

Modernizing Data Collection: A Success Story



COLLEGE OF ATMOSPHERIC AND GEOGRAPHIC SCIENCES
CENTER FOR SPATIAL ANALYSIS
The UNIVERSITY of OKLAHOMA

Center for Spatial Analysis

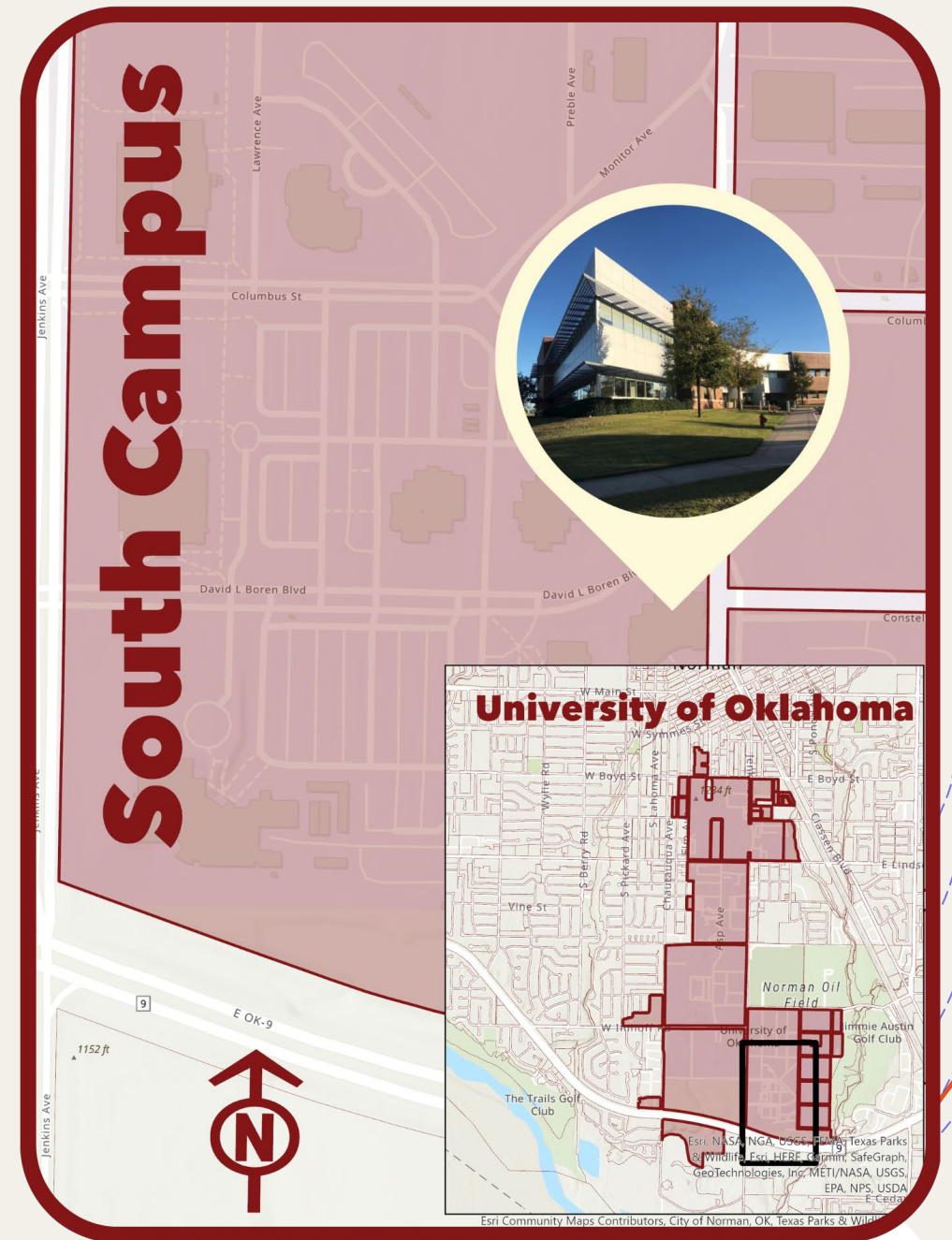
Candace Perry, GIS Project Developer


&

Daniela Spade, GIS Application & Outreach Coordinator

About CSA

- + Research and development center **specializing in the use of geospatial technology**
 - + Part of the College of Atmospheric and Geographic Sciences (DGES)
 - + Located on south campus
- + CSA provides geospatial services to **government agencies, private industry and the university**
- + Areas of Expertise
 - + Web applications and services
 - + Data warehousing and distribution
 - + Outreach and training
 - + Research and development





