

SWCA

**DEVELOPING A DATA COLLECTION
PLATFORM FOR MOBILE DEVICES:
SOUTHWESTERN WILLOW FLYCATCHERS
CASE STUDY**



WHY DIGITAL DATA COLLECTION?

- No (or minimal) data entry post field collection
- All data housed in one geodatabase
- Speedier access to data (for managers)
- Visually more complete package of navigation tools

Training is essential!



FIRST CONSIDERATIONS: HARDWARE

- Tablets
 - Ruggedness
 - Dust, Water, Vegetation, Heat
 - GPS receiver
 - Battery life
 - Accessories
- Smart Phones
- Operating System
 - iOS vs Android
 - Upgradeable?



FIELD DATA COLLECTION NEEDS

- Work “offline”
- Navigation in the field
- Quickly record point locations with simple attribute data
- Refer to some previously collected data
- Be able to enter more complex data later
 - Record as field notes in the field



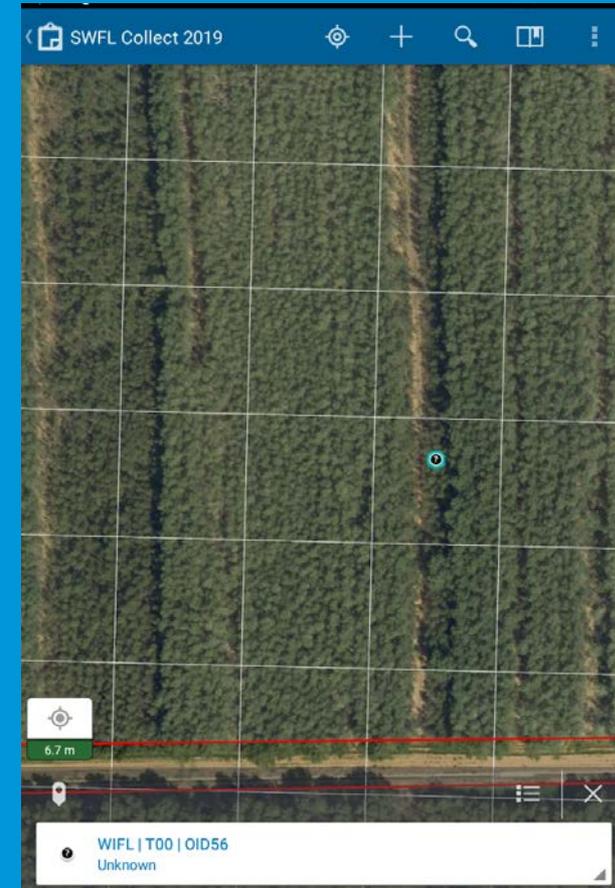
DATA COLLECTION SOFTWARE



COLLECTOR



- More visually-oriented app
 - Customize background imagery
 - Background layers to aid navigation/ coverage within project area
 - View tracks of area which has been traversed
 - Can view all collected data at once (older data, too)



COLLECTOR



- Simple forms
 - Text / numerical
 - Drop-down menus
 - Auto-date/time fields
- Can attach photos to features
- Can relate Survey123 forms to collected features

✓ DONE STOP

Averaging 0 of 5

WIFL Detection: () -
Missing location

DETECTION TYPE
<No value>

TERRITORY ID

BEHAVIOR
<No value>

OFFSET
<No value>

OFFSET BEARING

OFFSET DISTANCE

AREA-SITE
<No value>

COMMENTS

SURVEY123



- Projects with form-based data collection
 - Repeat visits to pre-determined locations
 - Can create complex data forms that appear simple and user friendly
- Annotating maps, pictures, or files while in the field

D2 SWFL iButton

Territory ID
The Territory ID from Collector.

Serial Number
Enter the serial number.

Set Up or Take Down
Is this a set up or take down?
Take Down

Event occurred?
Did any events occur that might affect the data?
 1 Yes 2 No

Event Description
Describe the events.

Comments
Enter comments.

FIELD NOTES

- Old faithful: Rite in the Rain
- OneNote 
- Google Keep 

5-28-19 BIWI

Tuesday, May 28, 2019 5:28 AM

TASKS FOR THE DAY:
Check territories 23 and 22.
Check in with Julie at 0800.

515 arrived at planet ranch road. Walking to Site 08.

