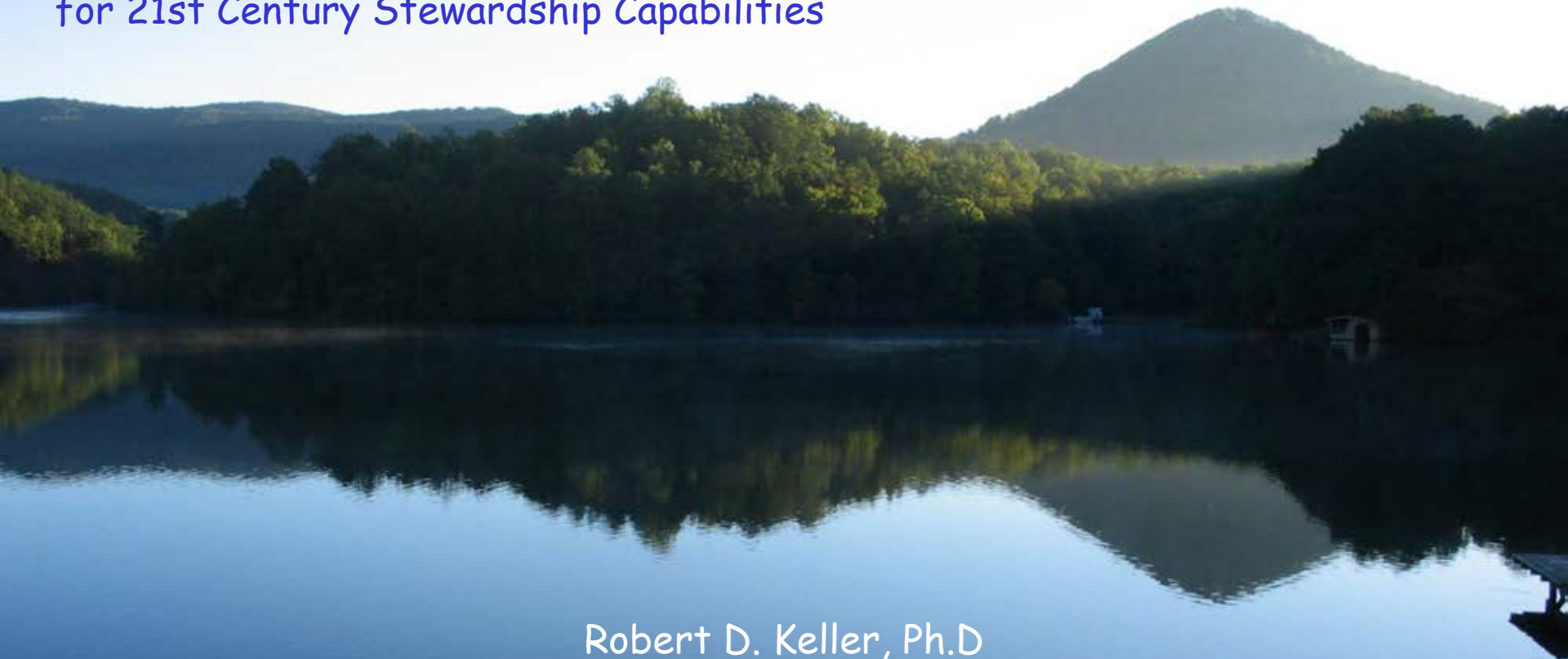


2016 Maryland Land Conservation Conference & Summit, Linthicum Heights, Maryland



# The Integration of Mobile Apps and Unmanned Aerial Vehicles for 21st Century Stewardship Capabilities



Robert D. Keller, Ph.D  
Montavious A. Bridges, Cheyenne S. Steptoe, David W. White

Atlantic Coast Conservancy  
05 MAY16

ATLANTIC COAST



CONSERVANCY



APPS

WIDGETS



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Google  
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Hangouts



Maps



Messaging



Moto



Mr. Number



Nature Calls



Navient  
Loans



PayPal



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Play Music



Play Store



PNC  
Mobile



Quickoffice



Republic



Ringtone  
Maker



Settings





# Nature Calls

## Land Conservation System



Sundial Apps, LLC

The Atlantic Coast Conservancy, Inc.



Introduction

Files

Log In

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+ Server

+ Device

You must be logged in to complete that action.

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Username

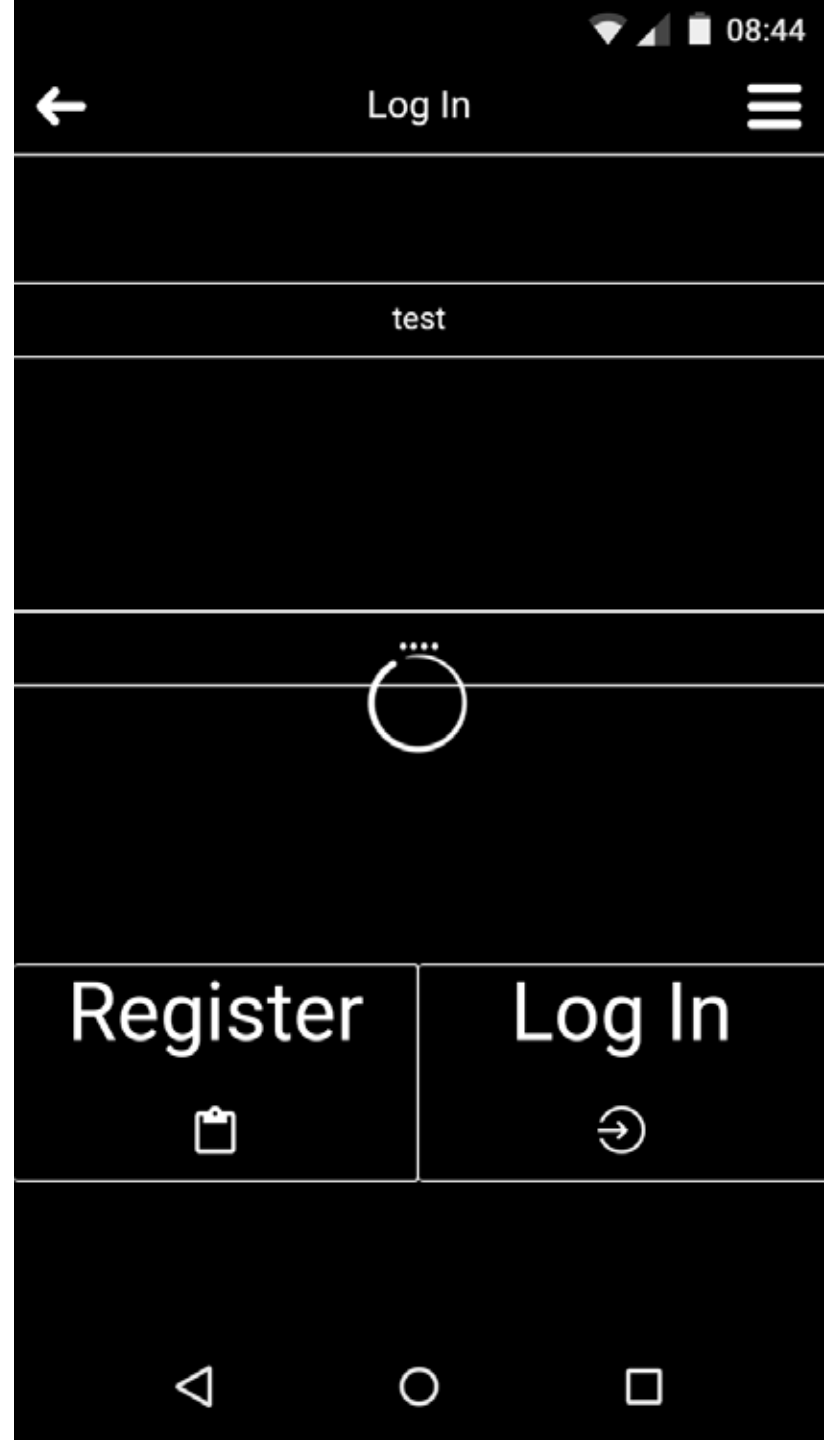
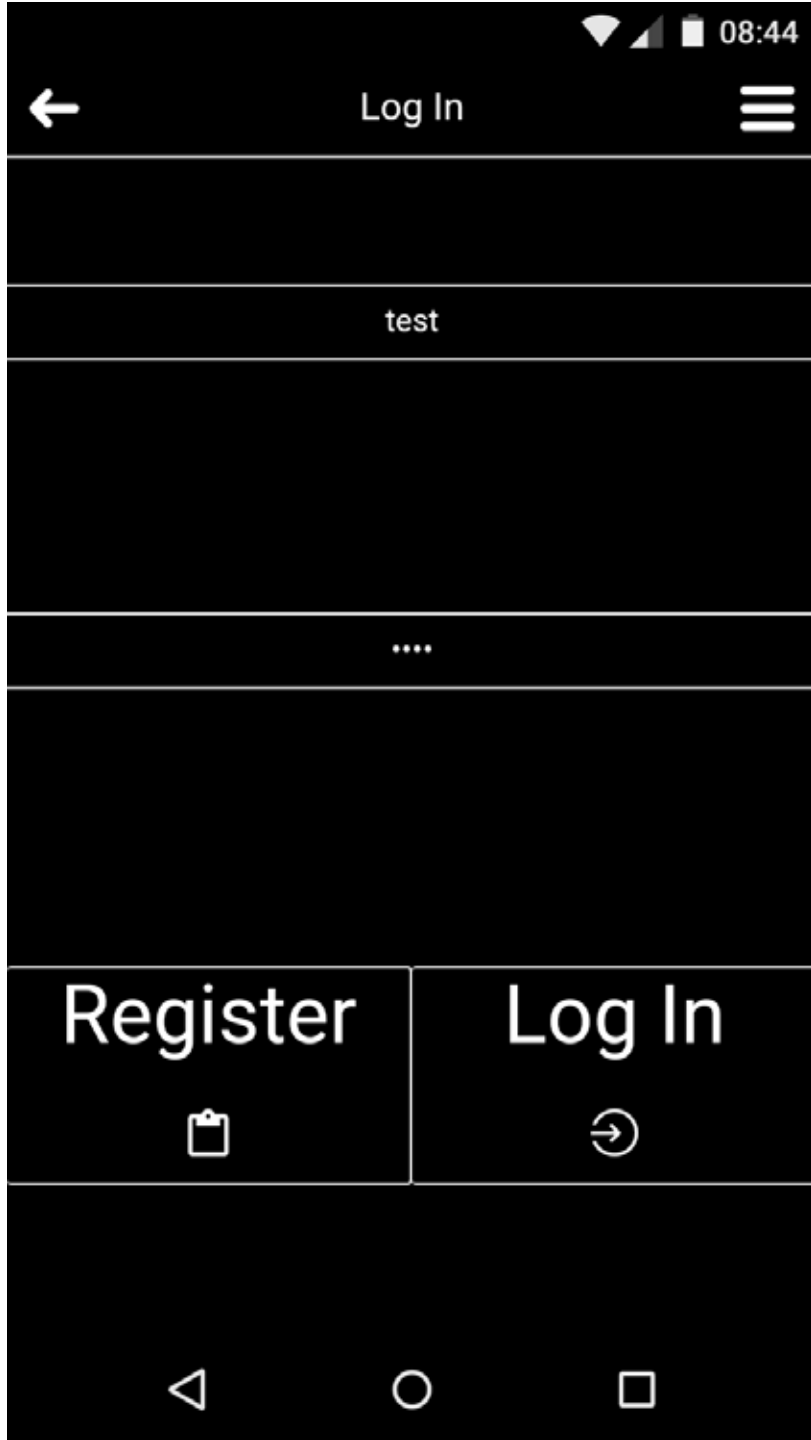
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Log In







