

Unmanned Aircraft and the Natural Resource Agency

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Arkansas Game and Fish Commission

Arkansas AFS Chapter Meeting

Pine Bluff, AR

24 January, 2018



Outline

- I. **AGFC Drone Operations Timeline**
- II. Considerations for use of drones by agencies/universities
- III. Use of drones by public over state agency property
- IV. Future



AGFC Timeline – Activities to Date

2013	GIS division investigates buying drone for mapping
Jan 13 2014	Purchase of 2 quadcopters complete
Jan 15 2014	FAA institutes rules which require a pilot license



First flight Feb 2, 2017

Three generations old at this point

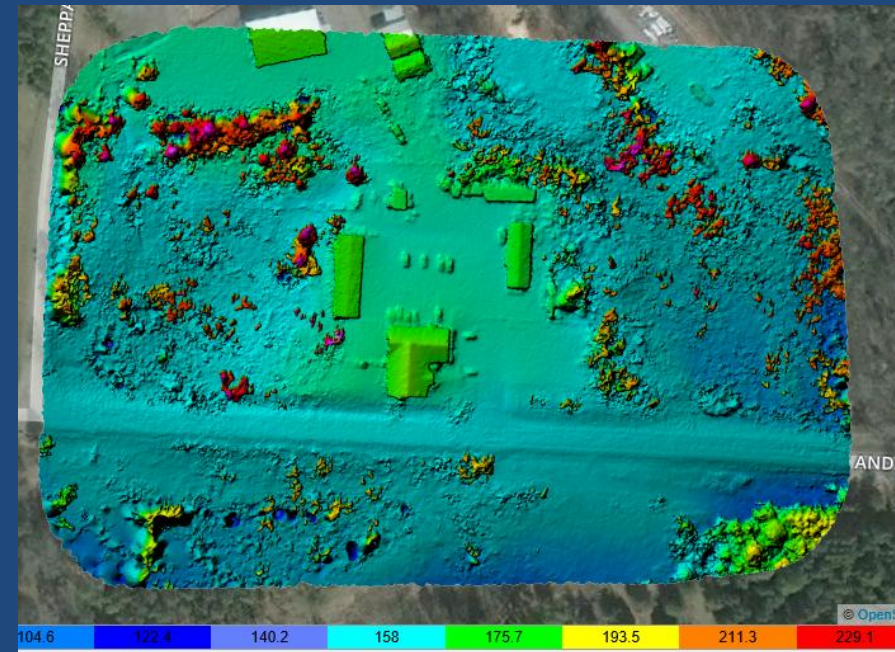
Images not georeferenced by camera

Can produce small area orthomosaics



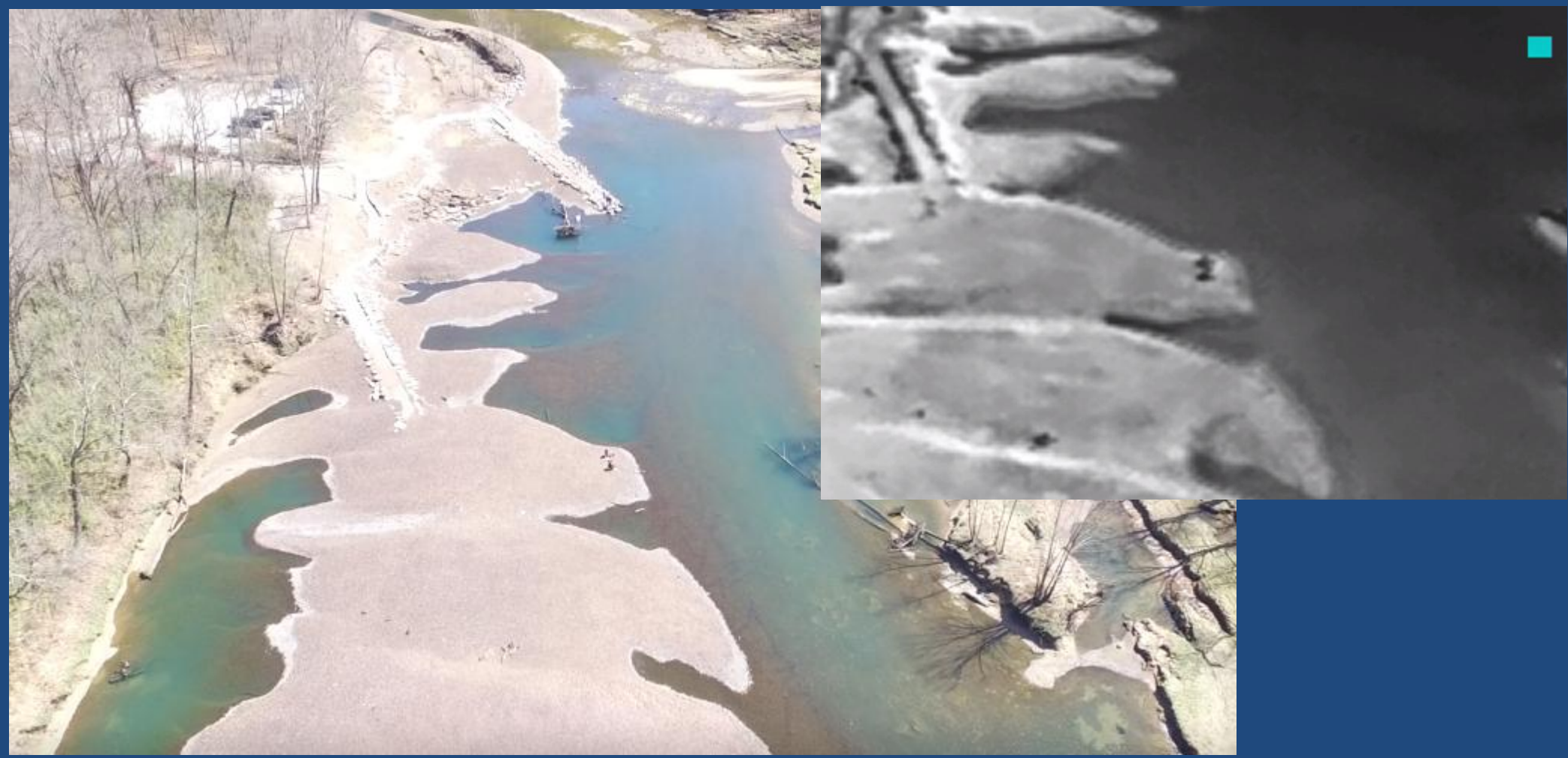
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	2013	GIS division investigates buying drone for mapping
Jan 13	2014	Purchase of 2 quadcopters complete
Jan 15	2014	FAA institutes rules which require a pilot license
Nov	2016	Drone Working Group reformed
Jan 29	2017	First Remote Pilot certificate issued to AGFC personnel
Feb 2	2017	First flight of AGFC drone
Feb	2017	Small scale test flights



