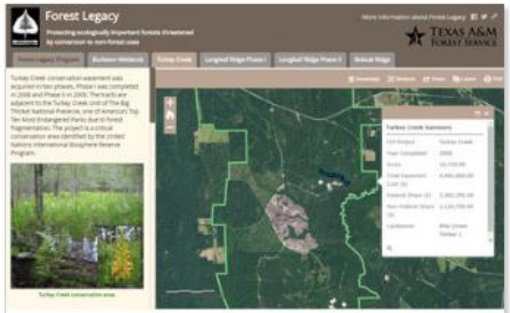
The Big Tree Registry is a list of the largest known specimens of each Texas tree species. This application displays tree measurements and photos as well as public tree locations.

Special Trees

Texas State Forests and Arboretums

Tour through the state forests and arboretums managed by Texas A&M Forest Service that serve as educational resources for Texans and visitors. View interactive maps and compelling mulitmedia.

Special Forests



Forest Legacy

Texas is under threat of losing much of its working forests to non-forest uses. Learn more about the ecologically important forests protected by the Forest Legacy Program.

Special Trees

Famous Trees of Texas

If Texas' trees could speak, what stories they would tell—stories of love, honor, mystery, justice and injustice. Learn more about Texas history and the connection of people and trees through time.

Special Trees

Tree Trails

Tree Trails is a conservation education project to enhance outdoor classrooms at schools, nature centers and public parks. The project creates an education trail focused on trees.

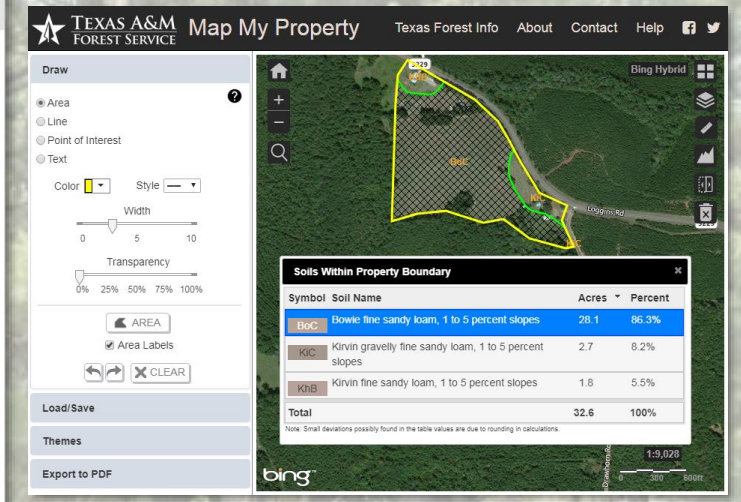
Community Forestry, Spec Trees

Wildfire and Restoration in Bastrop

Bastrop is no stranger to the devastation that wildfire can bring to a community. Tour through the story of Bastrop wildfire, restoration and more with interactive maps and compelling multimedia.