0600 took photo from road, looking at dead popf.
Adult and larval beetles on tansip along road

0633 at T23 center

Been in the vicinity for a while, flagging trail, heard nothing
0643 hear whits on far side of pond. Looks like an emoid, but far away (40 m), can't tell more than that.

0655 Heard willy sounding squabble up in poofa SE of T center, and a small bird bombed over into salpoo clump where SRN had interaction. Don't know if it was an emoid.

0703 FBs across water at 45 deg. Sounds fast, zippy. Got an answering whit and fitzbee on my side of the water. Then there was a willy sounding tussle on my side of the water and a flycatcher flew low in front of me, perched briefly low in Tammies on pond edge and flew off.

Maybe went across the water to where I heard the first whits.
and then there was another 15 mins of silence.

0723 played some fitzbees. Got an answering whit from NE across water. Played some whits and got a brief FB response from nearby to the West, bird flew in low, same place I had low close bird before, only a couple of FBs, then silence. Nobody seems territorial. I think it's two migrants. Played a few more whits and subbees. Nothing further. Hung a flag for T41, which is what I called the bird across the water to the NE. Did not cross the water to hang a flag where I heard the bird. No resight on anybody.

0748 leaving.

0800 messaged Julie via in reach. Got answering message.

05/20/18 Wispy Willow/Site 1

Sunday, May 20, 2018 6:00 AM

0624 @ * (LW) KLA:
♂ singing all the way in,
including S of trail jctn
in S part of site.

went to interactions post
(made lay) - nothing.

went to area N of ♂ ctr
where whits were heard
last v, couple whits but
believe it was just the male
this time. No Δ int.

♂ did seem infrequently
near ♂ ctr but we wd
not find any signs of f.

This guy flies from one end of the site
to the other. Watched him fly from SE of
x4 area back across marsh to x3.
Tried to use p.b. to resight - no dice
He stays high & moves as soon as you
can see him.

EE on L - banded on L, very
likely a slightly faded EE. In sun,
glinting brightly, see no pinstripes.
In shade of his wing, without sun
reflecting off band, it looks EE.

NEED THE SCOPE! Could not see R leg.
Saw him again. Both legs banded.

Shape on R looks fed, L color-banded.
Something shiny over yellow? -

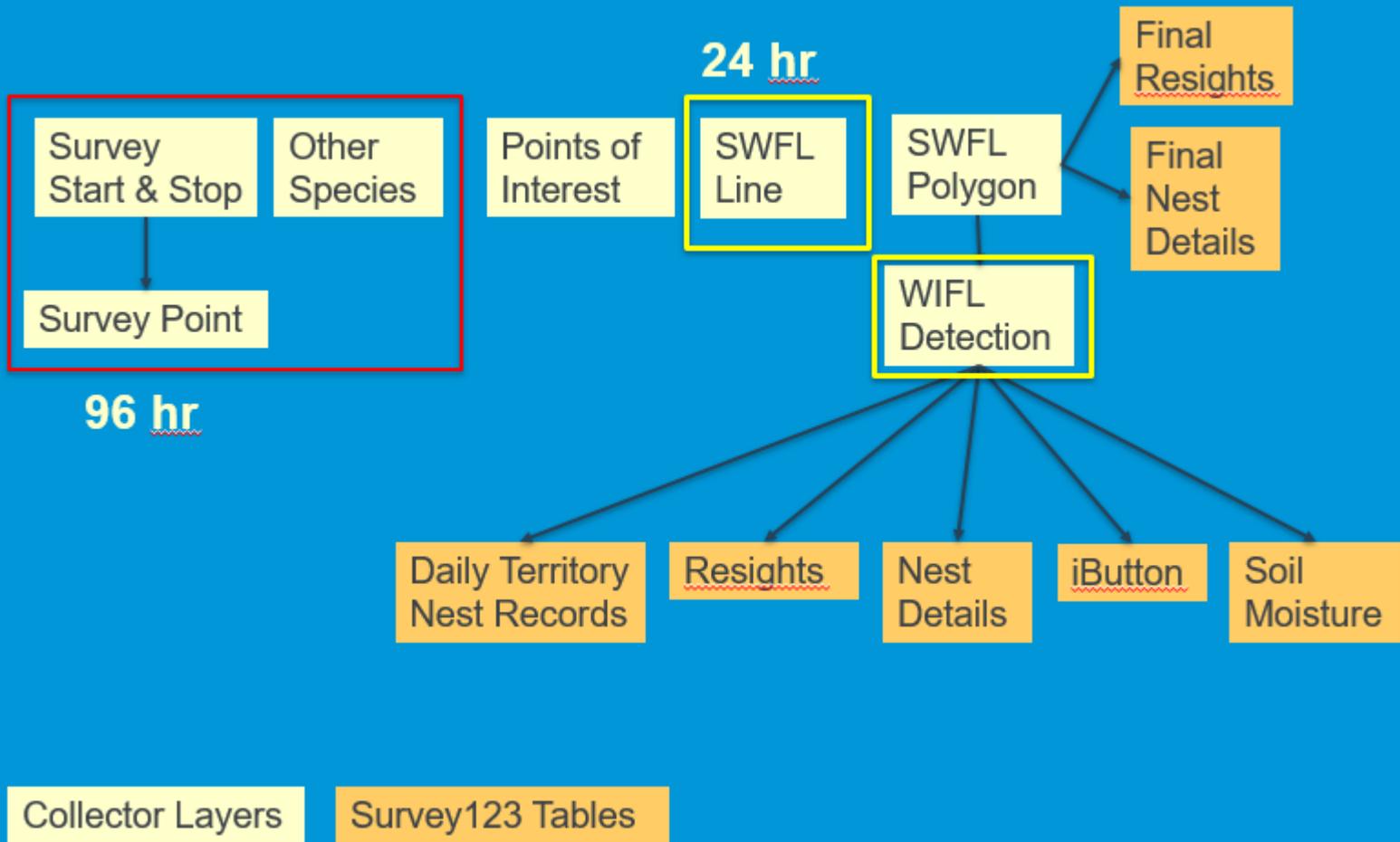
maybe this is that old faded band (x)
Tip looks shiny, maybe color on bottom?
Ky. EE?