# Files




+ Server

+ Device

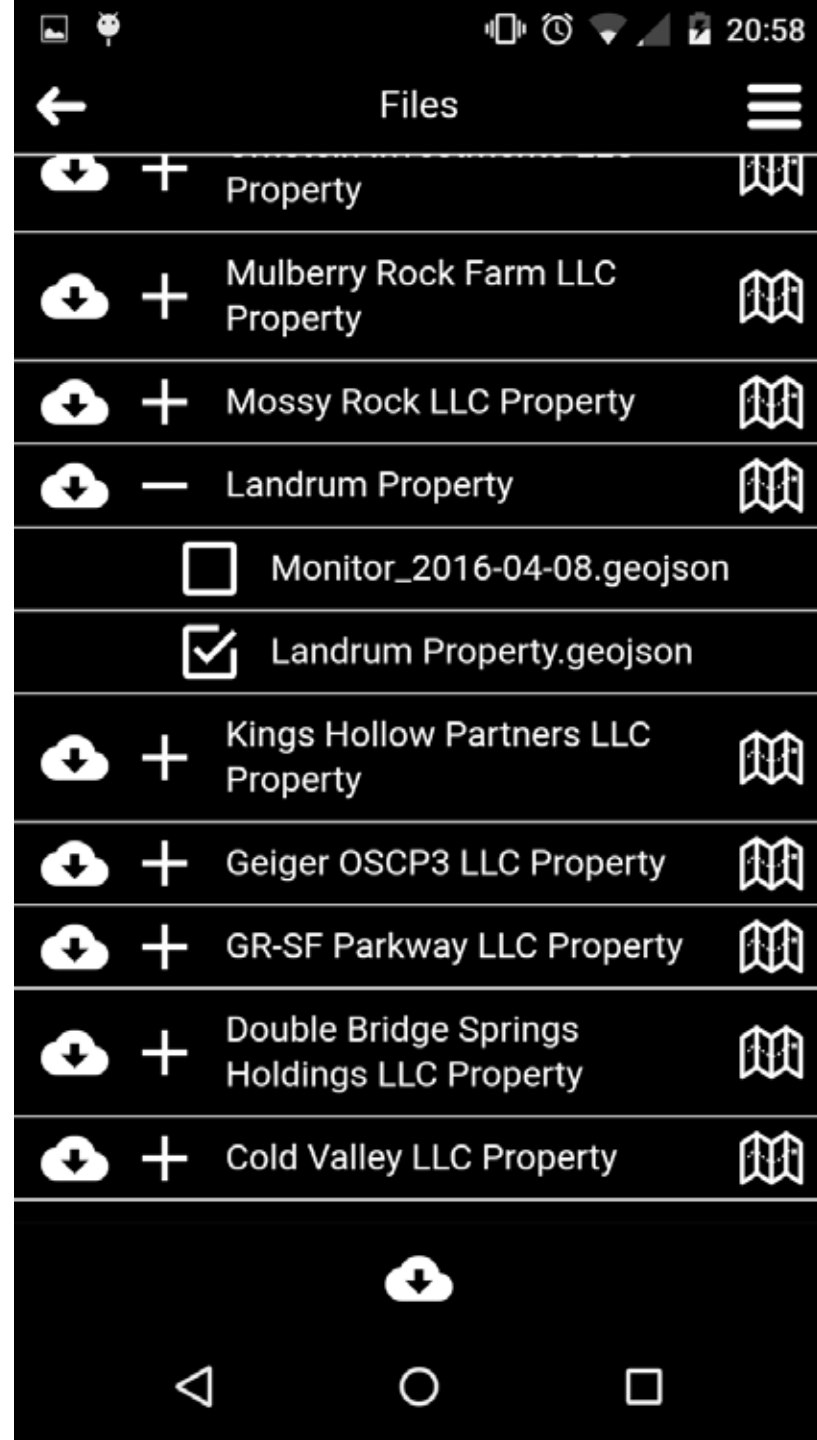
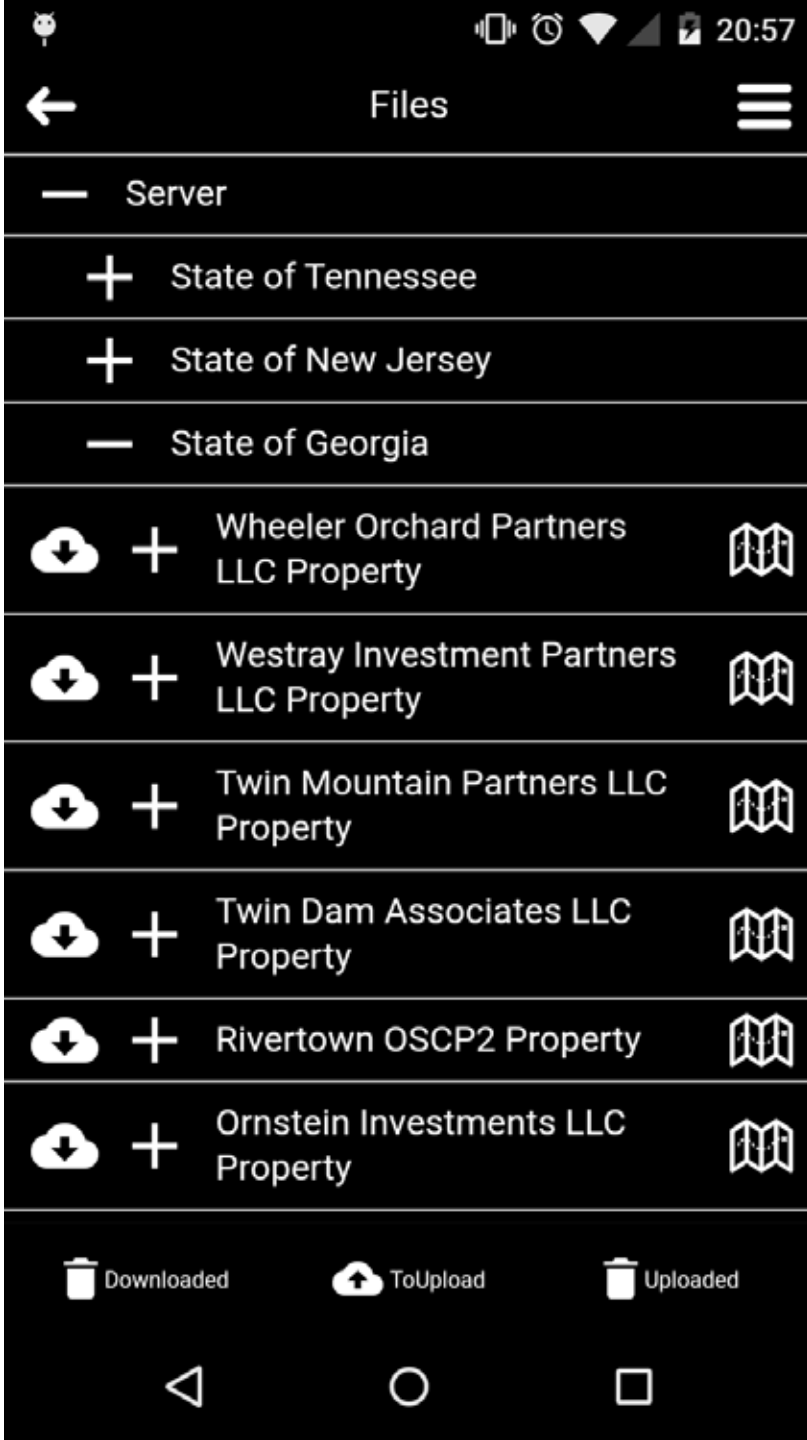