Special Forests

Featured Apps



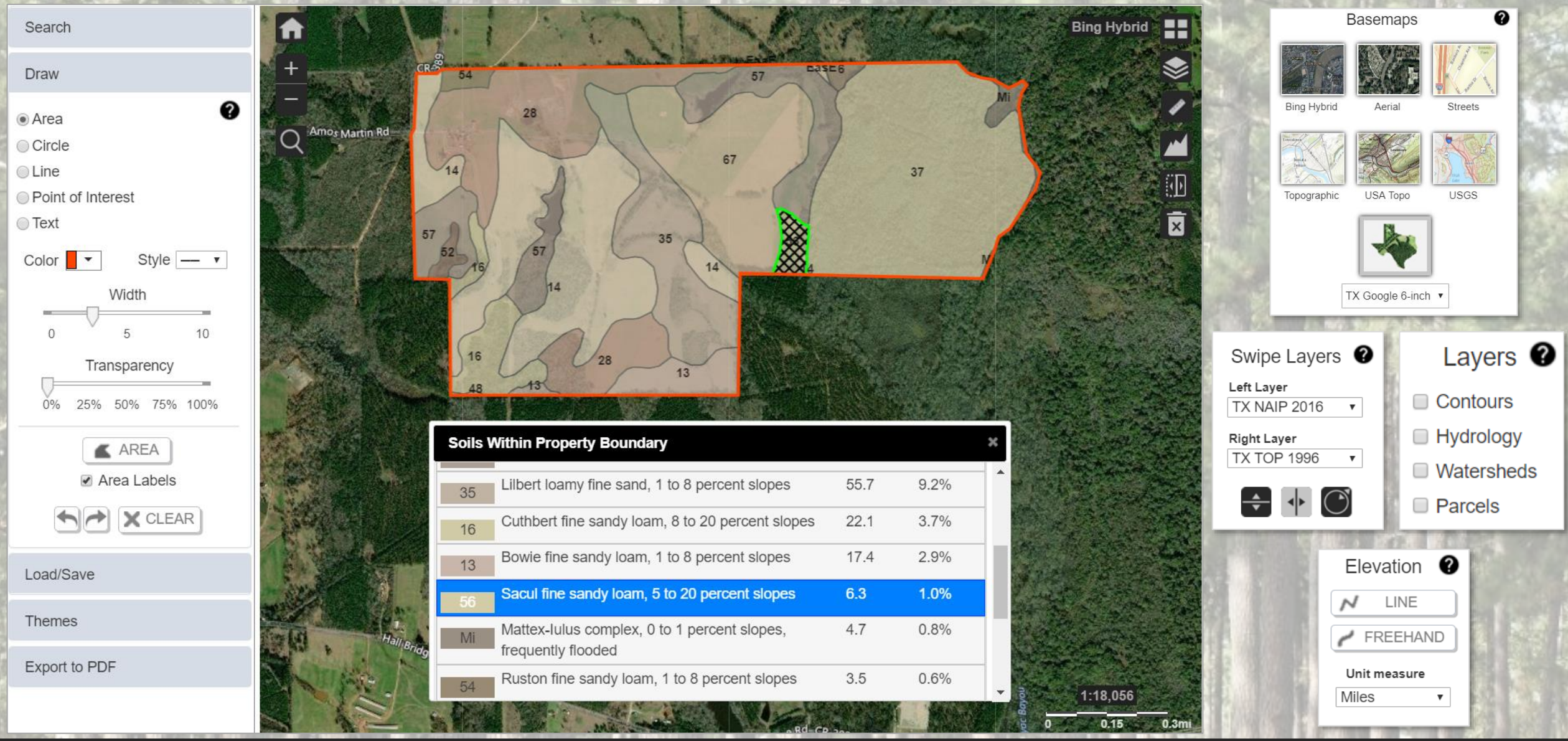
My Land Management Connector

- SIGN IN / SIGN UP
- FIND SERVICE PROVIDER
- FIND TFS FORESTER
- LAND MANAGEMENT INFO
- TREE CARE INFO
- CONTACT

TEXAS A&M FOREST SERVICE

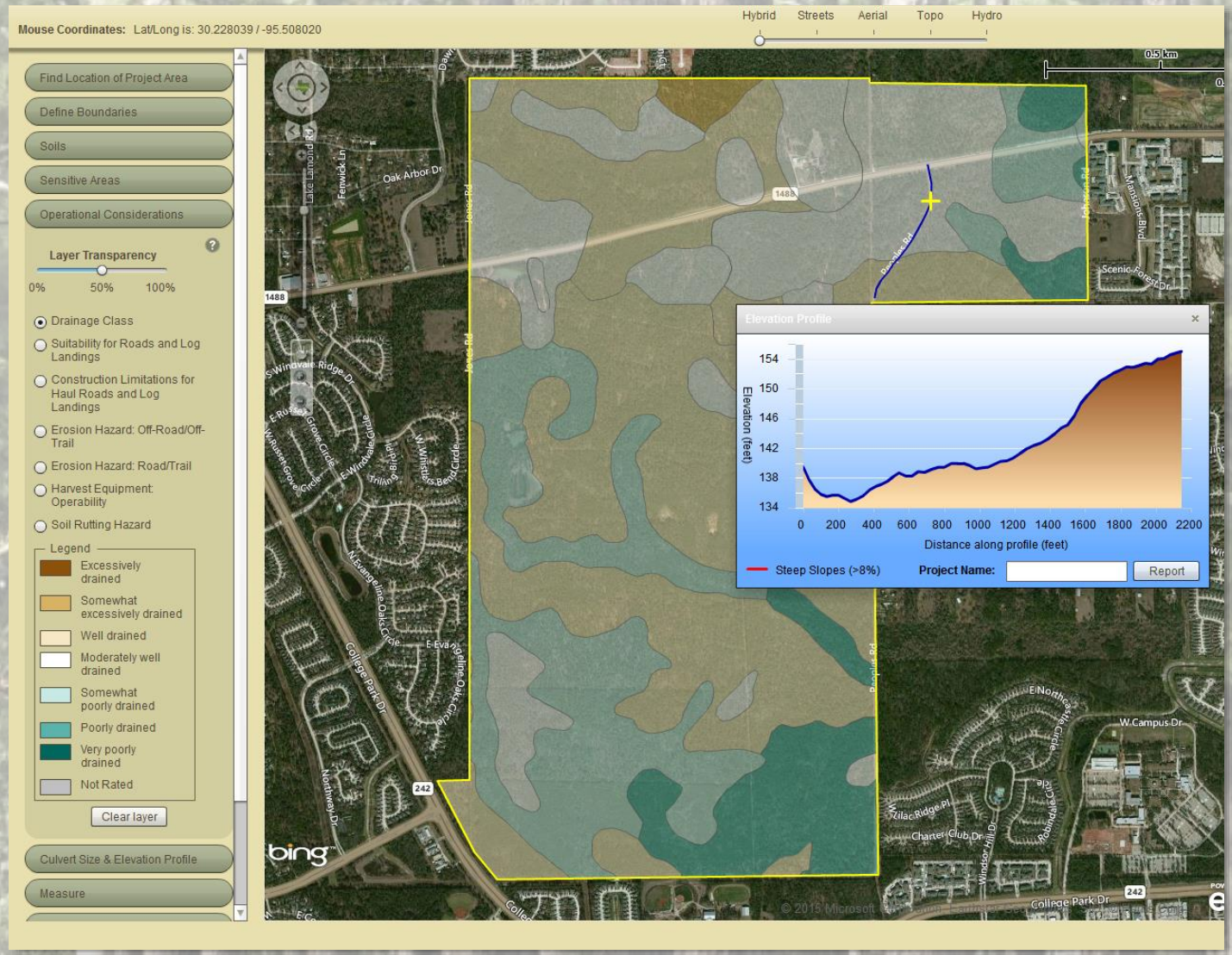
texasforestinfo.com

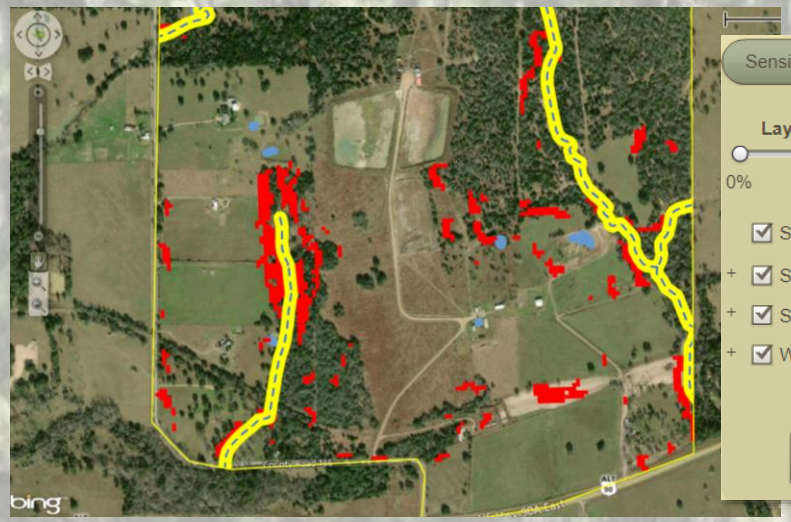
Map My Property



Map My Property provides landowners and other interested users a quick and simple tool for making a map of their property that can be shared with others. The app is now responsive and soil coverage is nationwide.

Plan My Land Operation





This app allows users to map their project area, identify sensitive areas, determine operational characteristics of mapped soil types and calculate the watershed area.

My Land Management Connector

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LAND MANAGEMENT INFO

TREE CARE INFO

CONTACT

TEXAS A&M FOREST SERVICE

← Check a Credential

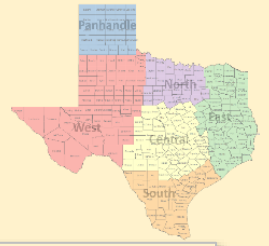
ACF - MEMBER ASSOCIATION OF CONSULTING FORESTERS	CERTIFIED ARBORIST INTERNATIONAL SOCIETY OF ARBORICULTURE	CERTIFIED ENVIRONMENTAL PROFESSIONAL ACADEMY OF BOARD CERTIFIED ENVIRONMENTAL PROFESSIONALS
CERTIFIED ENVIRONMENTAL SCIENTIST NATIONAL REGISTRY OF ENVIRONMENTAL PROFESSIONALS	CERTIFIED FORESTER SOCIETY OF AMERICAN FORESTERS	CERTIFIED NATURAL RESOURCES PROFESSIONAL NATIONAL REGISTRY OF ENVIRONMENTAL PROFESSIONALS
LANDSCAPE IRRIGATORS LICENSE TEXAS COMMISSION ENVIRONMENTAL QUALITY	LICENSED PESTICIDE APPLICATOR TEXAS DEPARTMENT OF AGRICULTURE	LICENSED REAL ESTATE BROKER/APPRAISER
PRIVATE CERTIFIED & INSURED BURN MANAGER TEXAS DEPARTMENT OF AGRICULTURE	PROFESSIONAL WETLAND SCIENTIST SOCIETY OF WETLAND SCIENTISTS	REGISTERED CONSULTING ARBORIST AMERICAN SOCIETY OF CONSULTING ARBORISTS
REGISTERED PROFESSIONAL LAND SURVEYOR THE STATE OF TEXAS	TEXAS ACCREDITED FORESTER TEXAS FORESTRY ASSOCIATION	TEXAS OAK WILT QUALIFIED TEXAS ISA

Provider Type (0 selected)

- [ ] Environmental Scientist
- [ ] Professional Arborist
- [ ] Professional Forester
- [ ] Vendor
- [ ] Wildlife Biologist

Region (0 selected)

- [ ] East Texas
- [ ] South Texas
- [ ] Central Texas
- [ ] North Texas
- [ ] West Texas
- [ ] Panhandle



Timber Harvesting

Azimuth Forestry Services, Inc
Suzanne Birmingham Walker
14671 State Hwy 87 South
Shelbyville, Texas 75973

Provider Type: Professional Arborist, Professional Forester

Credentials Holder: Suzanne Birmingham Walker

Credentials: American Society of Consulting Arborists, Association of Consulting Foresters, ISA Certified Arborist

Contact information:
936-275-2265
swalkerafs@hughes.net

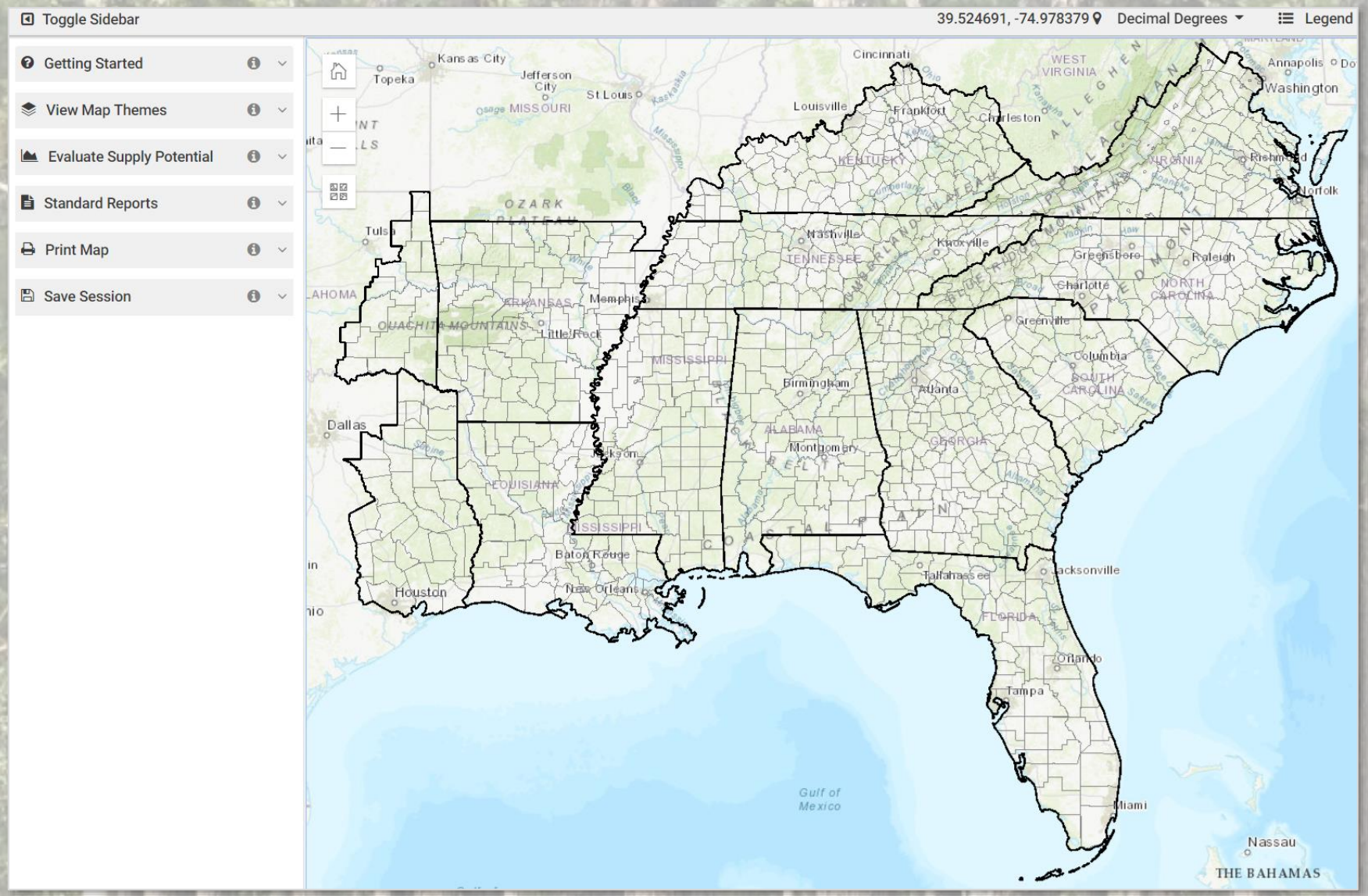
Services Provided (0 selected)