Saw him go over to ♂ area,
interact w/ ♀. She came over very
briefly to big steeo @ x center, then
back to ♂.

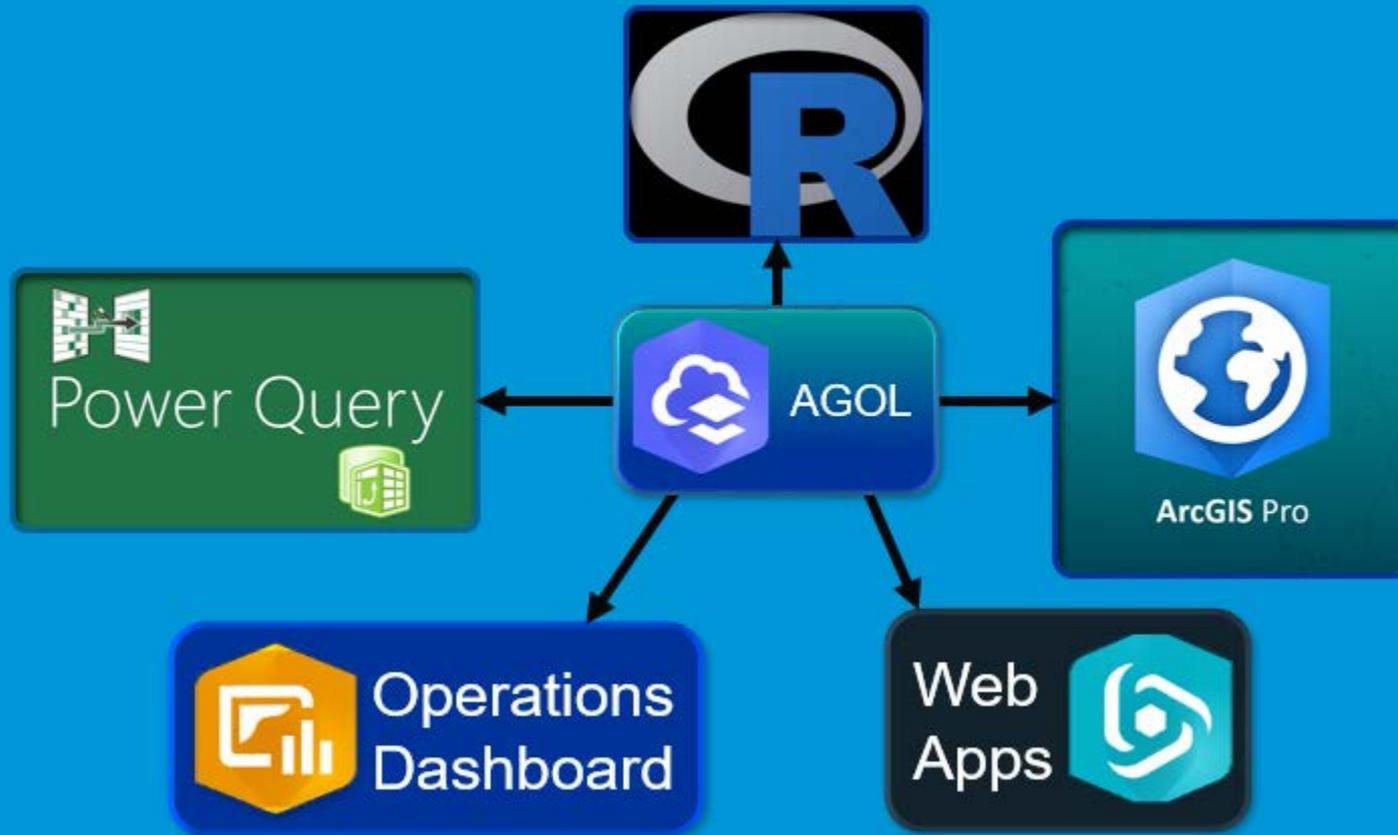
Saw him again. EE on R, 100%
v on bottom of L. Shiny on top of L.
It's the dread pirate.
0944 Leaving