Modernizing Field Data Collection at the Oklahoma Department of Agriculture, Food, and Forestry

Domestic Data Improvement Initiative

APHIS Plant Protection & Quarantine

Background

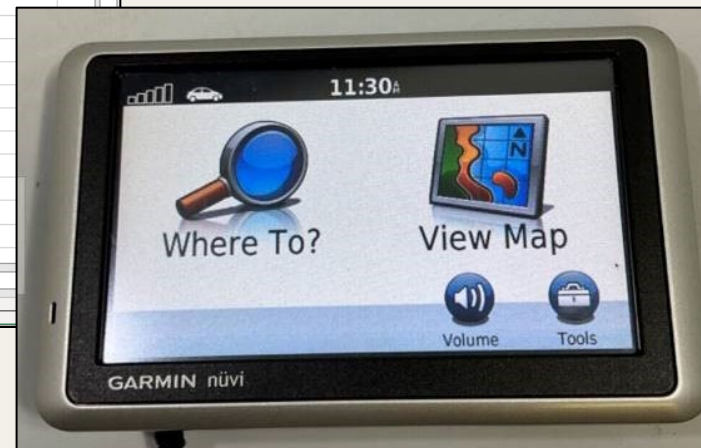
- ODAFF Consumer Protection Division participates in the USDA Cooperative Agriculture Pest Survey (CAPS) Program
- The USDA released a technology directive called the Domestic Data Improvement Initiative (DDII) to improve data quality and accuracy in 2019.
- ODAFF reached out to the Center for Spatial Analysis (CSA) and we teamed up to create a real-time data collection solution using ArcGIS Collector.

Before there was Collector there were spreadsheets?

+ Before Collector and Field Maps ODAFF Field Staff used:

- Excel Spreadsheets
- Paper and pen
- Garmin Nuvi's

CREEK COUNTY										
AMANDA'S GREENHOUSE 9503 W 162nd St S, Sapulpa, OK 74066										
ACTION				6-Jun	18-Jun	6-Jul	24-Jul	4-Sep	24-Sep	
Trap Number	Date Set	Latitude	Longitude	check	check	Relure	Check	Check	remove	TOTAL
AG - 1	5/3/2018	35.92858	96.09785	0	1	0	1	0	0	2
AG - 2	5/3/2018	35.92837	96.09878	0	0	0	0	0	0	0
TOTAL				0	1	0	1	0	0	2
UTOPIA GARDENS 10995 S 433rd W, Drumright, OK 74030										
ACTION				6-Jun	19-Jun	2-Jul	23-Jul	4-Sep	24-Sep	
Trap Number	Date Set	Latitude	Longitude	Check	check	check	relure	Check	remove	TOTAL
UG - 1	5/4/2018			0	0	0	0	0	0	0
UG - 2	5/4/2018			0	0	0	0	0	0	0
TOTAL				0	0	0	0	0	0	0



Challenges ODAFF wanted to address

+Problems:

- Spreadsheets/Garmin's not handed over until end of trapping season.
- User error (transcribing errors)
- Low battery life of Garmin's
- Working from printed maps
- Losing Traps/forgetting