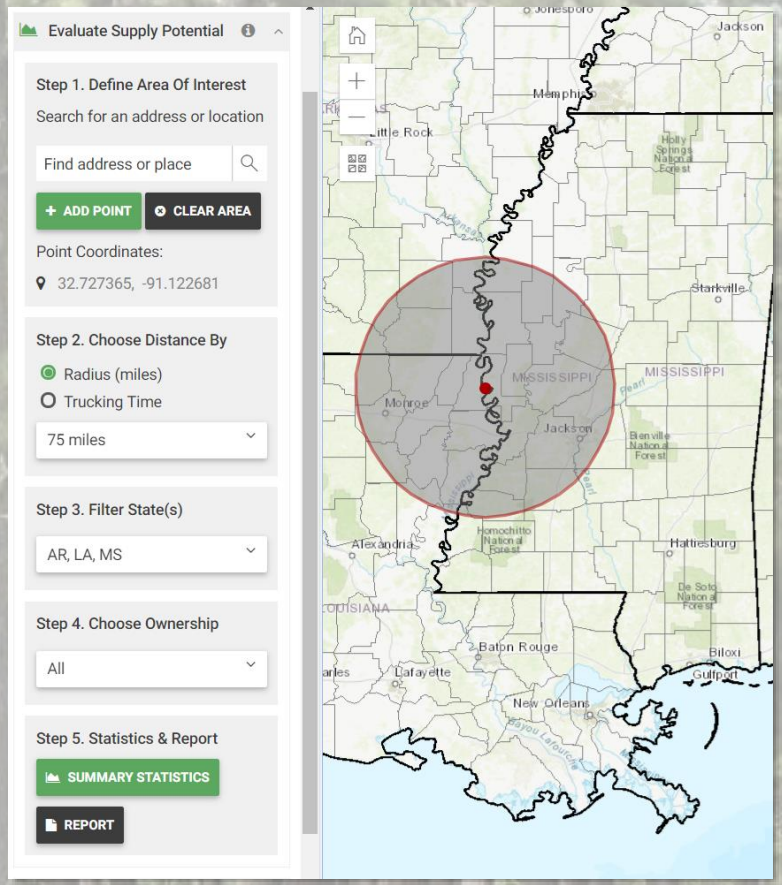
Service(s) Needed (check all that apply):

- [ ] Boundaries, Fences & Gates
- [ ] Brush Management
- [ ] Consulting
- [ ] Delineation
- [ ] Disease/Insect Management
- [ ] Educational Signs
- [ ] Electro-fishing Survey
- [ ] Estate/Tax Planning
- [ ] Fertilization
- [ ] Grazing Management
- [ ] Herbicide
- [ ] Hydro-seeding
- [ ] Invasive Species Management
- [ ] Irrigation
- [ ] Land Appraisal
- [ ] Land Brokerage

This app helps landowners find land management service providers, assists service providers in aggregating land management services, and works for any size property.

Timber Supply Analysis





Coming soon...

The Timber Supply Analysis application provides estimates of timberland area and timber volume, growth, and removals within a user-defined area.

eLIBRARY

tfsweb.tamu.edu/elibrary

Show by Topic

- Best Management Practices (BMPs)
- Biomass
- Disasters & Timber Damage
- Ecosystem Services
- Fire
- Fire Department Assistance
- Forest Economics
- Forest Health
- Forest Inventory and Analysis (FIA)
- **Forest Management**
- Forest Ownership
- Mitigation and Prevention
- Recreation
- Reforestation
- Resource Analysis
- Stewardship
- Taxes
- Timber Harvesting
- Timber Prices
- Tree Improvement
- Trees
- Urban and Community Forestry
- Water
- Wildland Urban Interface
- Wildlife
- Windbreaks
- Wood

Refine by Year

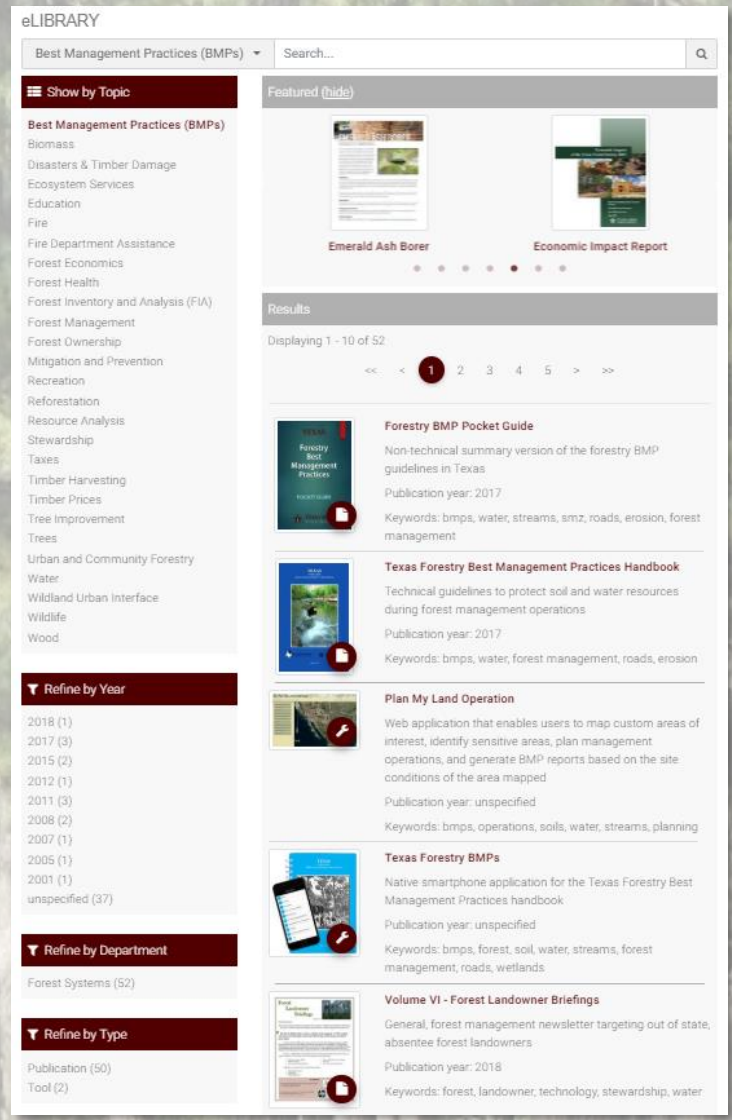
- 2018 (2)
- 2017 (7)
- 2016 (3)
- 2015 (2)
- 2014 (3)
- 2013 (4)
- 2012 (3)
- 2011 (2)
- unspecified (69)

Refine by Department

- Central Texas / West Texas Operations (1)
- East Texas Operations (5)
- Forest Analytics (16)
- Forest Systems (71)
- Mitigation and Prevention (2)

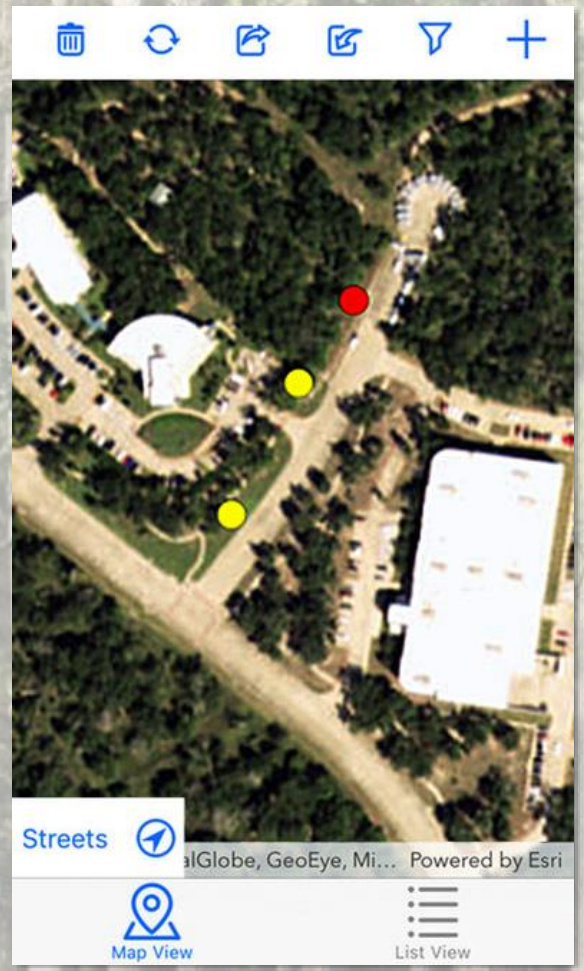
Refine by Type

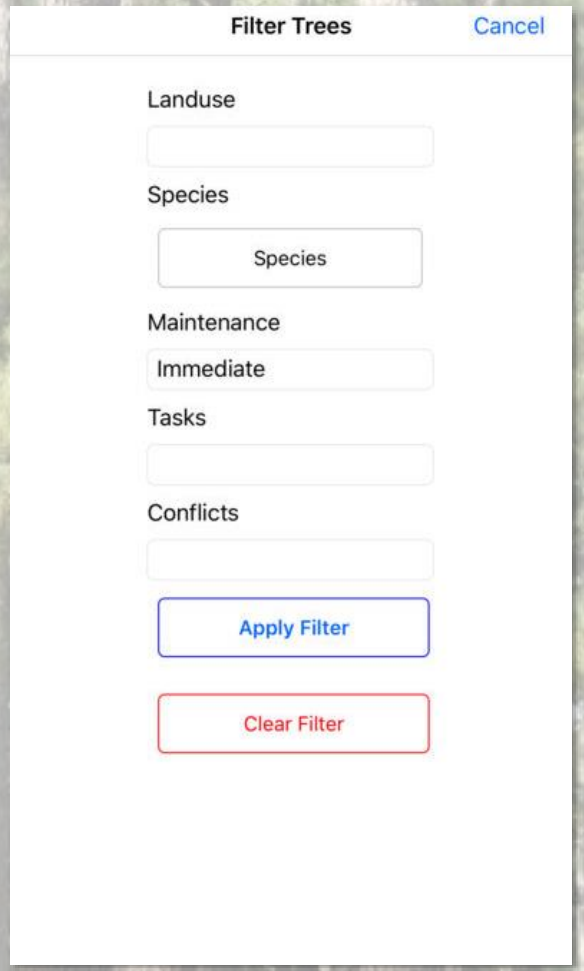
- Publication (93)
- Tool (2)