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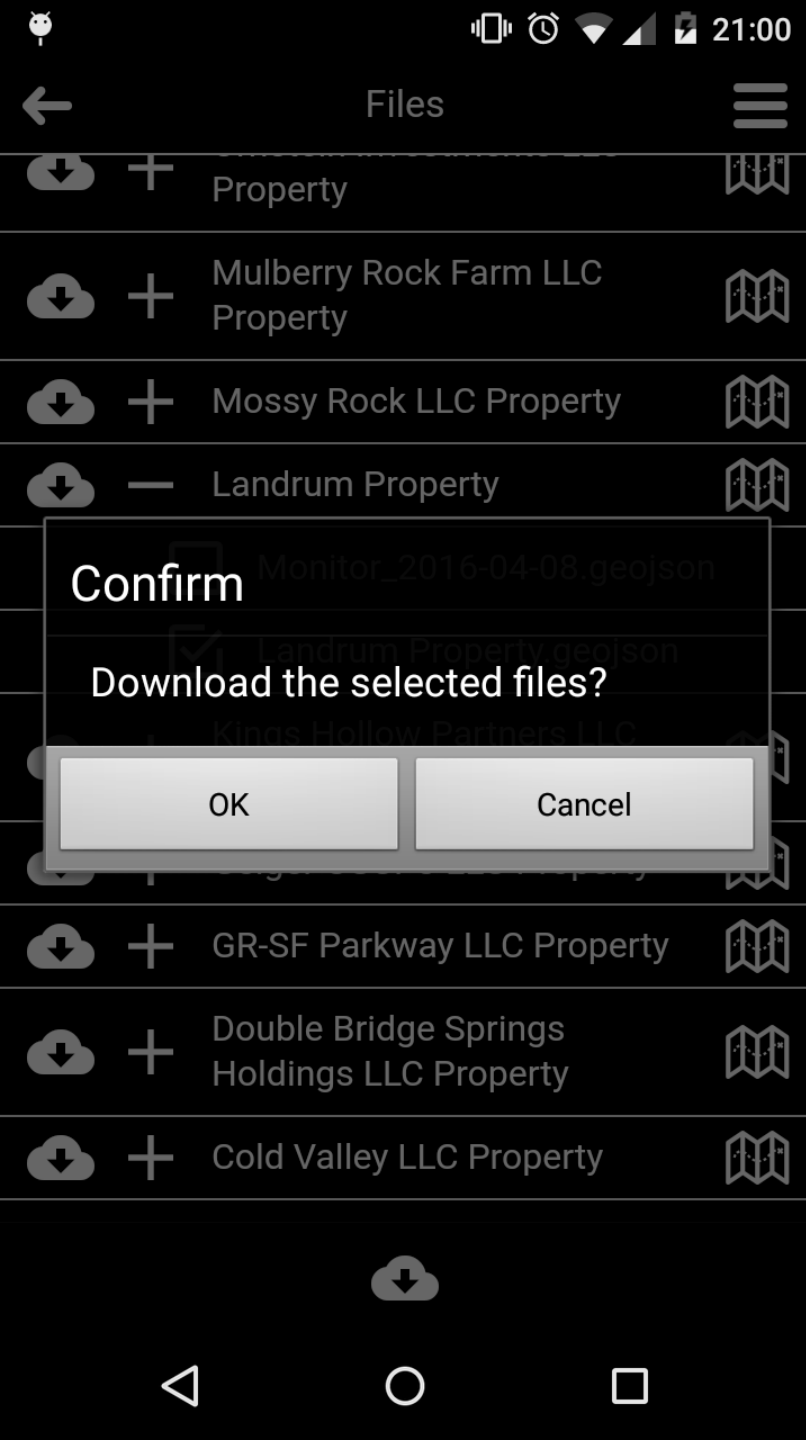
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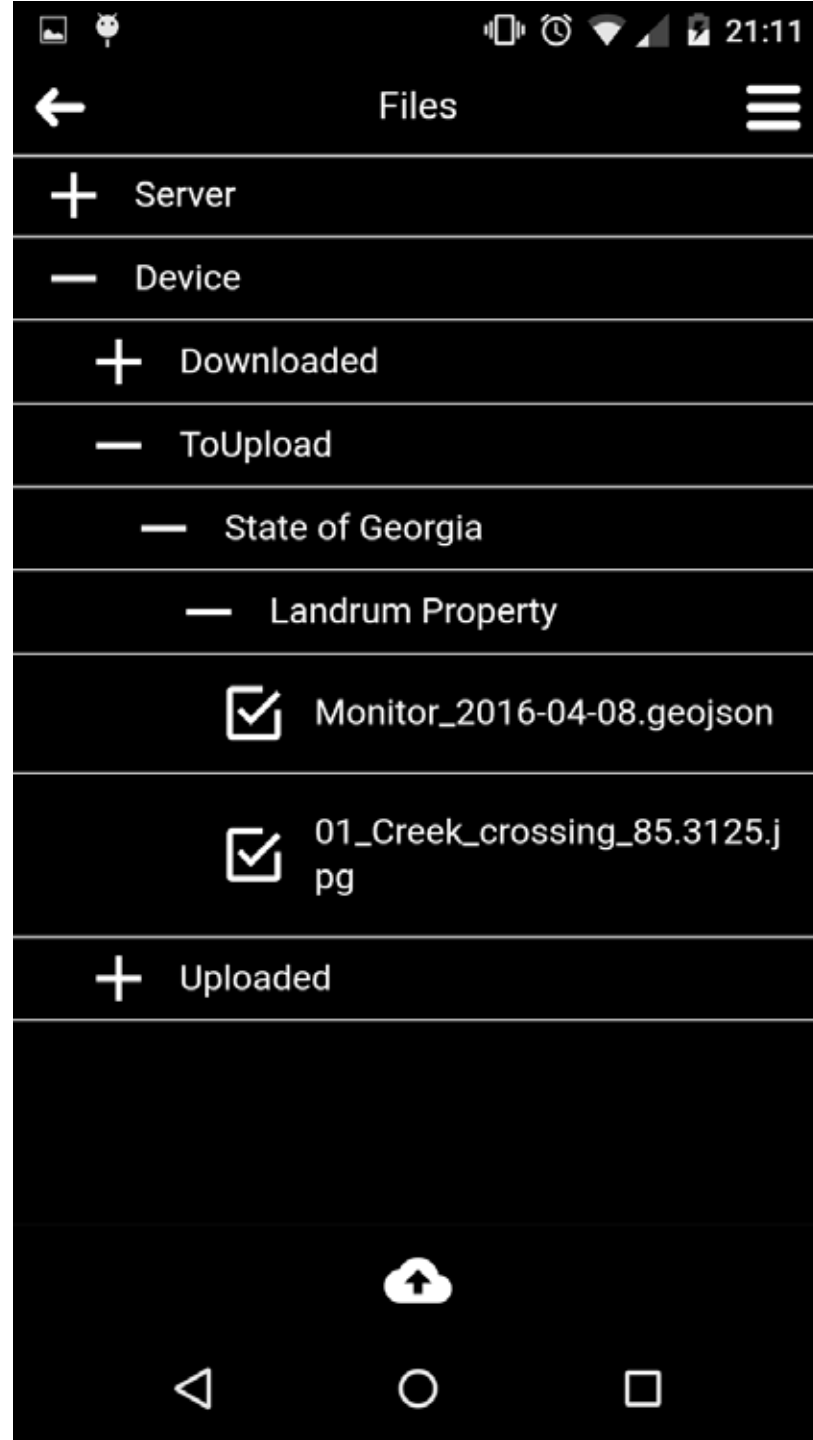
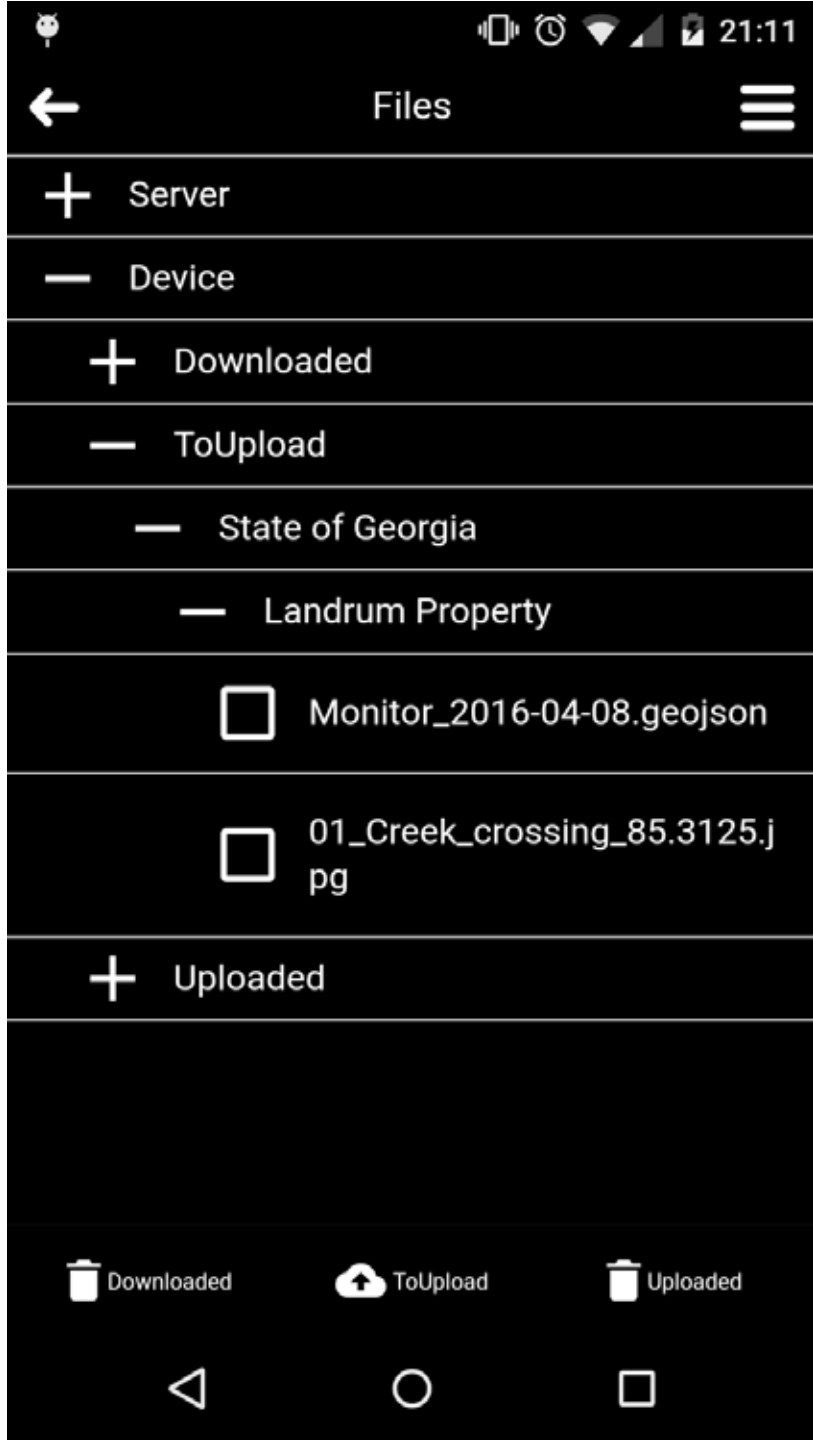
Georgia - Landrum	
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Datetime	2016-04-08 13:28:11
WPT	01
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Orientation	85.3125
Description	Creek crossing
	