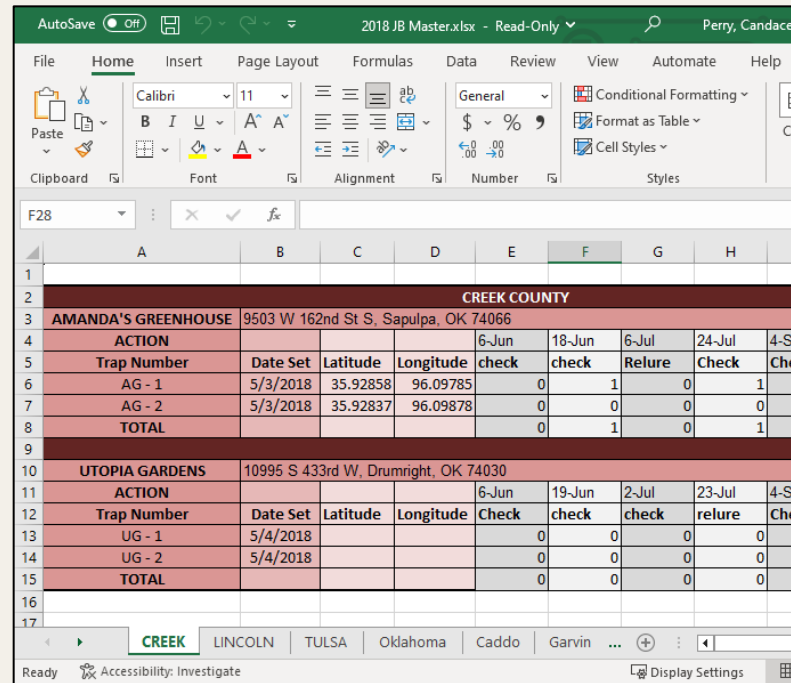
+Solutions:

- ✓ Real-time data reporting using Collector and Dashboards.
- ✓ Pre-defined list of values & required fields
- ✓ Battery life of phone is good (easily chargeable).
- ✓ Navigation built in & base gallery
- ✓ Comment section and Photo capability



Transition from Excel to Collector

- + Took spreadsheets and created Feature Classes in ArcGIS Pro.
- + Published Feature Class to portal, created Web Maps, and configured them for use in Collector.
- + Can have different role types in ArcGIS Online/Portal to manage user privileges.
- + Create Dashboards, Web Apps, Sites, and Experience Builders for real-times visuals and stats.



CREEK COUNTY									
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UG - 2		5/4/2018			0	0	0	0	0
TOTAL					0	0	0	0	0

We have data...now what?

+ Web Apps, Dashboards, Experience Builder, Sites

Forest Pest Data Viewer Oklahoma Department of Agriculture

Field Staff: None | County: None | Sample #: None | Date: No date selected

Traps Set by County

Plastic Bucket	Samples Taken
29	30
Purple Prism	Large White Plastic Delta
29	29
Paper Wing	Plastic Wing
29	29

Forest Pest

Trap Type

- Large White Plastic Delta (PPM)
- Paper Wing (OPM)
- Plastic Bucket (PBM)
- Plastic Wing (RM)
- Purple Prism (EAB)

Forest Pest Data Editor by Center for Spatial Analysis

Find address or place

Edit

Select a template to create features

Forest Pest

Forest Pest

County	Cherokee (021)
Property Name	Sequoyah State Park
Property Type	Park
Host	Oak
Trap Type	Paper Wing (OPM)
Site Name	OPM021003
Date Set	5/16/2023