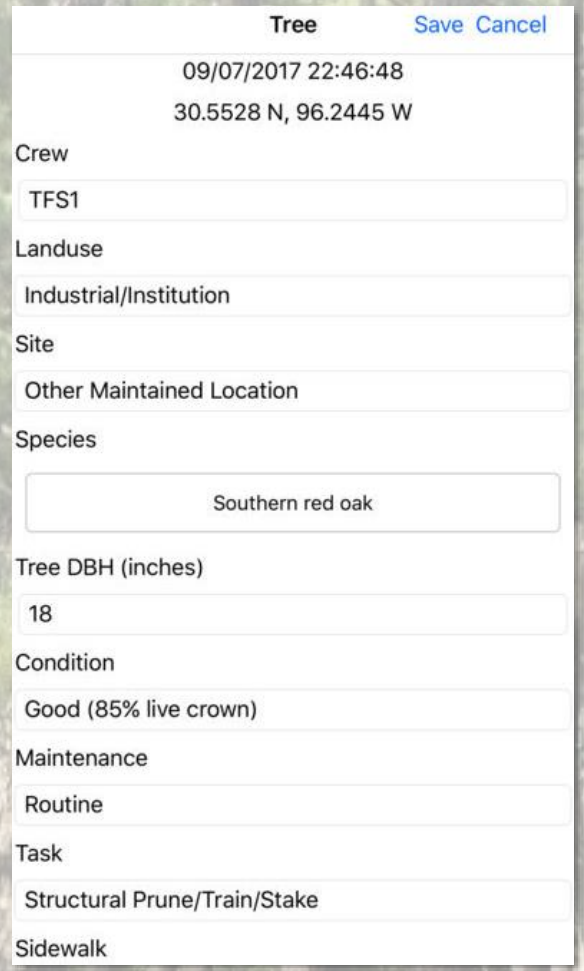


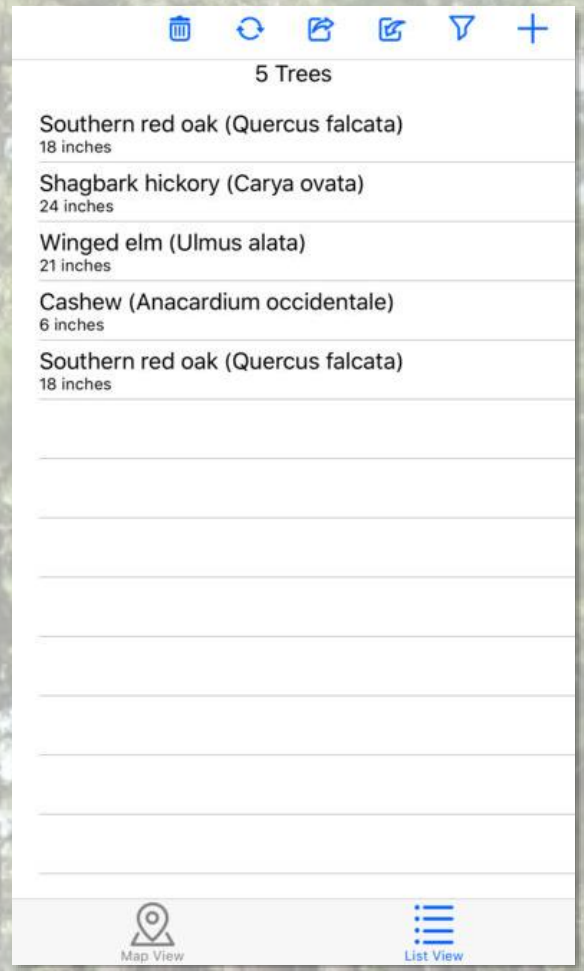
The new eLIBRARY is a repository of TFS publications and resources.
You can browse information by topic or search to find specific information.

Trees Count



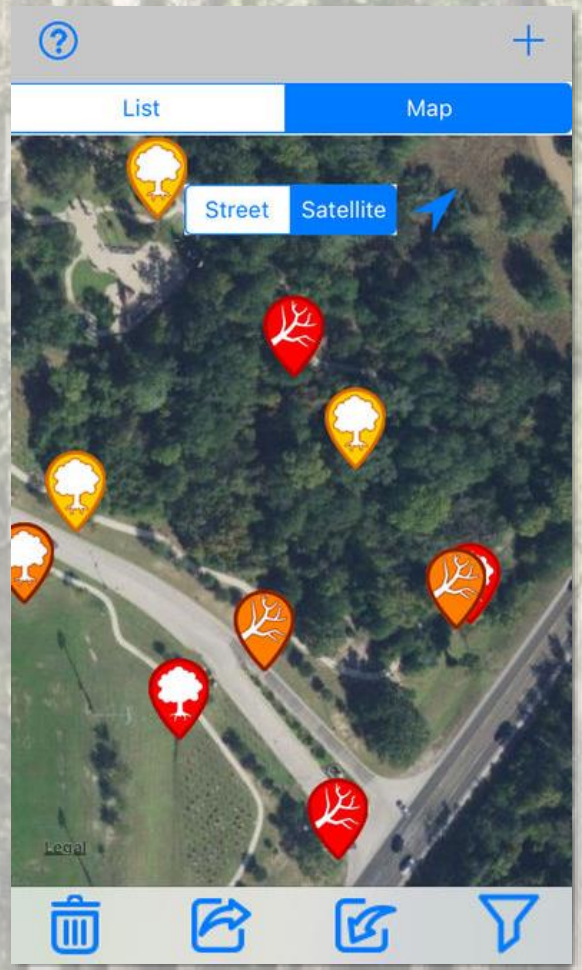


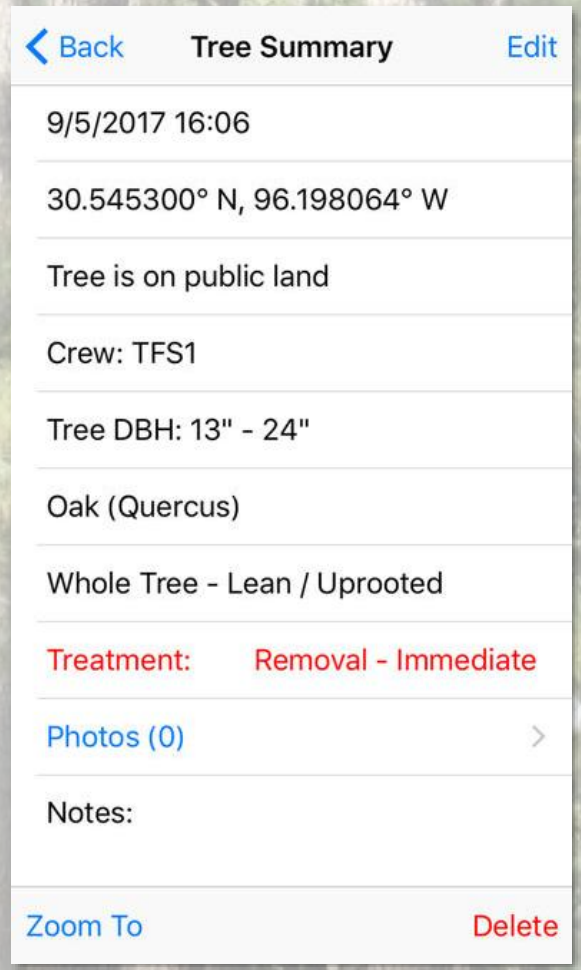


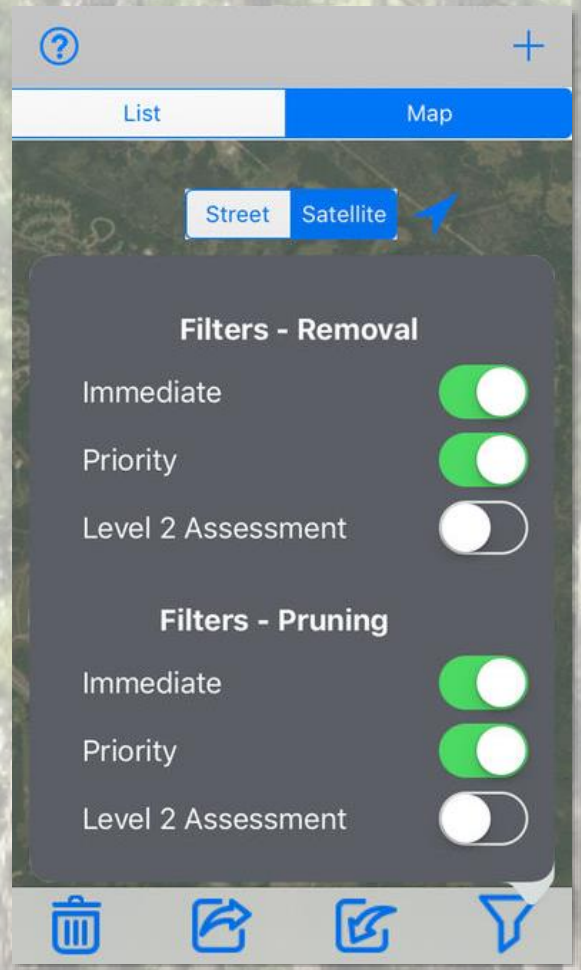


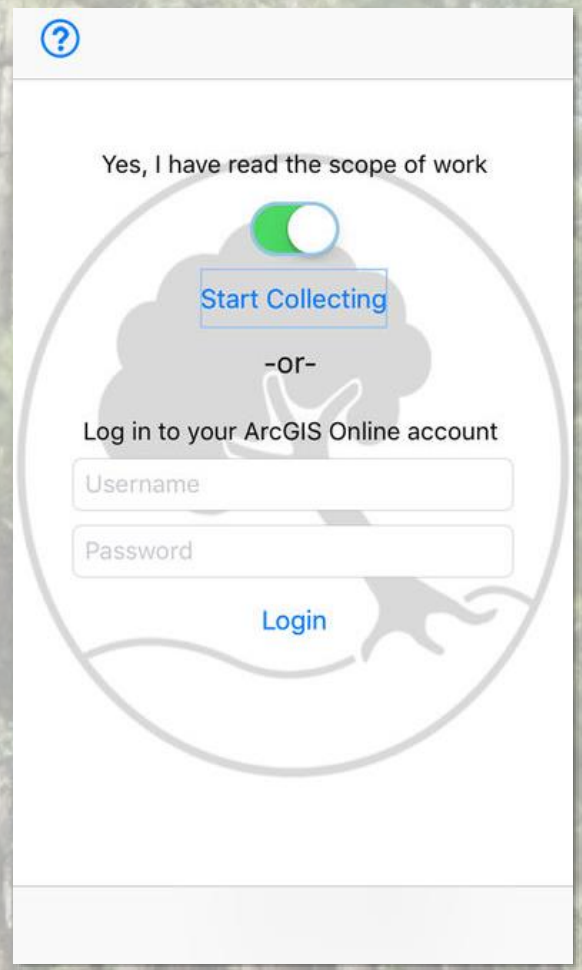
Trees Count is a mobile app for iOS and Android devices that allows users to inventory trees in communities. Trees are mapped and characterized with informative attributes. Inventories can be transferred across devices.