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 Clear	 Done

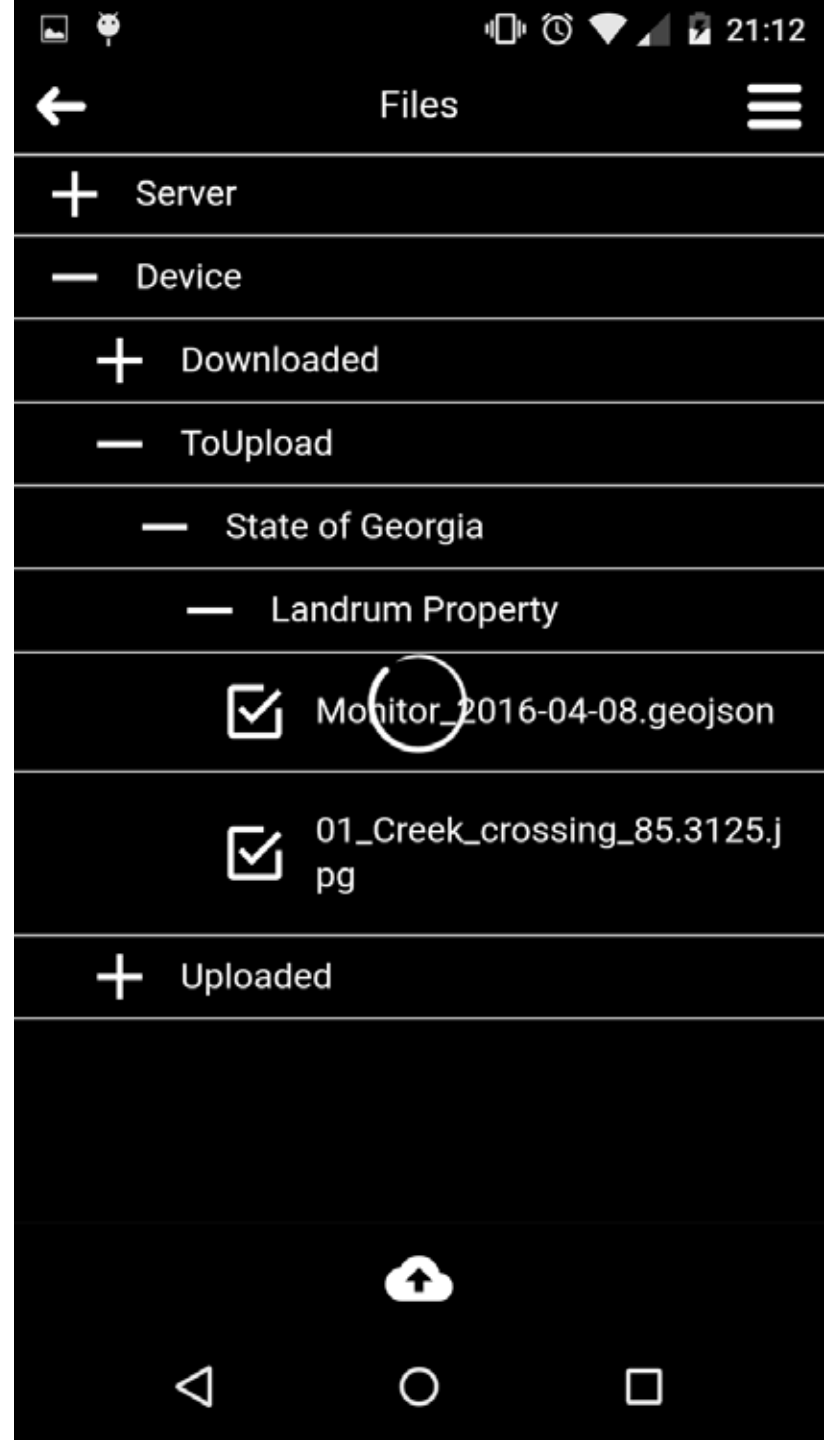
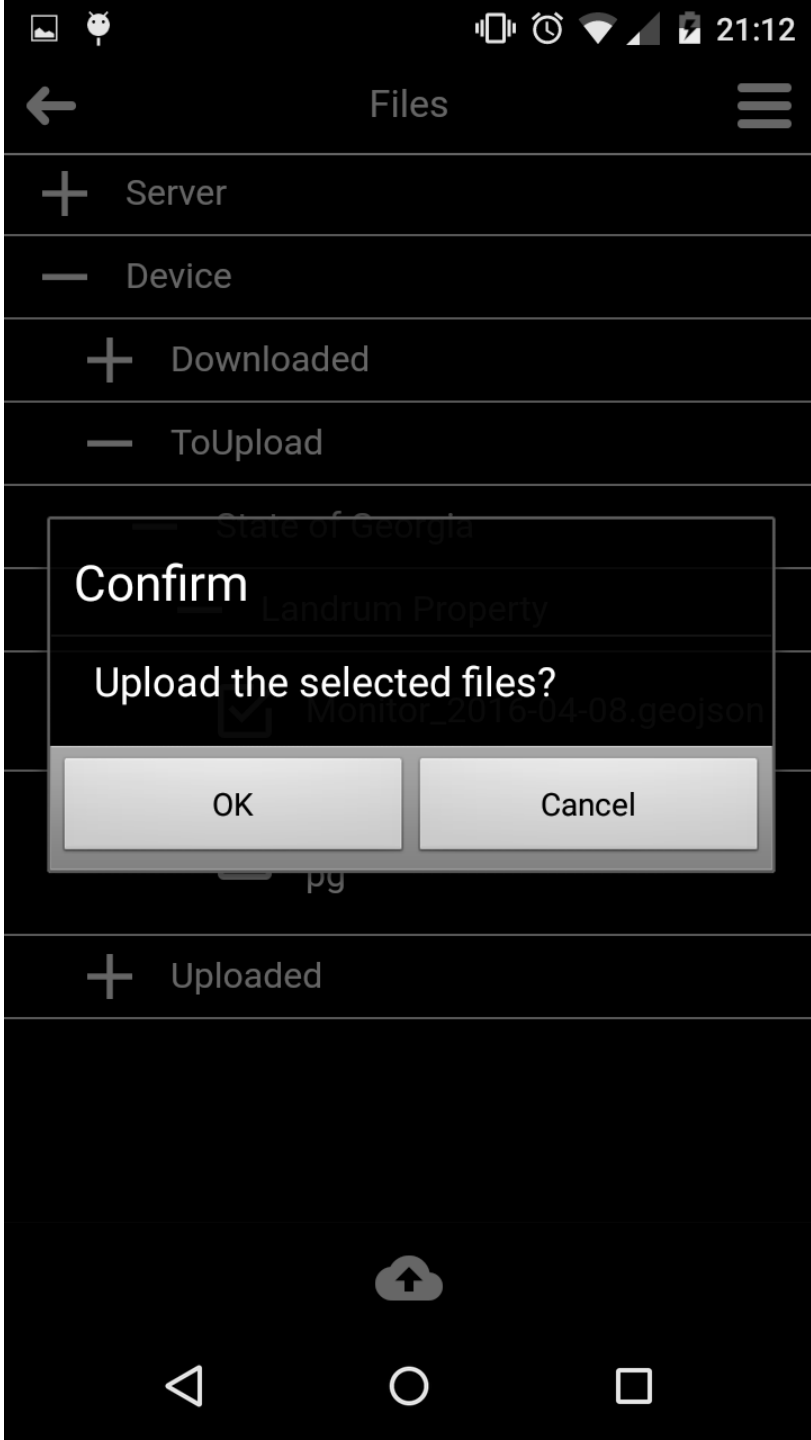


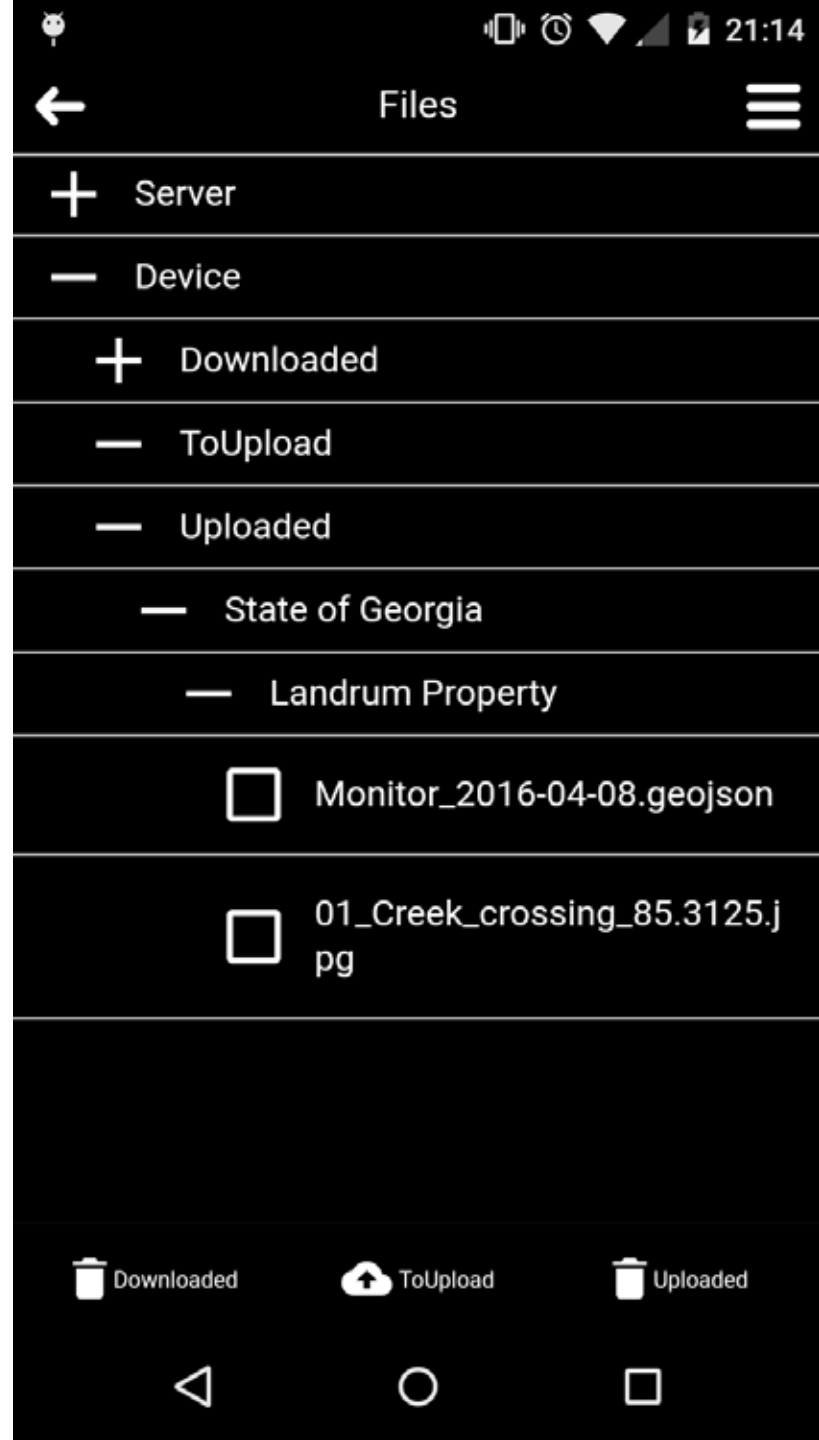
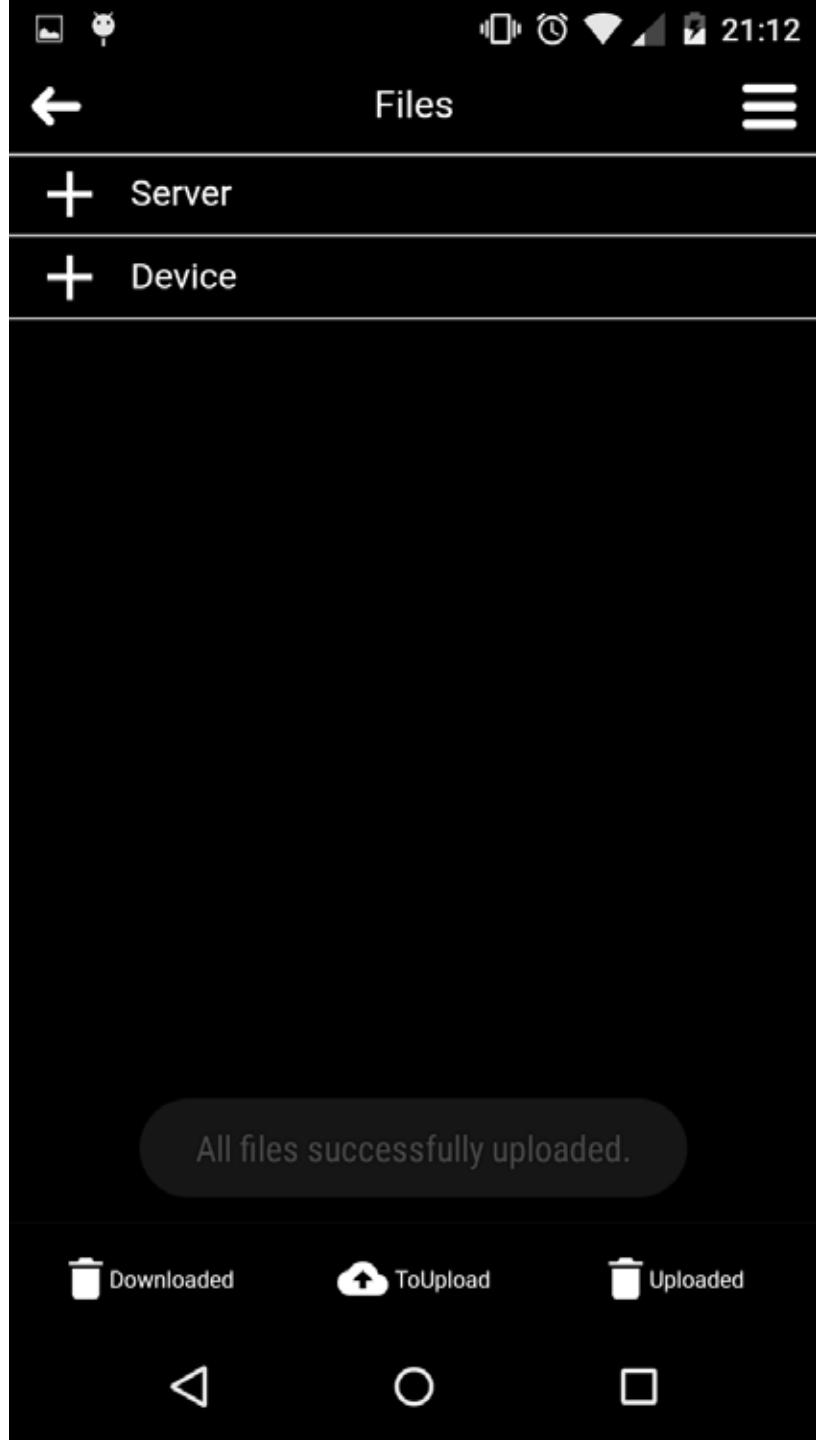
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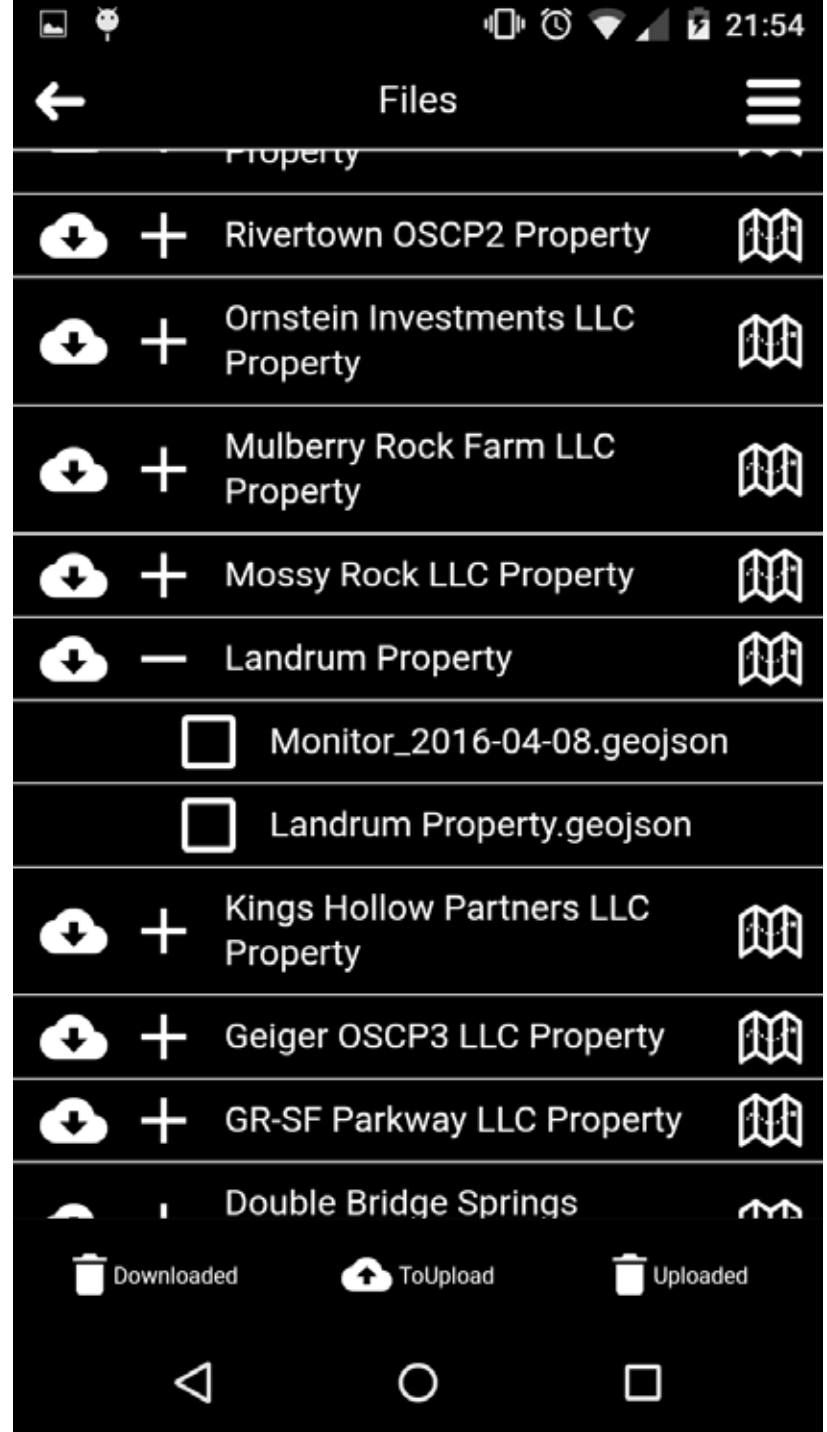


