FIELD NOTES

- Google Board (Android)
 - Swipe-typing
 - Speech-to-text
- Speech-to-text Examples
 - phragmites = 'fried my knees' or 'frog my tease'
 - Vegetation is in the process of being **defoliated** = veg... **deleted**
 - Canopy closure = can it be closer
 - A common yellowthroat = I come and yellow to wrote



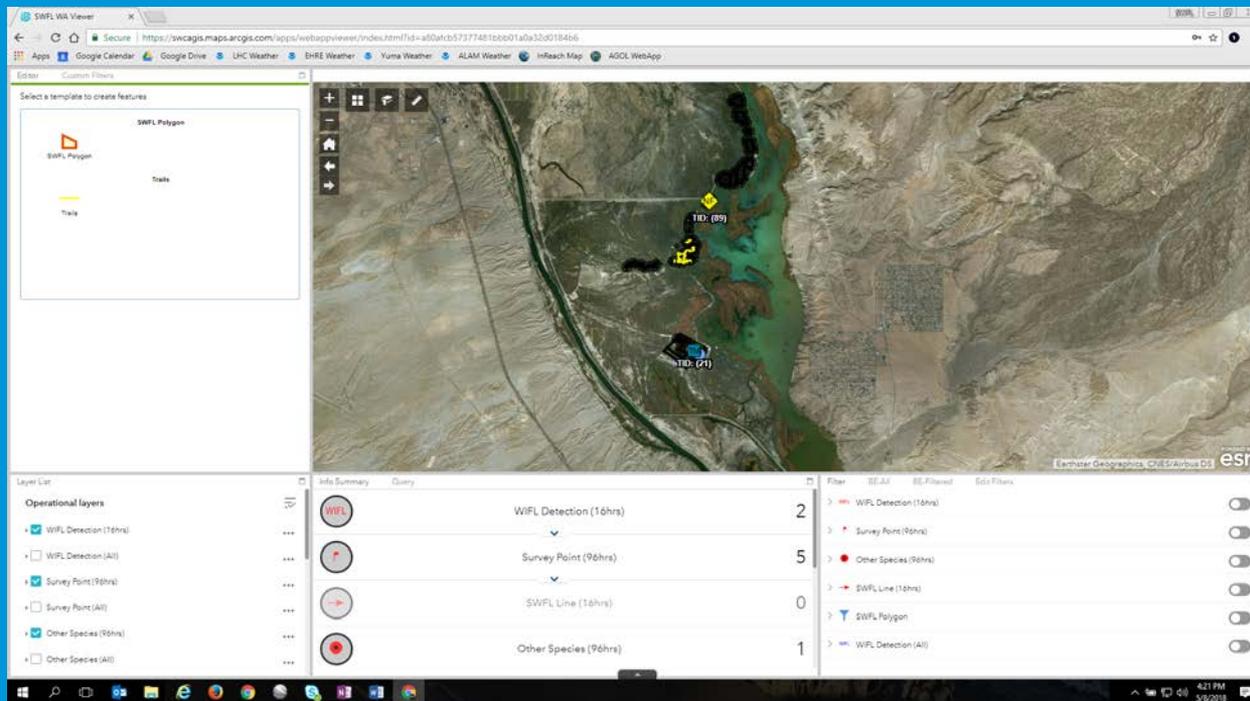
DATA MANAGEMENT SOFTWARE



WEBAPP



- Browser-based
- Data QA/QC & Entry



WEBAPP



Smart Editor Custom Filter

Clear Save

Survey Point

Cowbird Count
0

Comments

Area-Site
BIWI - Honeycomb Bend - Site

Date Collected
5/21/2019

7:31:36 AM

Upstream Site 08

Bill Williams River

USDA FSA | Esri, HERE, Garmin, IPC

esri

Layers

Layers

- Survey Start-Stop
- Survey Point
- WIFL Detection

Info Summary

Survey Start-Stop	10
Survey Point	70
WIFL Detection	20

Site/Observer Batch GUID Batch

Use one of the tools below to create a selected set of features to update. If the row is highlighted, the maximum number of records has been exceeded.

<input checked="" type="checkbox"/>	#	Layer Name