Tree Risk



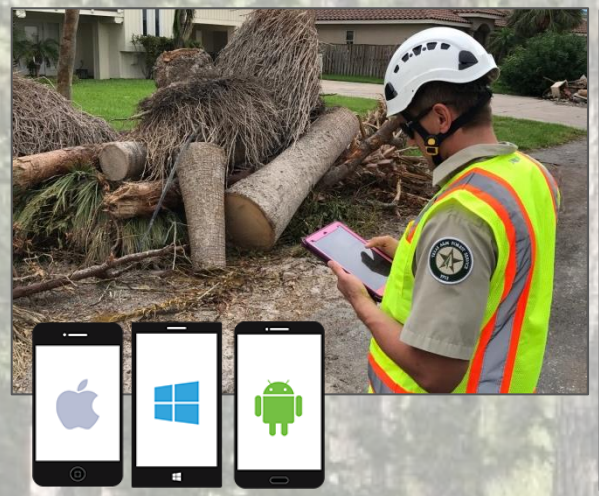


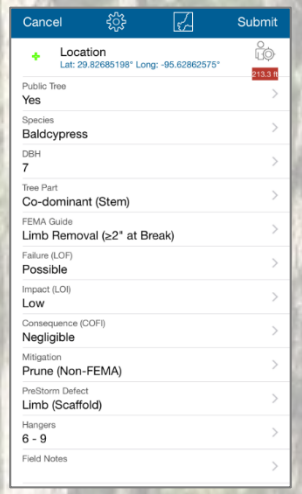


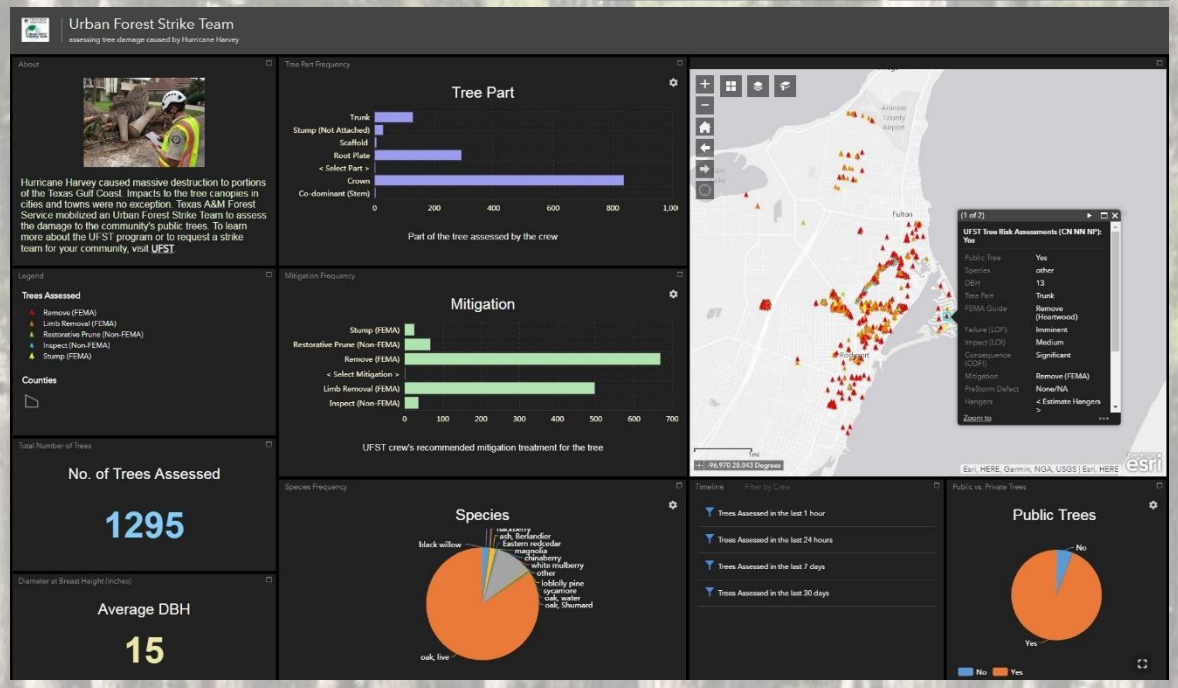


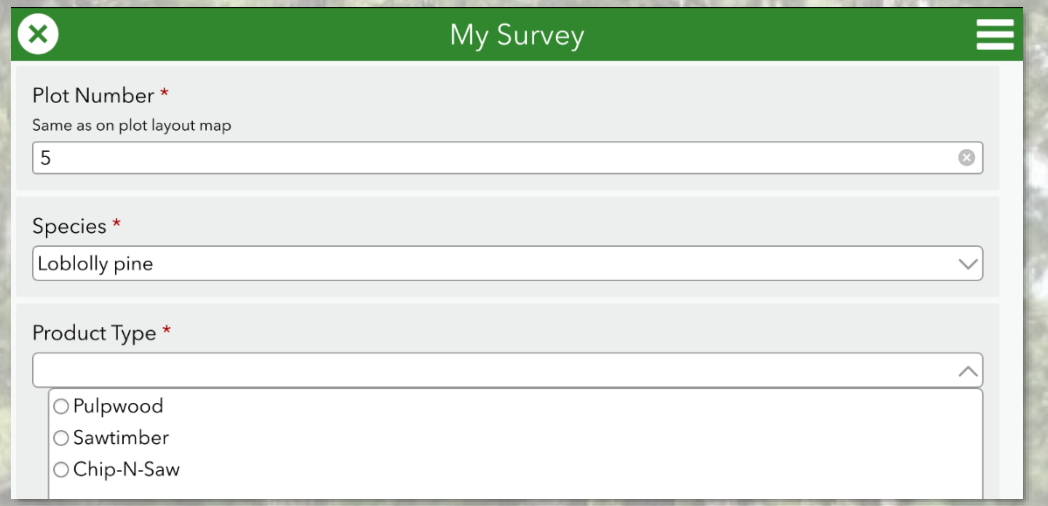
The Level 1 Tree Risk Assessment app helps perform a limited visual tree assessment. It maps those trees with obvious defects that have a Probable or Imminent likelihood of failure and identifies treatment.

