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
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
FIELD NOTES

- Old faithful: Rite in the Rain
- OneNote
- Google Keep
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
## Developing a Data Collection Platform

### WebApp

### Map Overview

- **Upstream Site 08**

### Data Table

<table>
<thead>
<tr>
<th>Point Type</th>
<th>Pause Time</th>
<th>Livestock?</th>
<th>Beetles?</th>
<th># WIFLs</th>
<th>Area-Site</th>
<th>Date Collected</th>
<th>Comments</th>
<th>Observer</th>
<th>Other Observers</th>
<th>OBJECTID</th>
<th>Office Edit Date 1</th>
<th>Office Edit 1</th>
<th>Office Edit 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop</td>
<td>90</td>
<td>yes, signs of javelina and donkey in NE corner</td>
<td>yes, both larvae and adults present</td>
<td>0</td>
<td>BIWI - Honeycomb Bend - Site 08</td>
<td>7/11/2019, 8:53 AM</td>
<td>no BHCO observed today</td>
<td>Lauren Strong</td>
<td></td>
<td>782</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BIWI - Honeycomb Bend - Site 08</td>
<td>7/11/2019, 6:05 AM</td>
<td></td>
<td>Lauren Strong</td>
<td></td>
<td>751</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop</td>
<td>60</td>
<td>yes, donkey and javelina</td>
<td>yes, adults and larvae observed</td>
<td>0</td>
<td>BIWI - Honeycomb Bend - Site 08</td>
<td>6/27/2019, 8:58 AM</td>
<td>the TAMSP is not looking great, as it is either fully defoliated because there are five brown</td>
<td>Lauren Strong</td>
<td></td>
<td>580</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OPERATIONS DASHBOARD

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

DEVELOPING A DATA COLLECTION PLATFORM
• Using tablets forces good study design (hopefully)
ANALYZING AGOL DATA

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