



Oconee River Land Trust
Drone Studies



Project Plan

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Project Goals

Reach Goal:

We want to make a product that will allow the Oconee River Land Trust, and eventually other Land Trusts and Government Agencies, to monitor their conservation easements without walking the thousands of acres of land on foot. We further want the product to work with the drone footage and be able to identify the land itself. Ideally, the footage would not have to be reviewed by anyone, and the software could identify the types of land and whether or not it has changed/violated the conservation easement regulation. The user would simply connect the product and the drone, and the product would recognize the types of land and if changes have occurred.

We additionally want the Oconee River Land Trust and anyone else who uses this product to be able to operate it on their own with ease. The Land Trust or Government Organization would need to provide their own drone, but the product would connect with the drone, be user friendly, and allow for easy monitoring of the conservation easements.

Main Goal:

Our main goal is to simply produce a final product that our client can use to their benefit. In addition to the simple request for aerial drone footage for the Oconee River

Land Trust website, we want to make a product that will allow them to monitor their easements without walking the thousands of acres of land on foot. We want the footage we get from the drones to be digitally comparable from year to year so the Land Trust can recognize if the easement regulations have been followed. In essence, the product could compare the same piece of land from 2019 to 2020 and be able to note if any of the identifiable types of land have grown or shrunk. It would be able to identify any new buildings placed on the land or if any of the land has changed from one type to another (for example, forest to farmland).

We, again, want the Oconee River Land Trust and anyone else who uses this product to be able to operate it on their own with ease. The Land Trust or Government Organization would need to provide their own drone, but the product would connect with the drone, be user friendly, and allow for easy monitoring of the conservation easements.

Safety Goal:

Our safety goal is to use the drones and at the very least, take footage that can be viewed manually to notice if anything has been altered since the last regulation check. While this isn't the ideal goal, it would still make the jobs of the Oconee River Land Trust easier because they wouldn't have to walk the thousands of acres of land on foot. The drone would capture the footage, the Oconee River Land Trust could bring it back to the office, and monitor the land on their computer.

We, even with our safety goal, want the Oconee River Land Trust and anyone else who uses this product to be able to operate it on their own with ease. The Land Trust or Government Organization would need to provide their own drone, but the product would connect with the drone, be user friendly, and allow for easy monitoring of the conservation easements.

Challenges

Refining our project

With our client, we have been given a great amount of freedom to choose what we think will best benefit them. Our client's primary goal is to capture aerial shots of a property, or multiple properties, that are protected by the Oconee River Land Trust so they have visuals for their webpage. Beyond that, we have decided to use this drone footage and create a product that can identify whether or not the conservation easement regulations are being followed. While it took our group a while to gain any traction, we came to the conclusion that the best option for this class and for the Oconee River Land Trust is to better help them monitor the easements in a way that is less taxing, time consuming, and harmful to the natural state of the land.

In addition, with minimal exact needs of our client, there is potential for them to be lacking in their feedback as they have no expectations. We will be meeting with Laura regularly to make sure we are on the right track.

General Drone Concerns

None of our team members are overly familiar with drone technology or drone laws. It is crucial to our project that any group member planning to use the drone understand the device and how to pilot it, as well as all safety and legal precautions. In addition, we may also struggle with our access to drones as none of us have pilot licenses nor are we drone insured. To combat these challenges, we have already completed research on drone laws within Georgia and our county and have taken note of these. We will also have a drone instructional day with NMI Drone Pilot Chris Gerlach to further supplement our drone knowledge and provide us with some skills and tips for piloting

the drones. As our access to drones may be limited, we will likely have to be very effective with our scheduling to ensure all 4 group members can be on our outings, as well as ORLT land steward Laura Hall and NMI's Chris Gerlach, as students in Georgia may drone with a licensed drone pilot accompanying them.

Project Plan

Due dates are rough estimates.

All plans subject to change dependent on external circumstances and group needs.

Post-production workflow:

https://docs.google.com/spreadsheets/d/1y8ZDzh_OvKYnJYwfLP8yoNcwQjHcAb_rkYzdvG0xcwxo/edit?usp=sharing

Checkpoint I: Thursday, January 30 (1/30)

Due: Alpha + project research + project plan + PR/FAQ

Tuesday, January 28 (1/28)

- Review all materials due; confirm project plan
- Complete and practice presentation; (assign slides)

Checkpoint II: Tuesday, February 25; (2/25)

Due: Beta + user research + UX map; Peer Evaluations 1

January 30- February 6

- Contact Christ Gerlach

- Coordinate schedules; Need possible dates available for (a) initial drone flight practice and testing of mapping application and (b) visits to properties with ORLT
- Contact Laura Hall
 - Which property(ies) would we like to visit; a few possible dates (first visit by **February 18**)
 - MUST confirm land owners are ok with us droning over properties and incorporating footage in video that may be used publicly
 - Get some baseline images to help with mapping
- Plan for drone flight practice between **February 2-9**

February 7- February 13

- Aim to have flight practice with Chris **before February 9**
- Use footage from flight practice to test mapping application; which one is best?
- Make sure we have equipment needed. Plan to check out anything we may need besides drones from the FESR or MLC in advance

February 14- February 20

- Visit one property **before February 18**
- Upload footage to hard drive for backup
- Upload footage to mapping application
- Review footage together
 - Share footage with Laura.
- Decide if more footage is needed. If so:
 - Decide on a few dates/location. Contact Laura and Chris Gerlach to confirm best date for both (Chris first, then Laura).
 - **WOULD NEED FOOTAGE BY FEBRUARY 27**
- **February 20:** Have presentation for Checkpoint II completed to perfect and practice over weekend

February 21- February 25

- **Try to meet 1-2 times with Laura before Spring Break**

Checkpoint III: Tuesday, March 24; (3/24)

Due: 1.0 + finalized visual design document + project website beta; Peer Evaluations 2

February 25-March 5

- **All footage collected by February 27**
 - Share with Laura

March 6 -March 17 (MARCH 8-15 SPRING BREAK WEEK)

- Review Project website by **March 19 class**

March 18-March 24

- **Meet with Laura before Checkpoint III**

Checkpoint IV: Tuesday, April 14; (4/14)

Due: 1.1 + launch / social deliverables + stage presentation beta + resume

March 24-March 31

- Brainstorm ideas for Slam booth
 - Come to class with ideas to discuss **by March 31 class**
 - Have materials needed by **April 9**

March 31- April 7

- Send out *Capstone Client Feedback assignment* to client for teachers (**by April 8**)
- Prepare presentations, **by April 9 class**

April 8-April 14

- Practice presentation **April 9 class** OR *get together over weekend*

NMI SLAM: (all deliverables due): Saturday, April 25; (4/25)

April 15-April 23

April 23-April 25

- Review (possible?) presentations. Practice.
- Review final deliverables before submitting