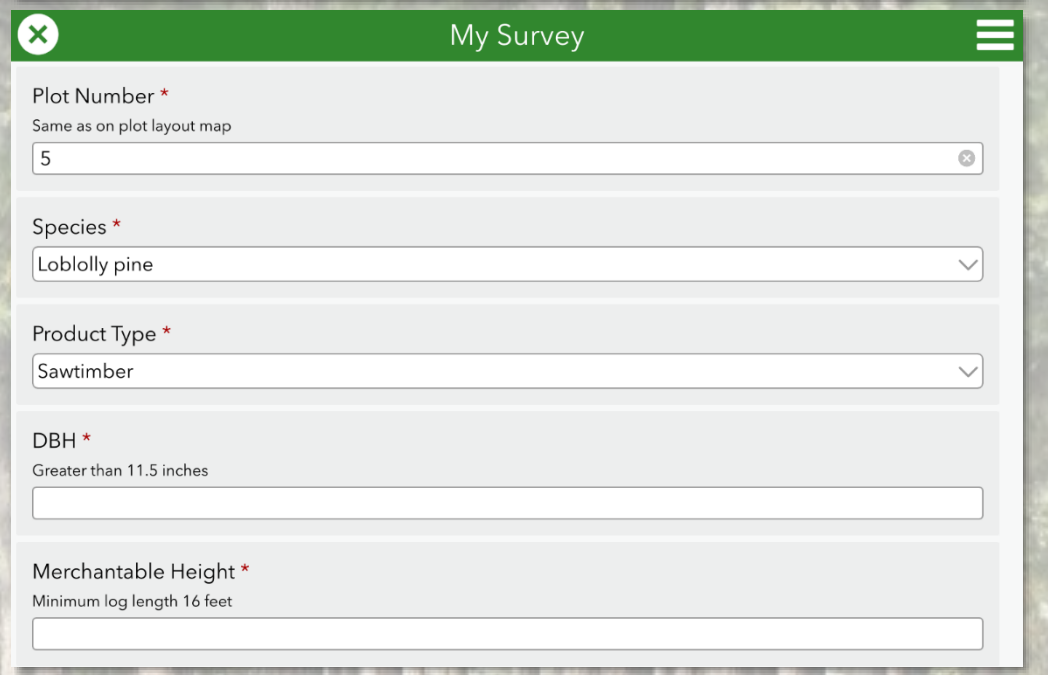
Collector and Survey123 for ArcGIS





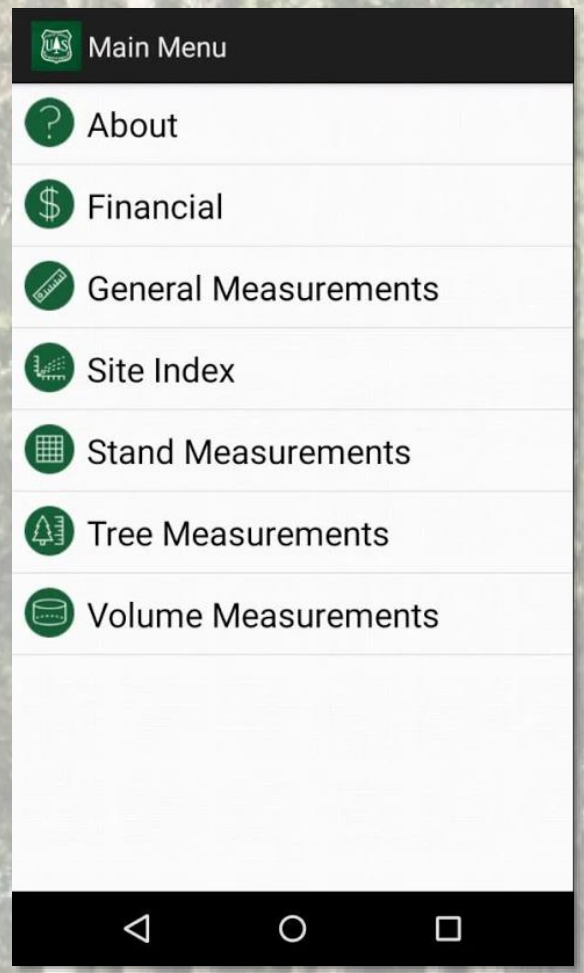


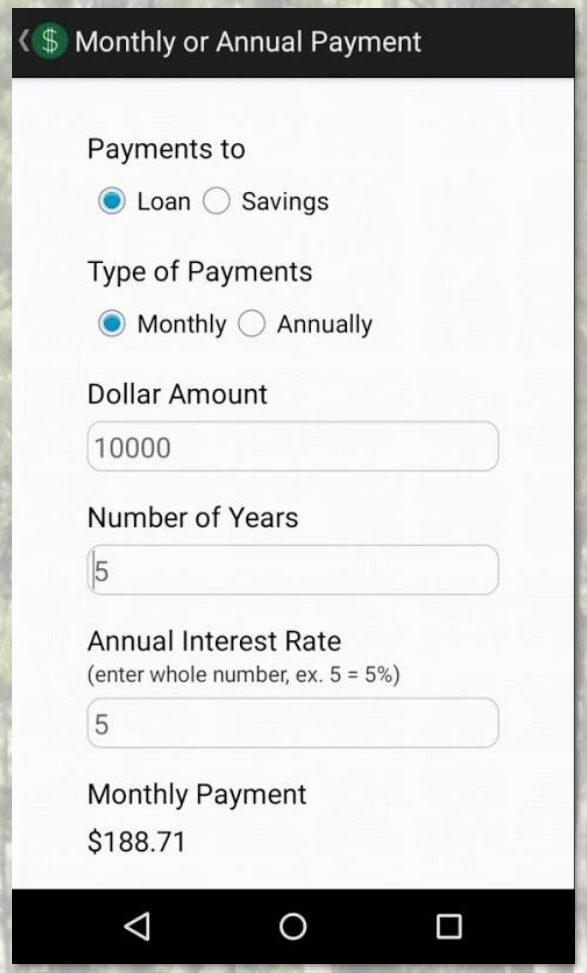


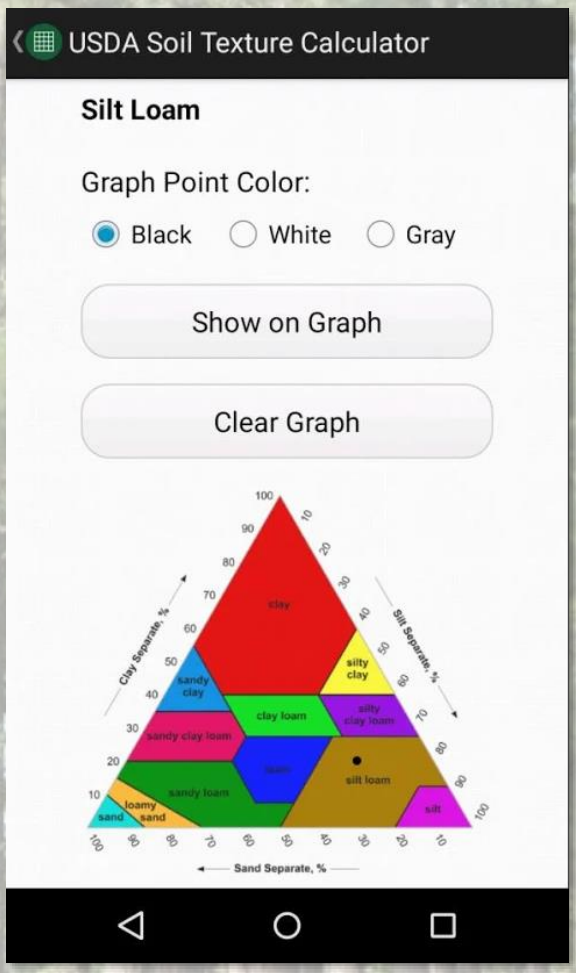


Collector for ArcGIS allows for accurate connected and disconnected data collection in the field. Survey123 for ArcGIS is a simple and intuitive form-centric data gathering solution that makes creating, sharing, and analyzing surveys.

Service Forester’s Toolkit







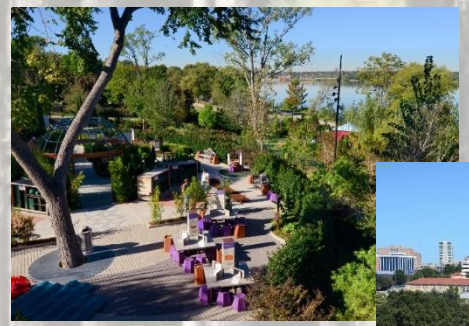
This app is based on the United States Forest Service’s (USFS) Service Forester's Handbook. This convenient pocket guide is a quick-reference for basic forest and land measurements, tree measurements, volume tables, site index charts and more.

Unmanned Aerial Systems (UAS)

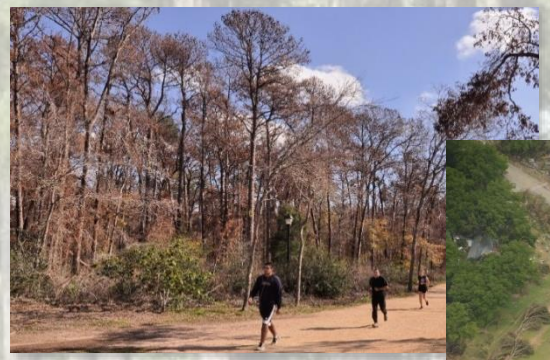
Forest and Woodland Management

Forest Health Survey

Urban Tree Canopy Assessment

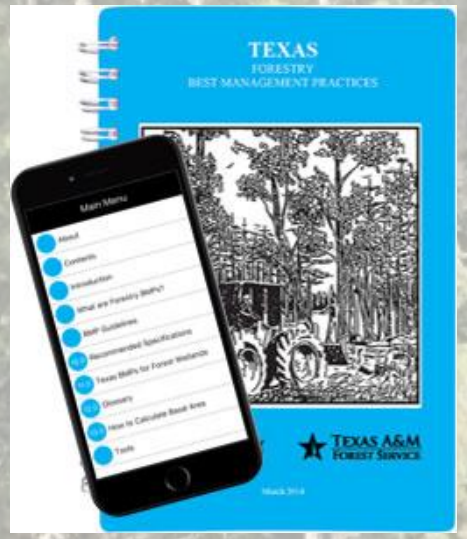


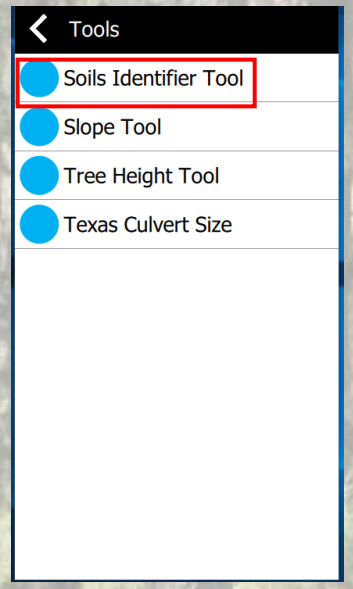
Post-Disaster Damage Assessment

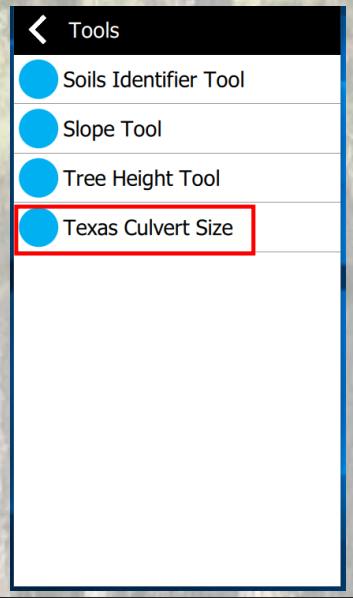


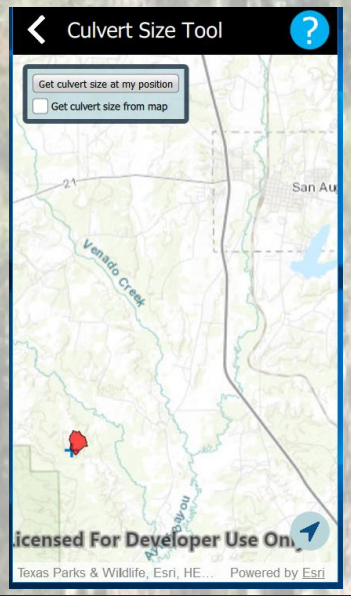
UAS technology could provide quicker identification of forest health issues, better information for management decisions, higher level engagement with property owners, and greater protection of forest ecosystems, property and lives.