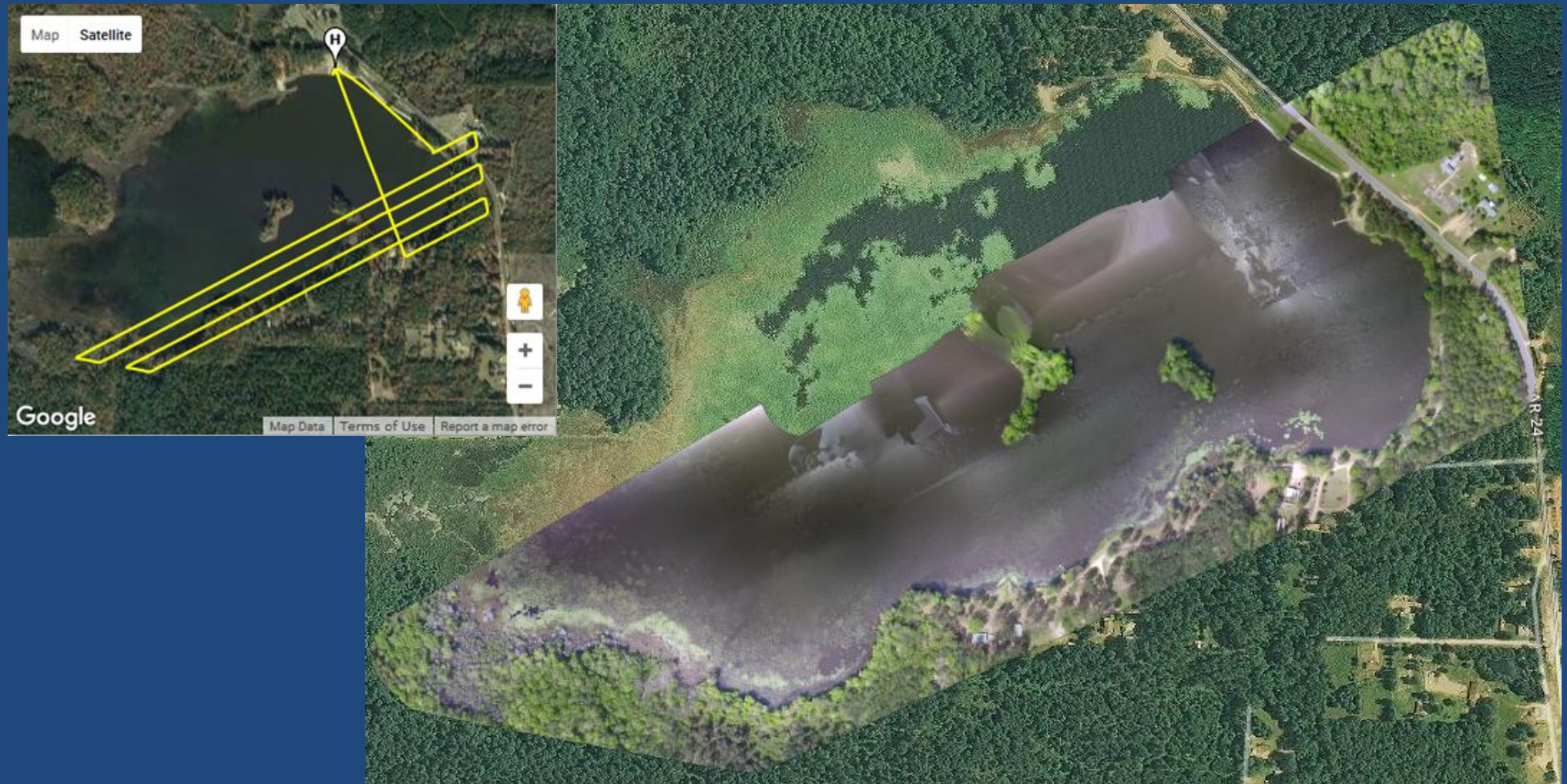
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Mar 10	2017	Beaver Tailwater Aerial Creel Phase I (with ATU/USACE)



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Feb 2	2017	First flight of AGFC drone
Feb	2017	Small scale test flights
Mar 10	2017	Beaver Tailwater Aerial Creel Phase I (with ATU/USACE)
Apr 8	2017-Present	Bragg Lake Vegetation Survey



AGFC Timeline – Activities to Date

Apr – Oct 2017

June 16

July 5

July 14

Beaver Tailwater Aerial Creel Phase II (with ATU/USACE)

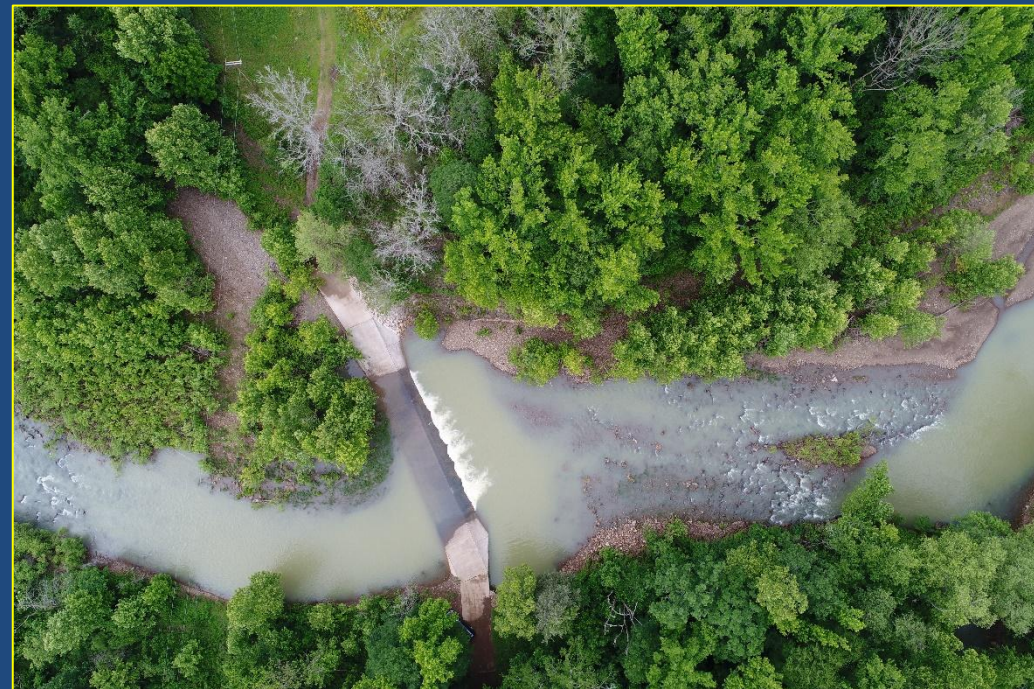
Choctaw WMA (Wildlife-King Rail project)