<input checked="" type="checkbox"/>	0	SWFL Polygon
<input checked="" type="checkbox"/>	0	SWFL Line
<input checked="" type="checkbox"/>		Point of Interest

Group Filters Filter

Filter all by Area Site

EQUALS

BIWI - Honeycomb Bend - Site 08

Add Criteria

Apply Reset

OPERATIONS DASHBOARD



- Strictly for viewing data
- Summarizes data in visually intuitive ways



OPERATIONS DASHBOARD



Filter Panel
use filters to zoom in and filter datasets

Study-Area

None

Area-Site

None

Date & Time

None

Observer

None

Territory Polygon

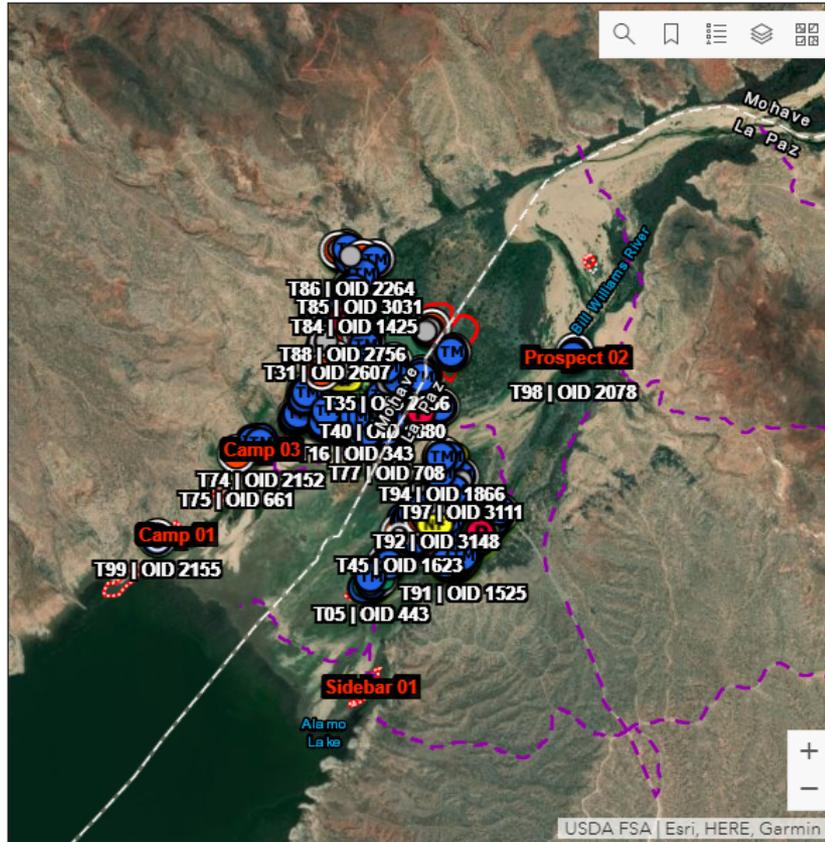
None

Detection Type

None

Behavior

None



WIFL Detections

shows up to 50, use filters to refine

- TM** T14 | OID326 | 87569a7d-3b8d-4ec3-98c4-9b59a14ff570
ALAM - Browns Crossing - Burro Wash 01
- TC** T14 | OID327 | 5856cc0a-ab0b-4697-b3b9-1a9ef86f1408
ALAM - Browns Crossing - Burro Wash 01
- TM** T14 | OID389 | 17d14863-8b53-4cd7-8b9c-ed7a3e30a65d
ALAM - Browns Crossing - Burro Wash 01
- TM** T14 | OID390 | 70378e1f-1dcb-4b79-87fa-cfc5ffc233b8
ALAM - Browns Crossing - Burro Wash 01