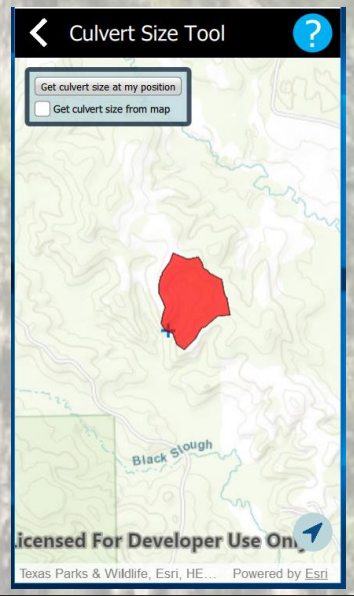
Texas Forestry BMP Enhancement

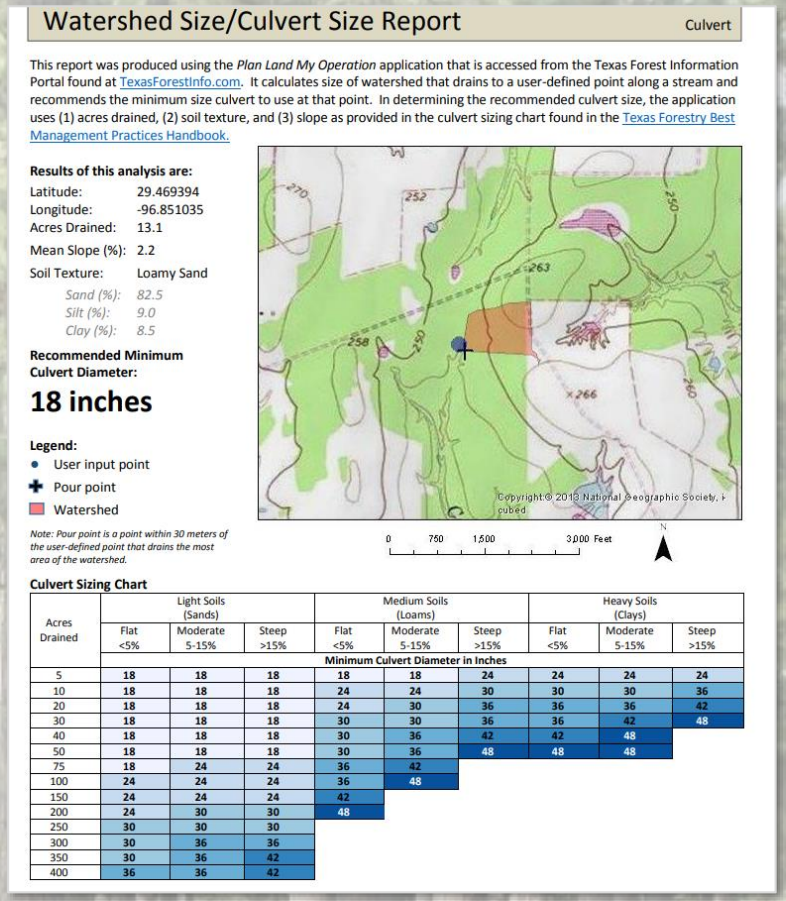












Watershed Size/Culvert Size Report

Culvert

This report was produced using the *Plan Land My Operation* application that is accessed from the Texas Forest Information Portal found at TexasForestInfo.com. It calculates size of watershed that drains to a user-defined point along a stream and recommends the minimum size culvert to use at that point. In determining the recommended culvert size, the application uses (1) acres drained, (2) soil texture, and (3) slope as provided in the culvert sizing chart found in the Texas Forestry Best Management Practices Handbook.

Results of this analysis are:

Latitude:	29.469394
Longitude:	-96.851035
Acres Drained:	13.1
Mean Slope (%):	2.2
Soil Texture:	Loamy Sand
Sand (%):	*82.5*
Silt (%):	*9.0*
Clay (%):	*8.5*

Recommended Minimum Culvert Diameter:

18 inches

Legend:
- User input point
- Pour point
- Watershed

Note: Pour point is a point within 30 meters of the user-defined point that drains the most area of the watershed.

0 750 1,500 3,000 Feet

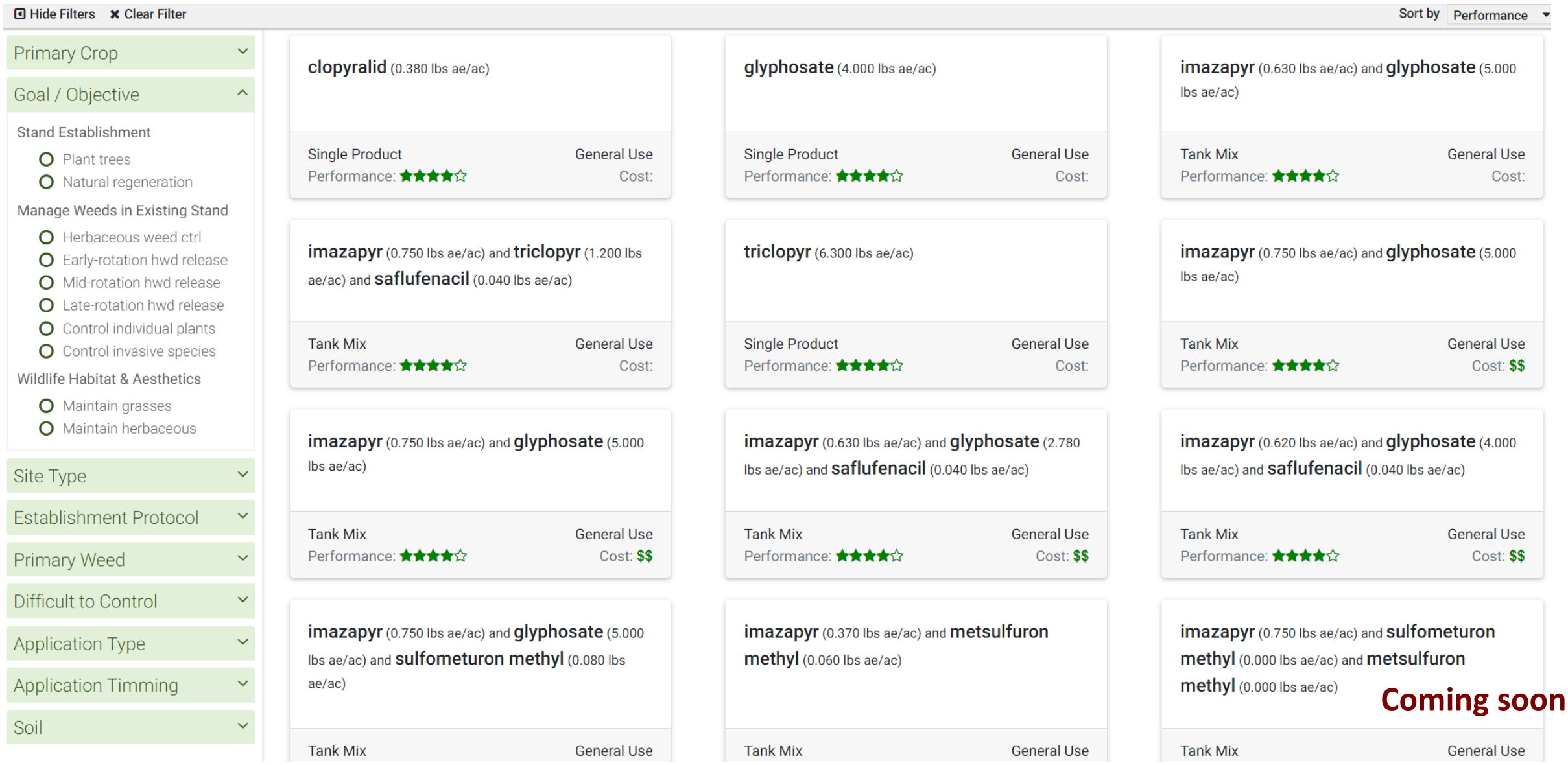
Culvert Sizing Chart

Acres Drained	Light Soils (Sands)			Medium Soils (Loams)			Heavy Soils (Clays)		
	Flat <5%	Moderate 5-15%	Steep >15%	Flat <5%	Moderate 5-15%	Steep >15%	Flat <5%	Moderate 5-15%	Steep >15%
	Minimum Culvert Diameter in Inches								
5	18	18	18	18	18	24	24	24	24
10	18	18	18	24	24	30	30	30	36
20	18	18	18	24	30	36	36	36	42
30	18	18	18	30	30	36	36	42	48
40	18	18	18	30	36	42	42	48	
50	18	18	18	30	36	48	48	48	
75	18	24	24	36	42				
100	24	24	24	36	48				
150	24	24	24	42					
200	24	30	30	48					
250	30	30	30						
300	30	36	36						
350	30	36	42						
400	36	36	42						

Coming soon...

The Texas Forestry BMPs app is based on the Texas Forestry Best Management Practices Handbook (May 2014), the state manual for protecting water quality during forest operations.

Herbicide Decision Support System



Coming soon…

This will provide a decision support system derived from expert experience and opinion on effective prescriptions for using herbicides in forestry.

Herbicide Decision Support System

Imazapyr (0.750 lbs ae/ac) and **Triclopyr** (1.200 lbs ae/ac) and **Saflufenacil** (0.040 lbs ae/ac)

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General Use / Tank Mix

OPERATION:
- **Woody release - early**
- **Woody release - mid**
- **Woody release - late**

CROP SPECIES:
- **Loblolly pine**
- **Longleaf pine**
- **Shortleaf pine**
- **Slash pine**

SITE CONDITIONS:
- **Any**

ESTABLISHMENT PROTOCOL:
- **Any**

TIMING OF APPLICATION:
- **None**

DIFFICULT TO CONTROL PLANTS:
- **Yaupon**
- **Waxy-leaf woody**

This herbicide prescription is applied underneath crop pine trees in stands with heavy yaupon competition and for which a primary goal is to optimize pine growth. This prescription should be applied within the first 9 – 12 month following a thinning operation or mechanical competition control operation to allow access from the ground. This prescription is okay to use if native grass restoration is not a primary concern. It is most beneficial in stands that are scheduled for fertilization treatments

Applied Rate by Products

imazapyr (vol/ac)	List of Available Products
24 ounces	Arsenal AC, Imazapyr 4 SL, Polaris AC
48 ounces	Chopper Gen2, Polaris SP, Rotary 2 SL

triclopyr (vol/ac)	List of Available Products
24 ounces	Boulder 6.3, Forestry Garlon XRT
38 ounces	Element 4, Garlon 4 Ultra, Relegate, Tahoe 4E, Triclopyr 4, Triclopyr 4E

saflufenacil (vol/ac)	List of Available Products
2 ounces	Detail

Adjuvant

- • Use 32 ounces of premixed product containing methylated seed oil (MSO) and organosilicone surfactant (e.g., Elite Supreme).