Introduction



Files



Log Out

**Confirm**

You are about to logout.

OK Cancel



[Video](#)



# Chattahoochee Tech News

## UAV Course at Chattahoochee Tech to Take Flight in Fall

August 22, 2014 | By: Randy Brown



**(Acworth, Ga. – Aug. 22, 2014** This fall Chattahoochee Technical College will be taking to the skies with its first Unmanned Aerial Vehicle Technology class. A hot topic in today's technology, the UAV class will be held over two and a half days and feature lecture, simulation, and application through actual flying time during October at Chattahoochee Technical College's North Metro Campus in Acworth.

The concept of unmanned flight is not a new one.

Dating back to the 1800s and use of balloons, the technology has received more attention lately. Essentially, UAVs are aircraft with no pilot on board. They can be remote controlled aircraft or can fly autonomously based on pre-programmed flight plans or more complex dynamic automation systems.

In addition to military roles, UAVs serve where traditional alternatives are dangerous, monotonous, or too expensive. Some common roles include real estate marketing, commercial video production, utilities monitoring, and missing persons search crews. Additionally, many have become hobbyist by using the devices for leisure and entertainment through first person view (FPV) flights that were not practical before.

The course will be hands on and limited to approximately 20 people to ensure the best experience. Course fees run \$699 through Chattahoochee Technical College's Economic Development Division. The first course is scheduled to take place on the evening of Thursday, Oct. 16, during the day

- About Us
- Mission | Vision | Core Values
- General Education Philosophy
- Accreditations
- QEP (Quality Enhancement Plan)
- President's Message
- Board of Directors
- Executive Team
- Departmental Organizational Charts
- Jobs and Careers at CTC
- History of the College
- Annual Report
- CTC Viewbook
- 2014-2017 Strategic Goals and Objectives
- Outreach & Community Engagement
- Student Consumer Information
- Equal Employment Opportunity Policy Statement



# Pilot, FAA settle test case about legality of commercial use of drones

Raphael Pirker agrees to pay \$1,100 to end closely watched drone litigation.

by David Kravets - Jan 22, 2015 7:05pm EST

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Flight regulators and a drone pilot have settled litigation that was at the center of an ongoing battle over whether the Federal Aviation Administration may bar the commercial use of drones in the US.

Raphael Pirker was fined \$10,000 in 2011 in the government's first legal action against an on-the-ground pilot. Pirker was operating a 4.5-pound drone and was cited for illegally operating the plane for commercial purposes and operating it in a "reckless manner" while filming a commercial over the University of Virginia. He fought the citation, claiming that the government was enforcing a law against the commercial application of drones when there was no such law, among other things.

In March, he prevailed before an administrative law judge, a decision that was reversed in November. Along the way, the government began opening the door, albeit slightly, to the commercial use of drones, allowing them on a case-by-case basis. Hollywood, for example, was granted the right to make movies with drones last year.



Enlarge / Raphael Pirker  
Official Leweb Photos



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## Three Categories of Unmanned Aircraft Systems

- 1) Public Operations (Governmental)
- 2) Civil Operations (Non-Governmental)
- 3) Model Aircraft Operations





## Three Categories of Unmanned Aircraft Systems

### 1) Public Operations (Governmental)

Public Aircraft Operations are limited by federal statute to certain government operations within U.S. airspace. Title 49 U.S.C. § 40102(a)(41) provides the definition of "Public Aircraft" and § 40125 provides the qualifications for public aircraft status. Whether an operation qualifies as a public aircraft operation is determined on a flight-by-flight basis, under the terms of the statute. The considerations when making this determination are aircraft ownership, the operator, the purpose of the flight, and the persons on board the aircraft.





## Three Categories of Unmanned Aircraft Systems

### 2) Civil Operations (Non-Governmental)

Any operation that does not meet the statutory criteria for a public aircraft operation is considered a civil aircraft operation and must be conducted in accordance with all FAA regulations applicable to the operation.

There are presently two methods of gaining FAA authorization to fly civil (non-governmental) UAS:

Section 333 Exemption – a grant of exemption in accordance with Section 333 AND a civil Certificate of Waiver or Authorization (COA); this process may be used to perform commercial operations in low-risk, controlled environments.

Special Airworthiness Certificate (SAC) – applicants must be able to describe how their system is designed, constructed, and manufactured, including engineering processes, software development and control, configuration management, and quality assurance procedures used, along with how and where they intend to fly.



## Three Categories of Unmanned Aircraft Systems

### 3) Model Aircraft Operations

Model aircraft operations are for hobby or recreational purposes only.

The FAA has partnered with several industry associations to promote Know Before You Fly, a campaign to educate the public about using unmanned aircraft safely and responsibly. Individuals flying for hobby or recreation are strongly encouraged to follow safety guidelines, which include:

- Fly below 400 feet and remain clear of surrounding obstacles
- Keep the aircraft within visual line of sight at all times
- Remain well clear of and do not interfere with manned aircraft operations
- Don't fly within 5 miles of an airport unless you contact the airport and control tower before flying
- Don't fly near people or stadiums
- Don't fly an aircraft that weighs more than 55 lbs
- Don't be careless or reckless with your unmanned aircraft – you could be fined for endangering people or other aircraft

# Three Categories of Unmanned Aircraft Systems

## 3) Model Aircraft Operations



**Do I need approval from the FAA to fly a model aircraft for recreation or hobby?**

No. FAA guidance says that model aircraft flights should be flown a sufficient distance from populated areas and full scale aircraft, should be kept within visual line of sight of the operator, should weigh under 55 lbs unless certified by an aeromodeling community-based organization, and are **not for business purposes**.