IFAO51001
J.Schoppa
4/12/2022
Not Sampled

IFAO51002
J.Schoppa
4/12/2022
Not Sampled

IFAO51003
J.Schoppa
4/12/2022
Sampled
LBA, Monomorium minimus

IFAO51004

Challenges

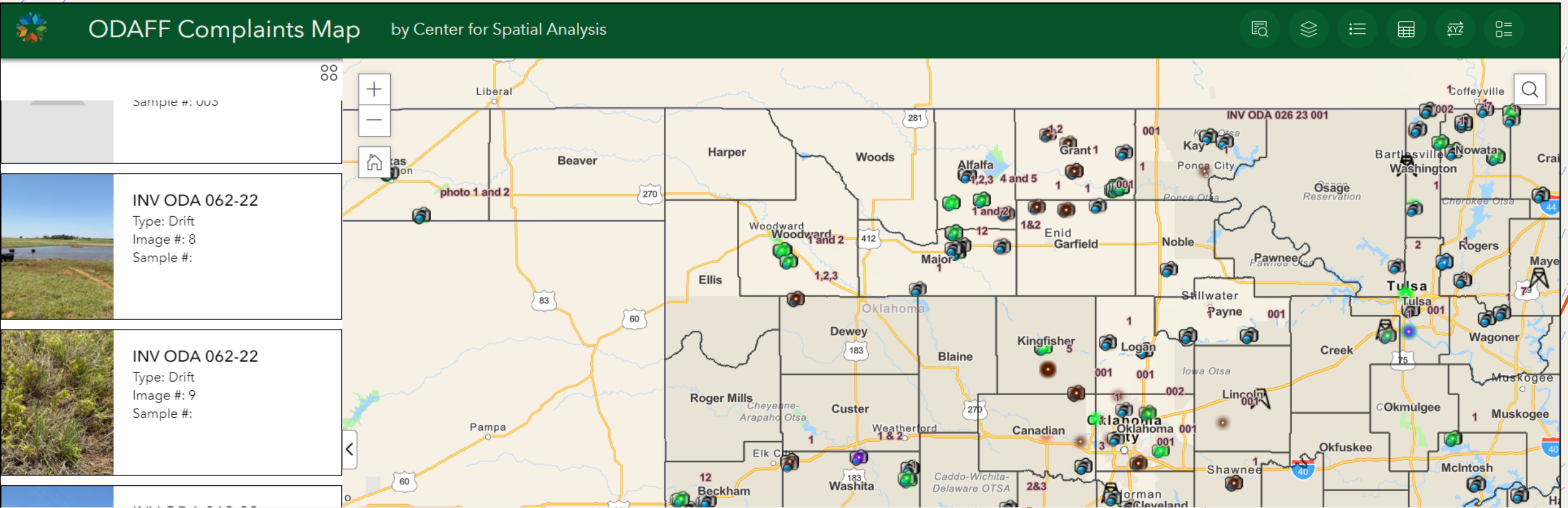
- + Change is hard.
- + ESRI released a deprecation notice of Collector in November 2020. Had to transition to Field Maps (download new Field Maps App on all devices).
- + Conditional questions and symbology based on a related table not available in Portal.
- + Field Maps is NOT supported on Windows devices. (Available as of July 2023)
- + Must have ArcGIS Enterprise 10.6.1 to use Mobile App (Field Maps Web App designer is installed by default in 10.9.1)

Key Takeaways for Successfully Implementing Field Data Collection

- + Have a plan in place and open conversations with field staff.
- + Host multiple demonstrations and Q&A's.
- + Test, Test and when you think you have it Test again.
- + Involve all office and field staff.
- + Create excitement about all the possibilities and opportunities.

Transitioning Other Field Projects

- + Complaints, Hemp Farms, and Farm Scale Inspections also utilize Field Maps now.
- + Organized map-centric method of presenting data stake holders, superiors, legal staff, and the public.



Sensitive Crop Registry

OKLAHOMA
Dept. of Agriculture,
Food and Forestry

Reset Saved

Environmentally Sensitive Area Registry

OKLAHOMA
Dept. of Agriculture,
Food and Forestry

Environmentally Sensitive Area Registry

Company/ Business Name:*

Center for Spatial Analysis

Contact Name:

Candace Perry

- + Needed to update and streamline their current public registration process.
- + To meet requirements, we chose to use Survey123 within a Django framework and webhooks:
 - ✓ User Authentication
 - ✓ Automatic email confirmations
 - ✓ Pre-defined list of values
 - ✓ Conditional Questions
 - ✓ Expiration date based on sensitive crop type
 - ✓ Symbology based on sensitive crop type

[Sensitive Crop Viewer](#)

GIS day

GIS Day at OU hosted by CSA

- Student poster competition open to all students (with cash prizes)!
- StoryMaps competition!
- Esri workshops!
- **GISP points!**
- **Professional headshots!**
- Networking!
- **Food and parking provided!**
- Post event happy hour!!