Poole Slab Removal (Procedures Development)

Catfish LFE Feasibility



80m



115m

Images scaled to same dimensions, not cropped
Originals much higher resolution

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AGFC Timeline – Activities to Date

July 14 2017

Sep – Nov

Sep 27, 2017

Oct

Jan 2018

Catfish LFE Feasibility

Shoreline surveys (Sugarloaf, Monticello)

COA issued

Vegetation Assessment (Conway, Mercer Bayou)

First Pilot Training Class



1 Sep 2017

Lake Monticello



14 Nov 2017

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Use of Drones by an Agency (FAA Rules)

Hobbyist

No practical means to qualify when conducting work or research.

“If you’re flying your aircraft, on your own time, for your own spiritual enlightenment, you’re ok.”

- FAA inspector to Wes Cleland



Section 333 exemption

Obsolete commercial use rules

Limitations unique to each exemption

Some vendors may still be using until end of year 2018



Use of Drones by an Agency (FAA Rules)

Part 107 (Civil Aircraft)

Remote Pilot certificate

55 lbs or less

400 ft AGL max

3 miles visibility

Daylight only

87 kts (100 mph) max speed

Yield right of way

No operation from moving vehicle*

No operation over people

Class G airspace

Almost all limitations waiverable

COA (Public Aircraft)

Limits established on a per-operator basis

No license requirement (self certify)

Pre-establishes links to ATC

AGFC received COA in Sep 2017

- First state agency with COA
- First pilot training class Jan 2018



Use of Drones by an Agency (FAA Rules)

AGFC Pilot Training

4 days – Airspace, Weather, NOTAMS, Operating Limitations, Procedures
External Speakers – AR Ag. Aviator Association, USFS
Written Test, 80% to pass
Hands-on Component



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Use of Drones on Agency Property

US Army Corps of Engineers

Prohibited without permission of district commander
Statutory Authority: 36 CFR 327.4

US Forest Service

MOU or Special Use Permit required (complex approval)
Statutory Authority: 36 CFR 251.50 (et al)

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Arkansas State Parks

Prohibited without permit from Director
Asks for pilot certificate, liability insurance, flight plan, drone registration

Arkansas Game and Fish Commission (Drone Working Group)

Permission letter at District Supervisor Level
Ask for pilot certificate, liability insurance, flight plan, drone registration
Can not harass animals from an aircraft (AGFC 05.07)

University of Arkansas

Prohibited without permission of Provost or Vice-Chancellor
Formal Temporary Flight Restrictions during certain sporting events

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The State of Arkansas does not claim airspace sovereignty.
No private airspace rights exist.
All agency/university policies unlikely to stand up in court.



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AGFC Research Needs

Pilot Training/Pilot Proficiency Standards

~~Causes of sUAS flight terminations~~ (Fernando, 2017)
Minidrones (with ATU)

Fleet Management

Mean-Time-to-Failure (components, airframes)
Recordkeeping

Procedure Development

Comparison between existing methods and sUAS
~~Angler Pressure Counts~~ (Fernando, Short, Nault, mss in prep)

Vegetation Assessment Procedures

Bragg Lake

Mercer Bayou

Lake Monticello

Lake Conway

Development of new methods

Radio telemetry

Water sampling

Acknowledgements

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Kristine Paxson	US Forest Service
Matt Schoeder	AGFC
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Jennifer Sloan	Arkansas Tech (AGFC Intern)
Christine Smith	US Army Corps of Engineers
Mike Sundberg	AGFC
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Questions?

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