800 Independence Ave. S.W.  
Washington, D.C. 20591

May 11, 2015

Exemption No. 11515  
Regulatory Docket No. FAA-2015-0438

Mr. Neil C. Johnston  
Ms. Carolyn B. Jones  
Counsel for Atlantic Coast Conservancy, Inc.  
Hans Arendall LLC  
RSA Tower  
11 North Water Street, Suite 30200  
Mobile, AL 36602

Dear Mr. Johnston and Ms. Jones:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated February 19, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Atlantic Coast Conservancy, Inc. (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial photography, mapping, surveying, and inspection.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

**Airworthiness Certification**

The UAS proposed by the petitioner is a DJI Phantom 2 Vision+.

### Unmanned Aircraft Systems

- News
- FAQs
- Public Operations (Governmental)
- Civil Operations (Non-Governmental)
- Model Aircraft Operations
- Small UAS Notice of Proposed Rulemaking (NPRM)
- UAS Registration
- No Drone Zone
- Law Enforcement Resources
- Key Initiatives
  - Test Sites
  - Center of Excellence (COE)
  - Section 333** →
  - Authorizations Granted
  - FAQs
  - How to File a Petition
  - Focus Area Pathfinders
  - UAS in the Arctic
  - UAS Roadmap

## Section 333

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**i** Due to the high volume of Section 333 petitions received, we are experiencing delays in processing petitions. We will do our best to process petitions being posted to the docket as soon as possible, and in the order they were received. We appreciate your patience as we work diligently to process your request.

Petitions Granted	Petitions Closed
5,163	399
As of	

### Top Tasks

- Read about the draft rule for small UAS
- View FOIA Responses
- Apply for a Section 333 exemption
- Connect with a UAS Test Site
- Contact the UAS Integration Office

By law, any aircraft operation in the national airspace requires a certificated and registered aircraft, a licensed pilot, and operational approval. Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA) (PDF) grants the Secretary of Transportation the authority to determine whether an airworthiness certificate is required for a UAS to operate safely in the National Airspace System (NAS).

This authority is being leveraged to grant case-by-case authorization for certain unmanned aircraft to perform commercial operations prior to the finalization of the Small UAS Rule, which will be the primary method for authorizing small UAS operations once it is complete.

The Section 333 Exemption process provides operators who wish to pursue safe and legal entry into the NAS a competitive advantage in the UAS marketplace, thus discouraging illegal operations and improving safety. It is anticipated that this

### What can you do with your unmanned aircraft?





# Legend

 Mullinax Partners LLC property



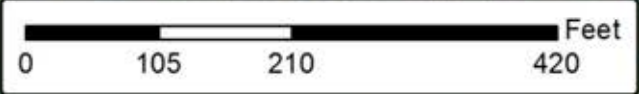
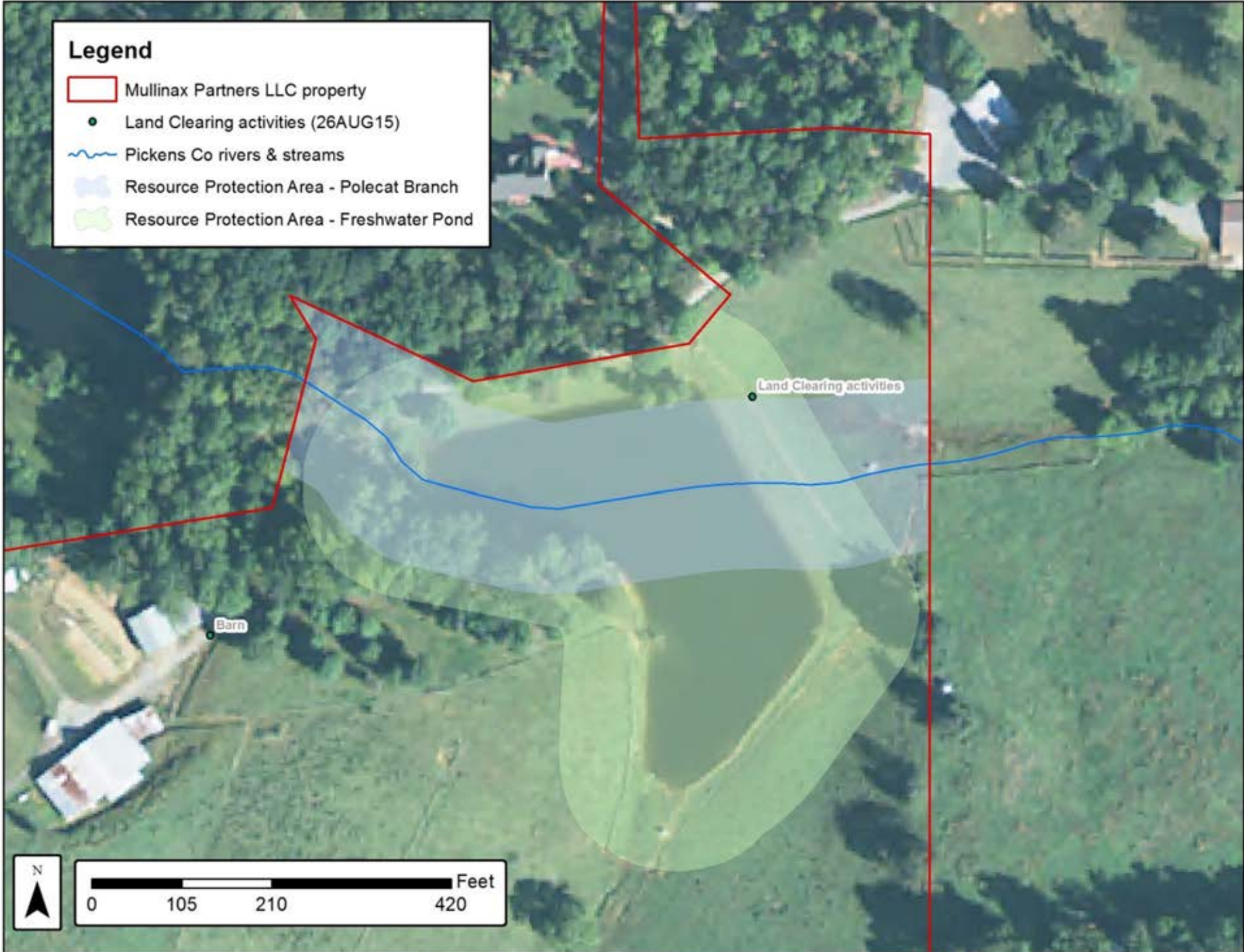
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2013 True Color National Agriculture Imagery Program imagery (1 meter res.) (1:8,000 scale)  
Obtained from the Georgia Spatial Clearinghouse  
<http://www.georgiaspatial.org>



### Legend

-  Mullinax Partners LLC property
-  Land Clearing activities (26AUG15)
-  Pickens Co rivers & streams
-  Resource Protection Area - Polecat Branch
-  Resource Protection Area - Freshwater Pond



10SEP14




26AUG15

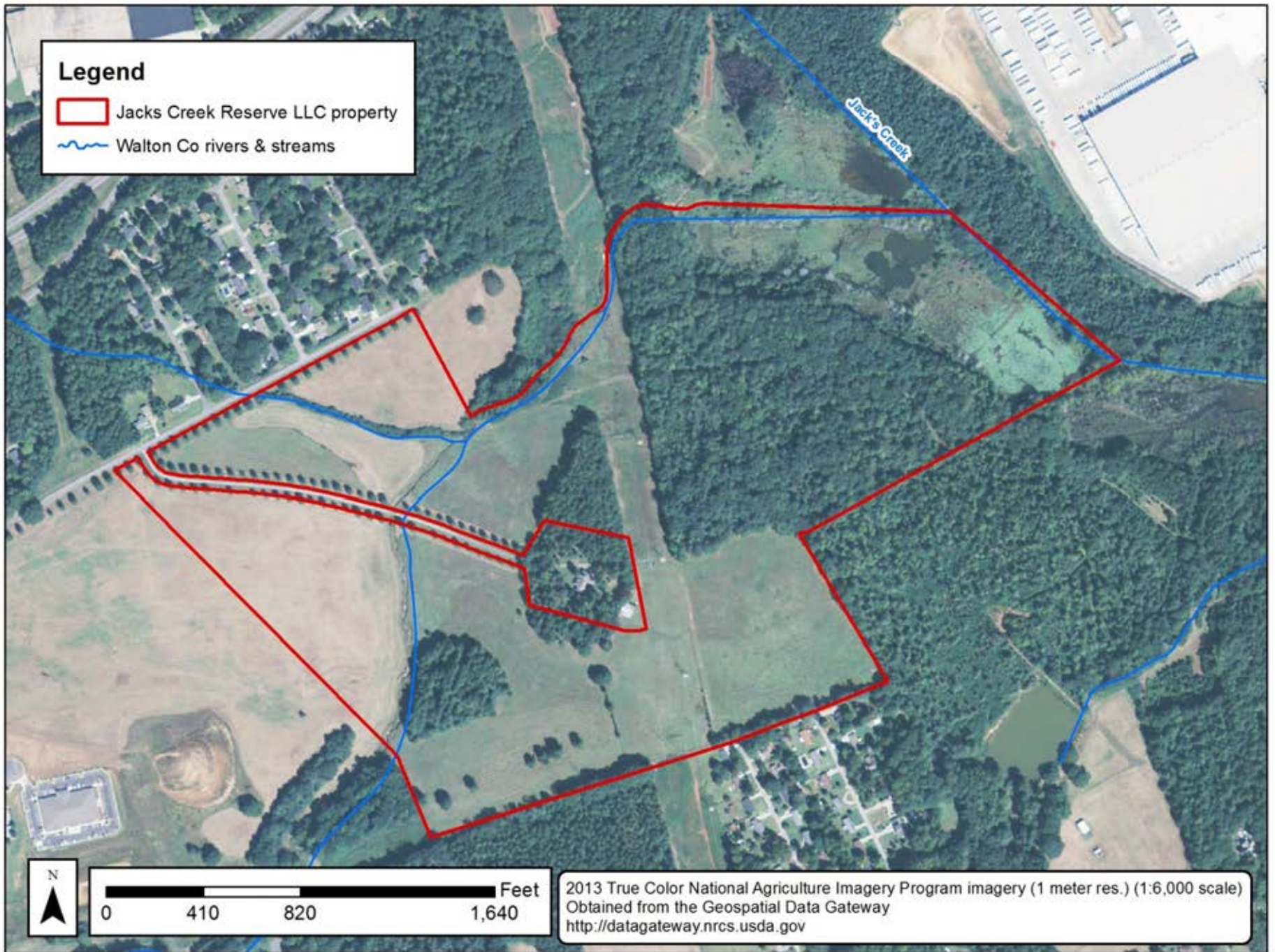


[Video](#)