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Thank you

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@center-for-spatial-analysis

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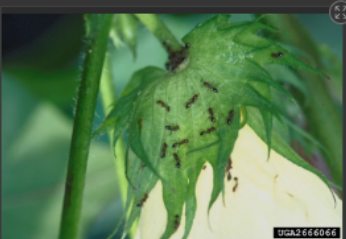


Oklahoma Red Imported Fire Ant 2016 - 2021

by The Center for Spatial Analysis

Year
None

County
None



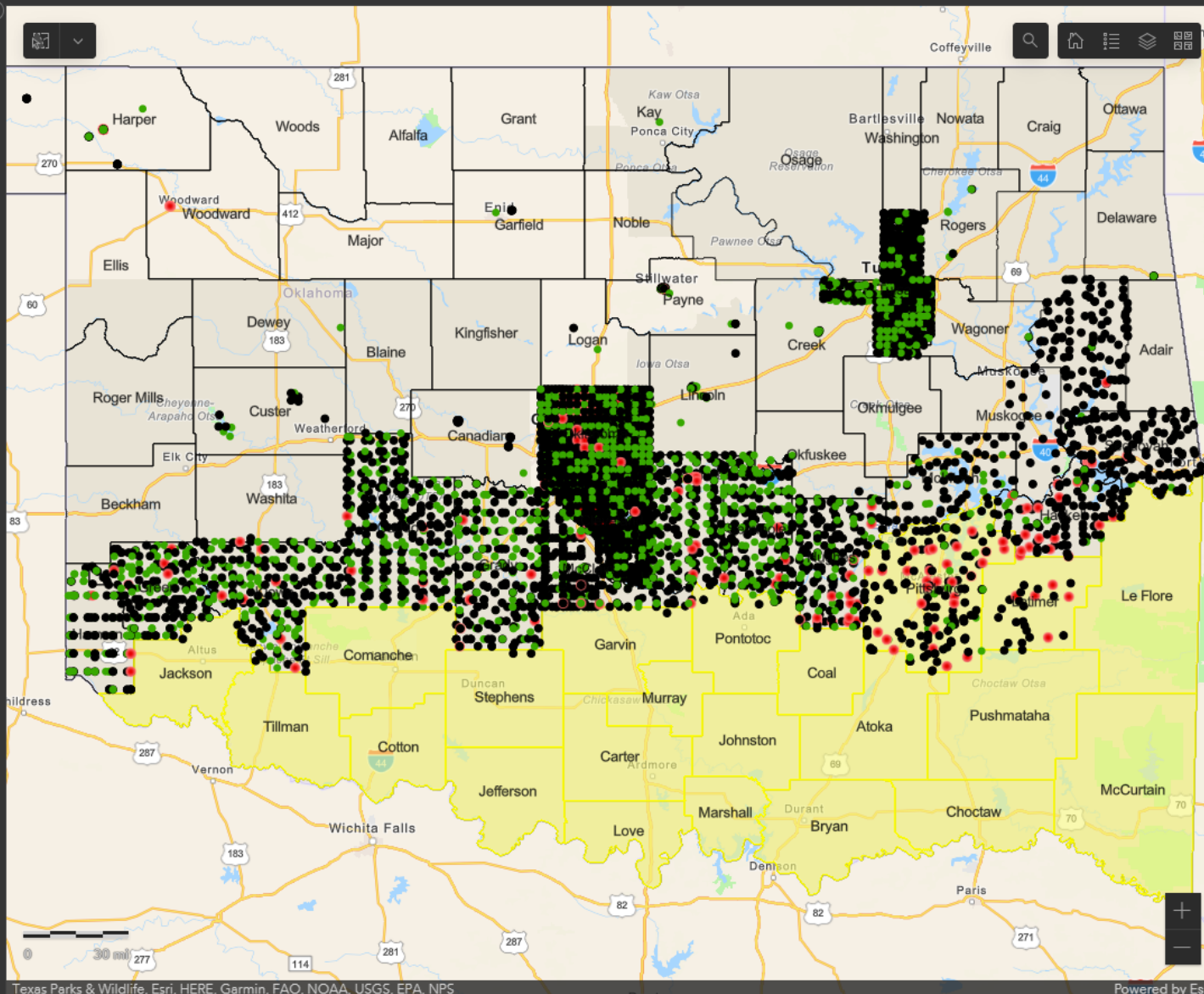
To learn more about Imported Fire Ants visit the [USDA Animal and Plant Health Inspection Service](#).

Historical IFA

IFA2016 2021

- Positive
- Negative
- Unreported
- Bait Drop

IFA quarantine boundaries



Texas Parks & Wildlife, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

Powered by Esri

Sampled 1.8k

Positive Samples

220

Negative Samples

1.6k

Sample Status