Related Forms

Daily Territory Nest		Daily Territory Nest
ObjectID	1	501
Territory ID		Nest Details
Observer		0
Date Collected		Resight
Time In	06:42	201
Time Out	07:07	Soil
Pause Time	0	0
Monitor Type	MTP02	iButton
Stage	S	0
Nest Observed?	N	
# Adults	1	
# WIFL		

DTN

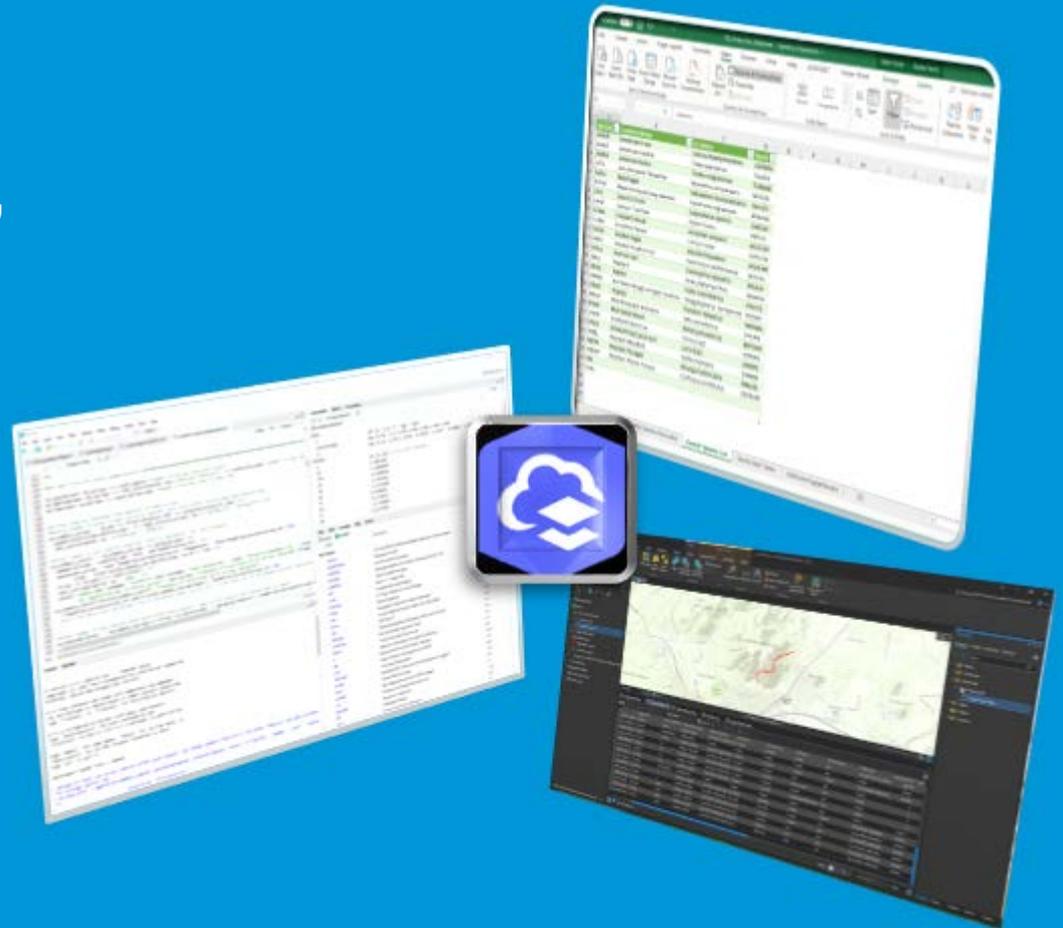
DATA MANAGEMENT

- Using tablets forces good study design (hopefully)



ANALYZING AGOL DATA

- Automated Queries, Tables, Figures, and Maps for reporting



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- Clay Donaldson
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- Chris Dodge

QUESTIONS?