## Legend

 Jacks Creek Reserve LLC property

 Walton Co rivers & streams



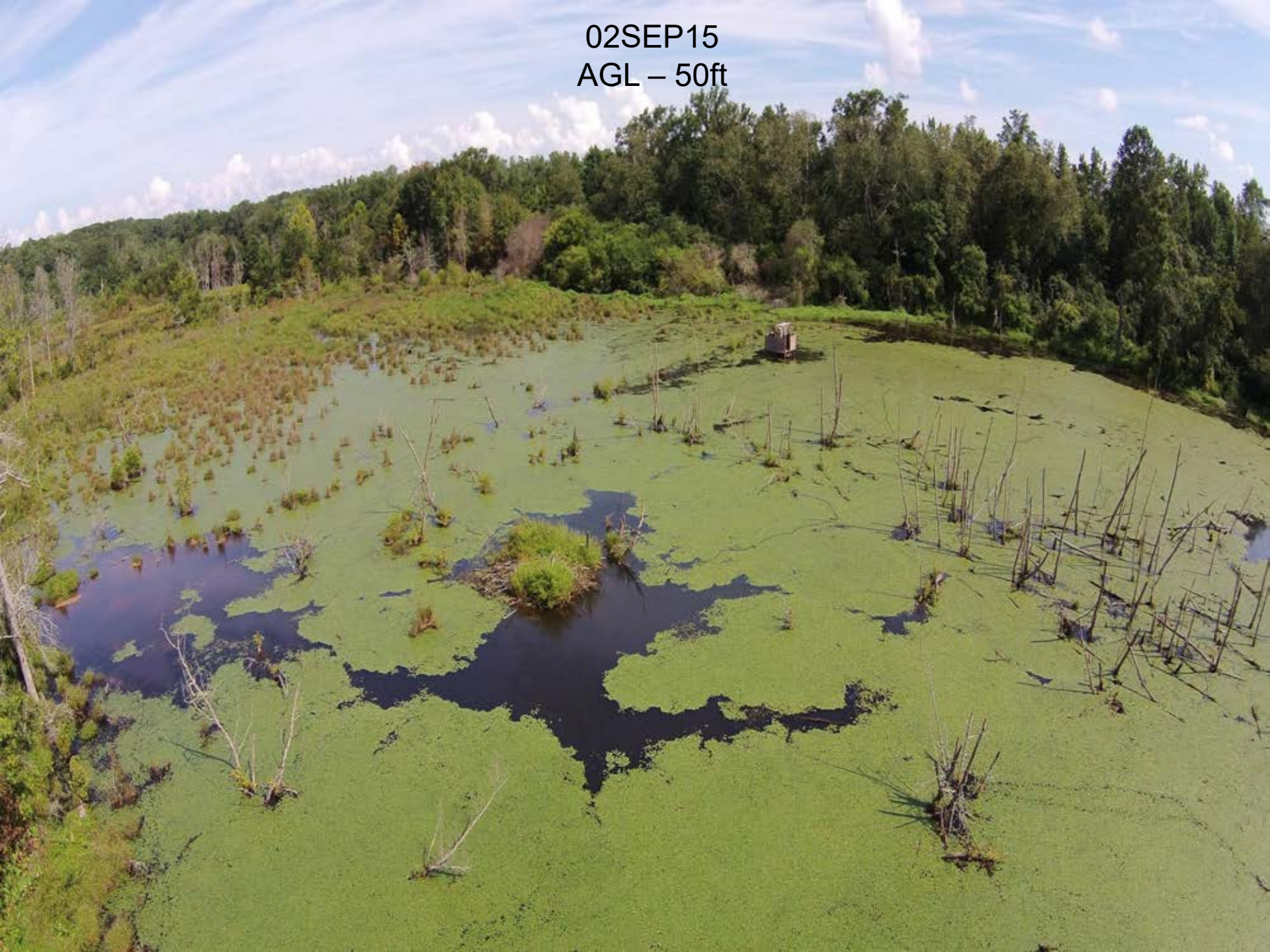
2013 True Color National Agriculture Imagery Program imagery (1 meter res.) (1:6,000 scale)  
Obtained from the Geospatial Data Gateway  
<http://datagateway.nrcs.usda.gov>



02SEP15  
AGL – 200ft



02SEP15  
AGL – 50ft



02SEP15  
AGL – 50ft



[Video](#)

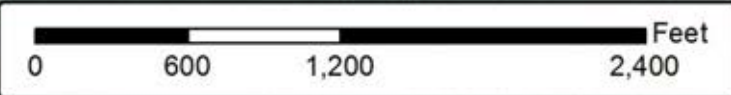


02SEP15  
AGL – 35ft



## Legend

 Dauphin Island Park & Beach Board - Audubon Sanctuary



2013 True Color National Agriculture Imagery Program (NAIP) imagery (1 meter res.) (1:8,000 scale)  
Obtained from the Geospatial Data Gateway  
<http://datagateway.nrcs.usda.gov>

# Oleander Pond



[Video](#)

# Raised walkways



[Video](#)

# Hacking Platform



# Hacking Platform



[Video](#)

# Hacking Platform



[Image](#)

# Alligator Lake



[Video](#)






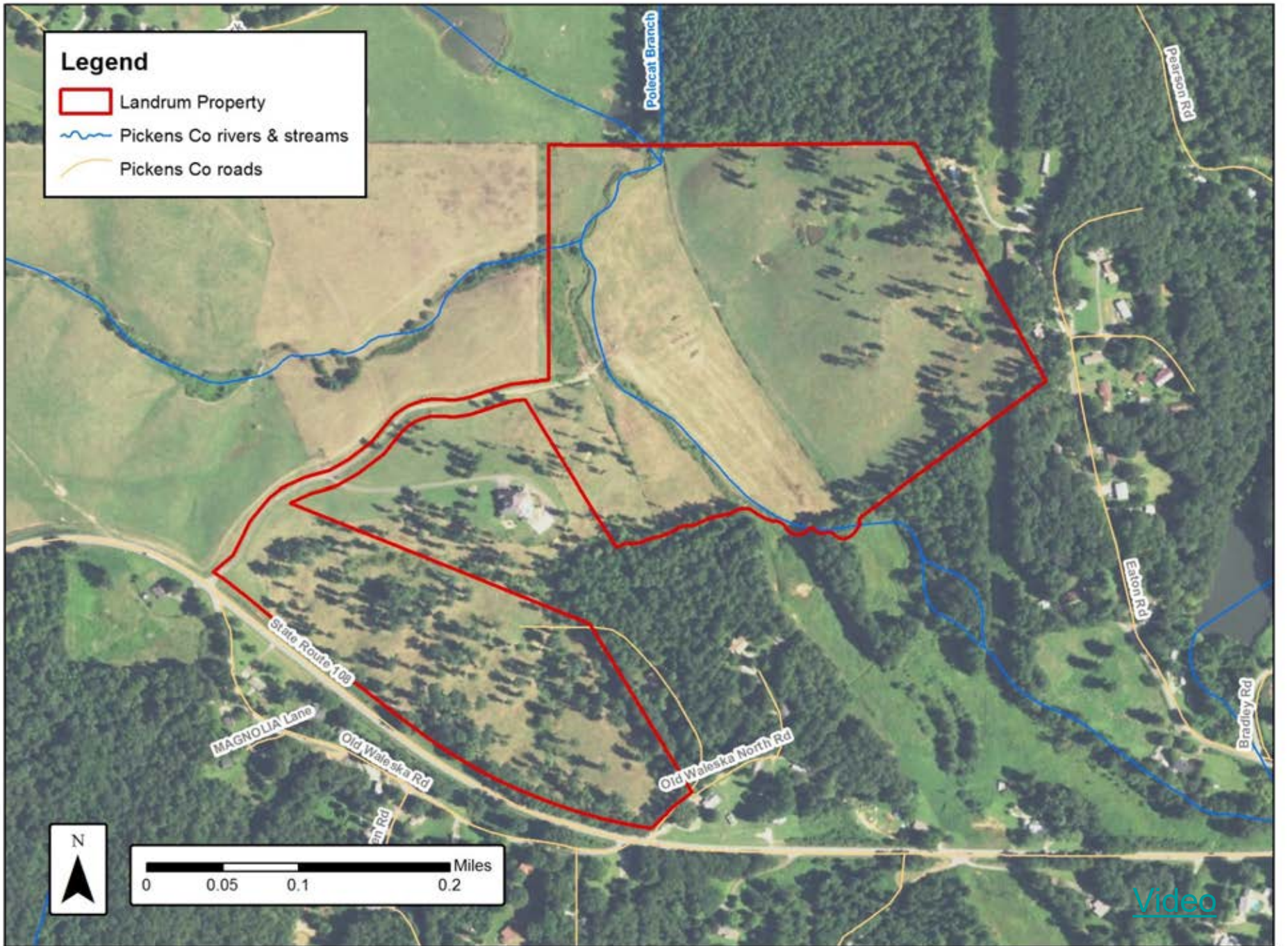
# Alligator

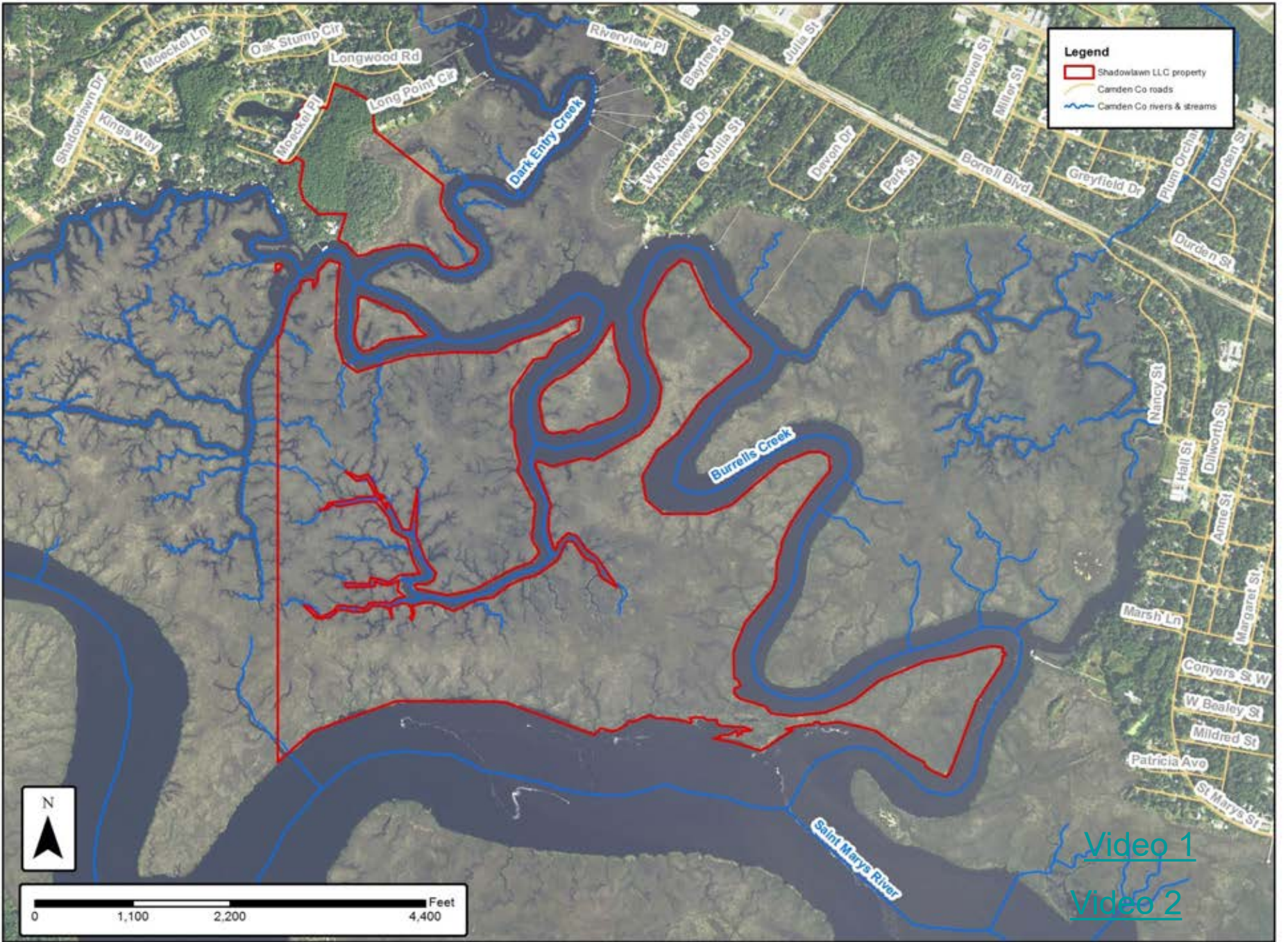


[Video](#)