Timing

- • This application during the growing season after the time yaupon leaves are fully mature. Avoid applications during time of drought or when plants may not be active. Applications made while pines are actively growing or under stress may cause crop tree injury

Application Guidelines

- DO NOT apply imazapyr products formulated for site preparation application (e.g., Chopper) over the top of pines.

When to Adjust Prescription

- • Mix can range from 10 to 60 ounces per acre of Garlon XRT or equivalent depending upon density and condition of yaupon.

Prescription Weakness

Cost:

Overall Performance: ★★★★☆

ITEMIZED PERFORMANCE

Grass Control:	★★★☆☆
Broadleaf Control:	★★★★☆
Woody Control:	★★★★☆
Vine Control:	★★★★☆
Effective Speed:	★★★★☆
Control Duration:	★★★★☆
Hard to Control:	★★★★☆
Crop Tolerance:	★★☆☆☆
Resistant Species:	★★★☆☆
Native Pine Control:	★★★☆☆
Restrictions:	★★★★☆

Fewer **$** symbols indicate lower cost of chemistry per applied acre. A greater number of ★ indicates better performance.

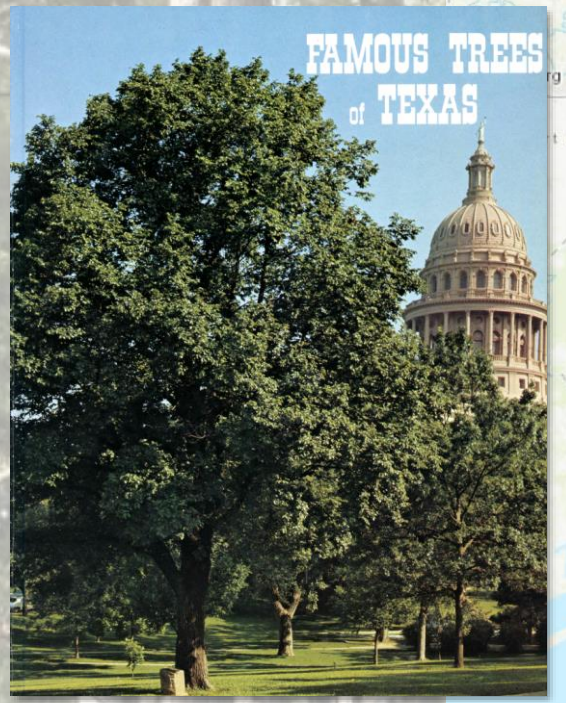
Rank Notes:

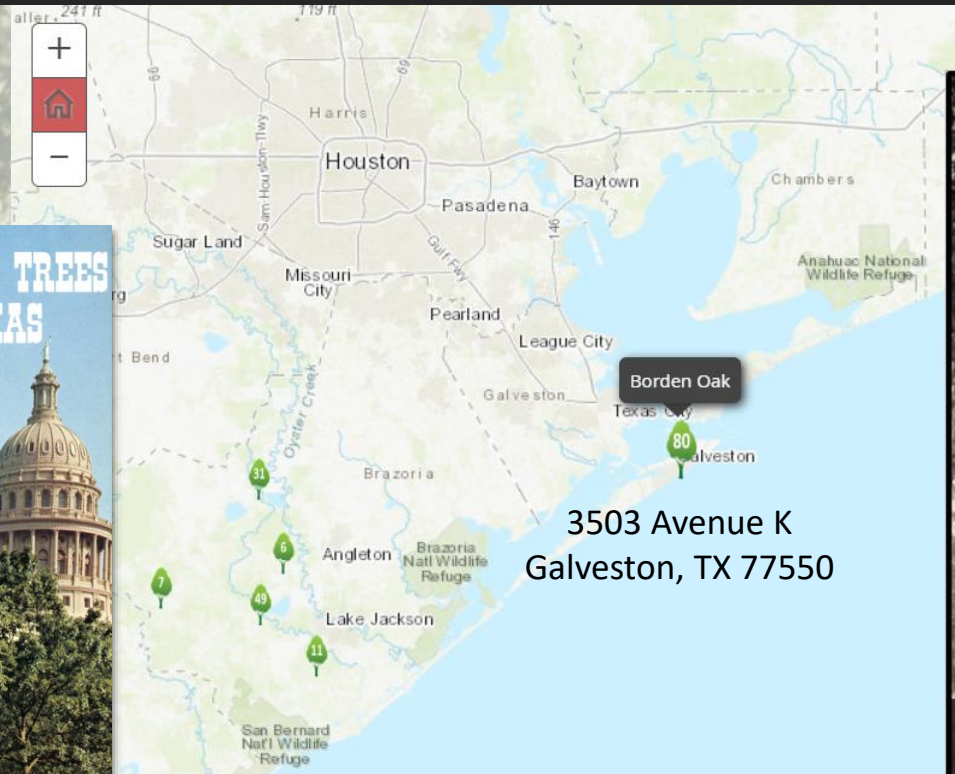
References:

Coming soon…

This will provide a decision support system derived from expert experience and opinion on effective prescriptions for using herbicides in forestry. It provides means for filtering the results to narrow down the recommended prescriptions for a particular, prescribed situation.

Famous Trees of Texas





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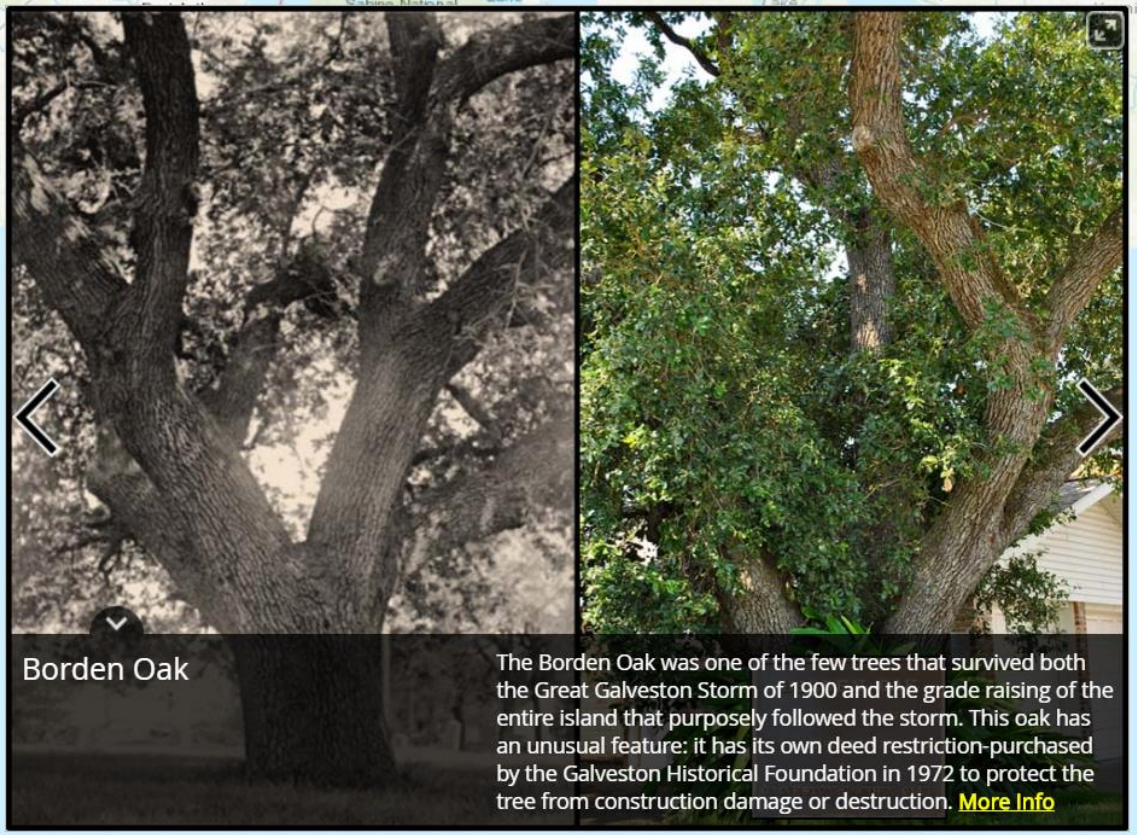
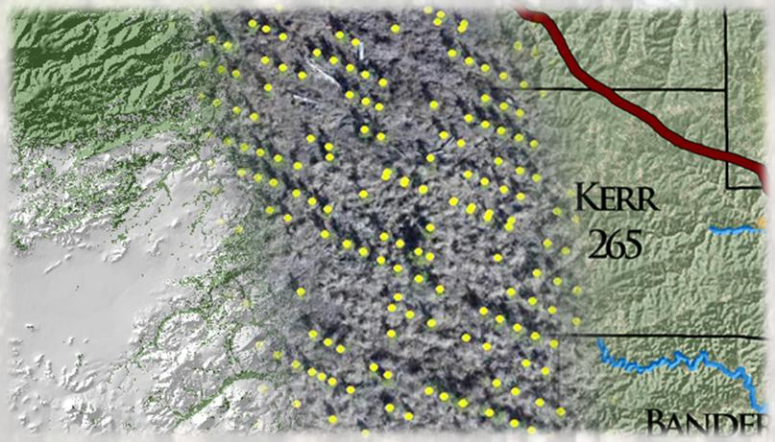


If Texas' trees could speak, what stories they would tell—stories of love, honor, mystery, justice and injustice.
Learn more about Texas history and the connection of people and trees through time.

Texas A&M Forest Service

Thank you!

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