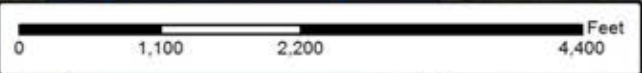
# Legend

-  Landrum Property
-  Pickens Co rivers & streams
-  Pickens Co roads





**Legend**  
Shadowlawn LLC property  
Camden Co roads  
Camden Co rivers & streams



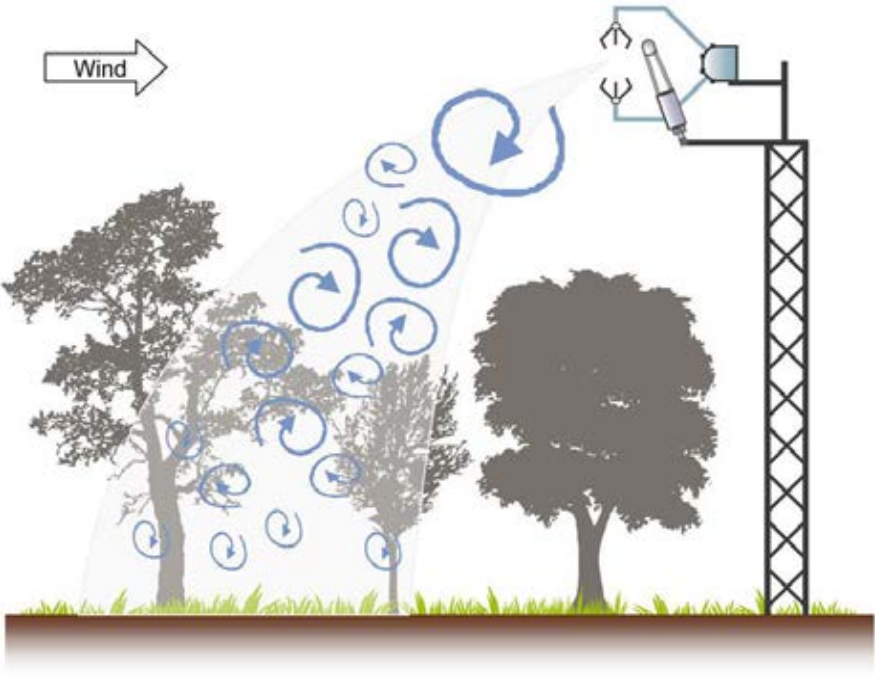
[Video 1](#)  
[Video 2](#)

# Future Applications

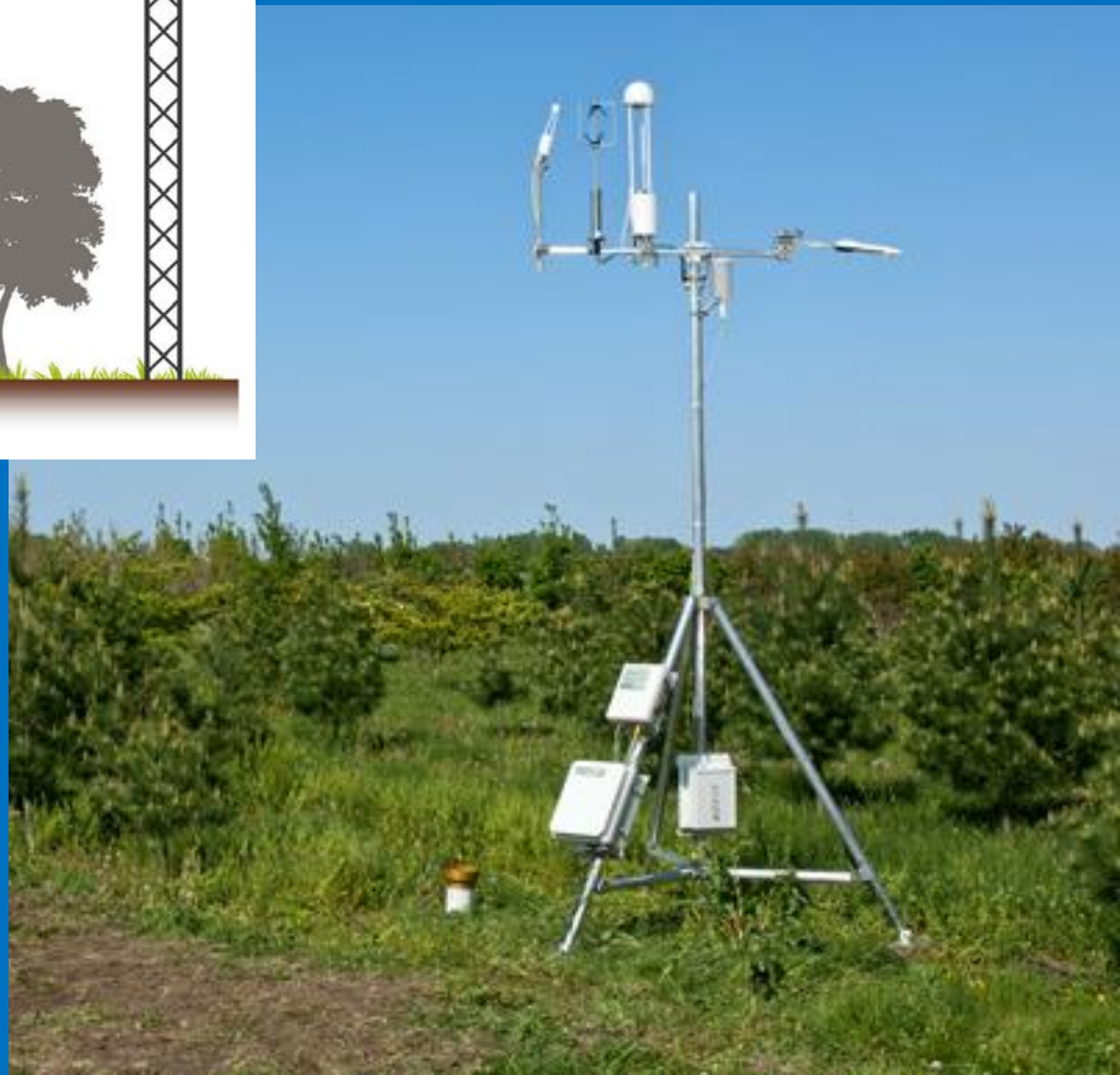




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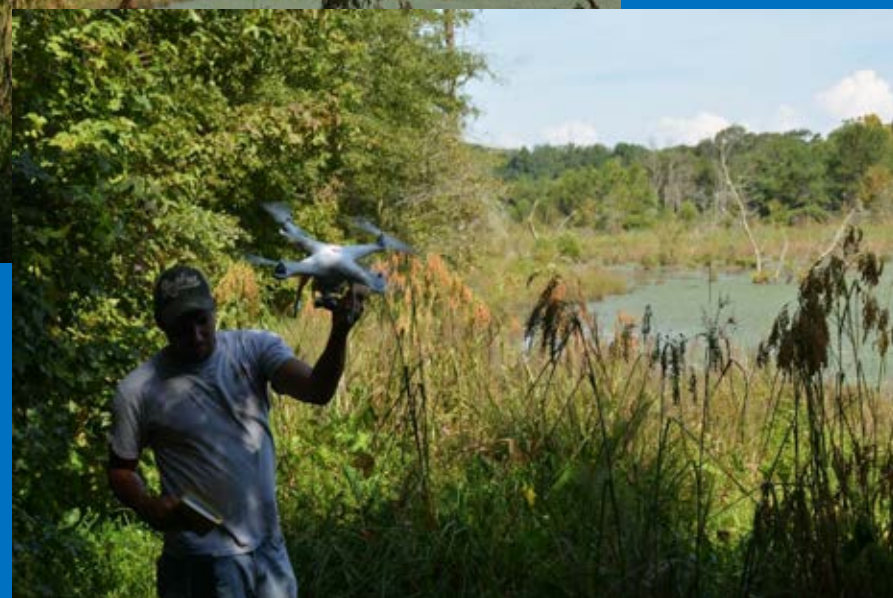
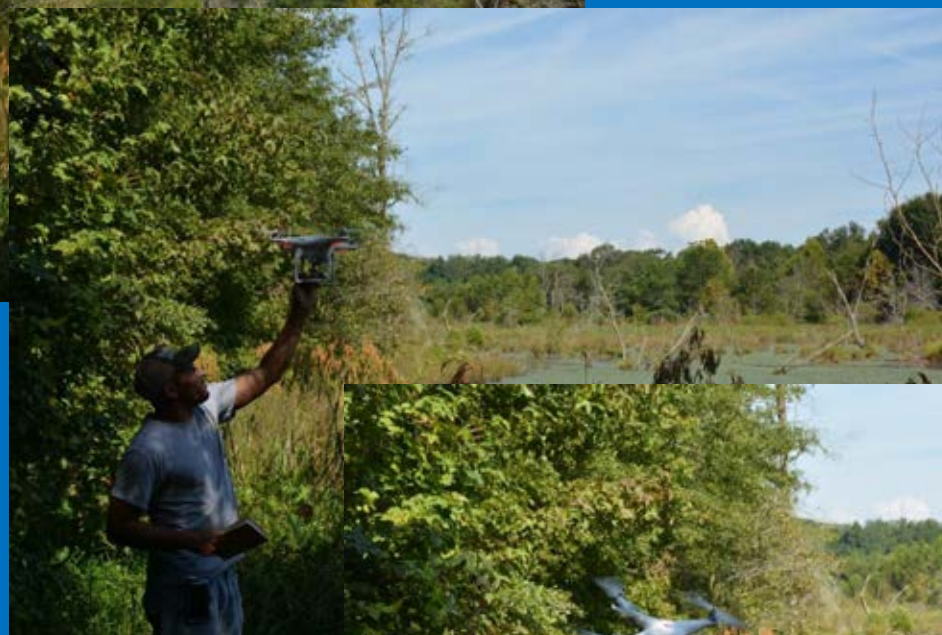


Eddy Covariance Flux tower





Video



[Video](#)