

California Wild Pig Survey & Mobile App

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California Rangeland Coalition Summit
January 16, 2018



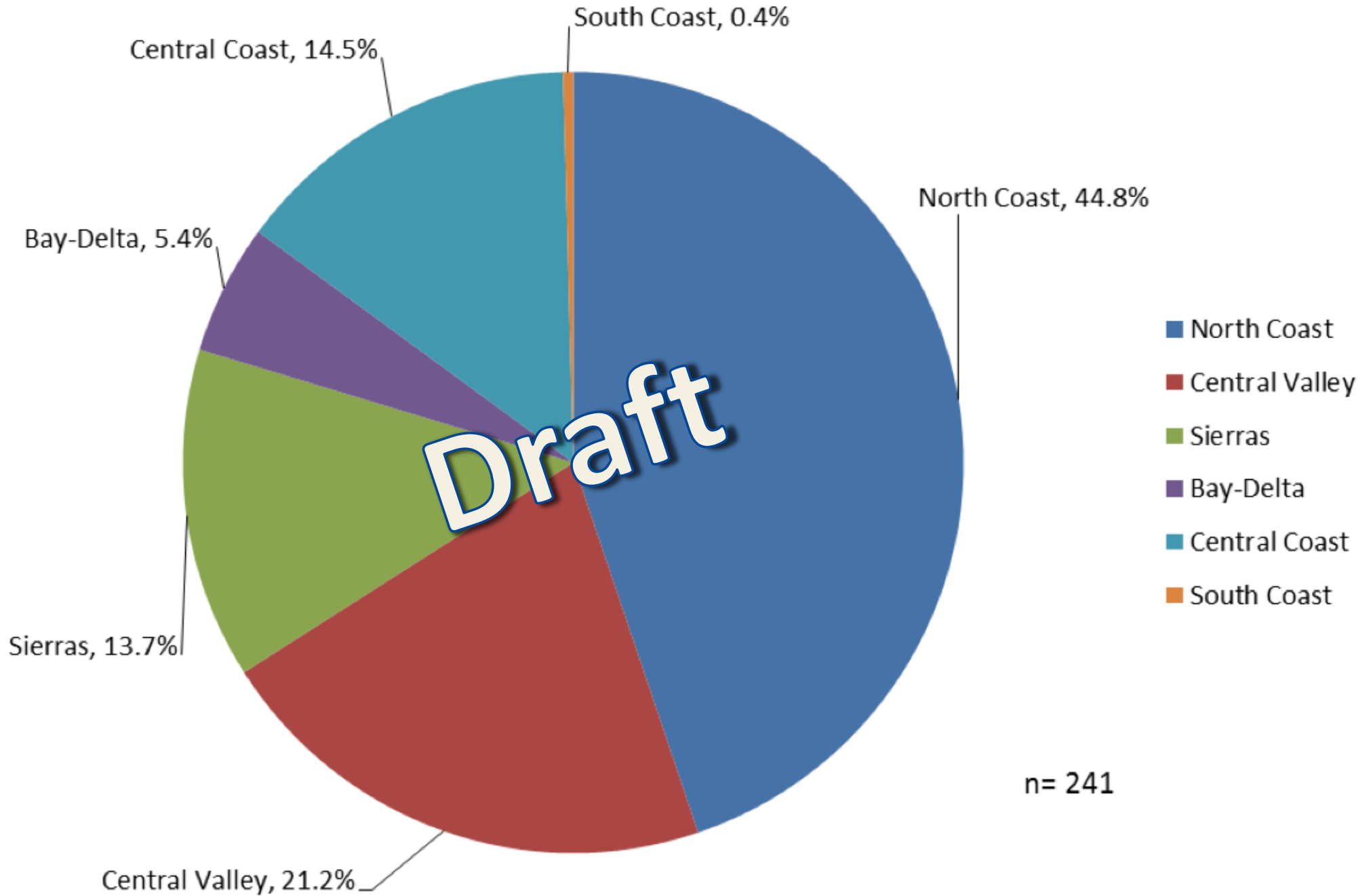
Acknowledgements

- Cooperators
 - California Farm Bureau
 - California Cattlemen's Association
 - California Wool Growers Association
 - California Rangeland Coalition
 - California Ag. Commissioners
 - Mendocino/Lake Cattle and Sheep & Goat Associations
 - Contra Costa Alameda County Cattlemen's Association
 - Monterey County Cattlemen's Association
 - Tehama County Cattlemen's Association
 - Shasta County Cattlemen's Association
 - Yolo County Cattlemen's & Woolgrowers Association
 - California Cattle Women
 - California-Pacific Section, Society for Range Management
 - California Resource Conservation Districts
 - Natural Resources Conservation Service.
- Collaborators
 - Roger Baldwin, UCCE Wildlife Specialist
 - Elizabeth Hiroyasu, UCSB PhD Student
 - Shane T. Feirer, GIS Manager, UC ANR IGIS
 - Robert Johnson, GIS Programmer/Analyst, UC ANR IGIS
 - Leslie Roach, UCCE Range Specialist
 - Ken Tate, UCCE Range Hydrology Specialist
 - Elise Gornish, U of A Rangeland Ecology Specialist
 - UCCE Livestock & Natural Resources Advisors
- Funding for mobile app development
 - Renewable Natural Resources Extension \$15,000
- Special Thanks
 - Ryan Keiffer, Mendocino Ag. Tech
 - Pam Kan-Rice, ANR Communication Services

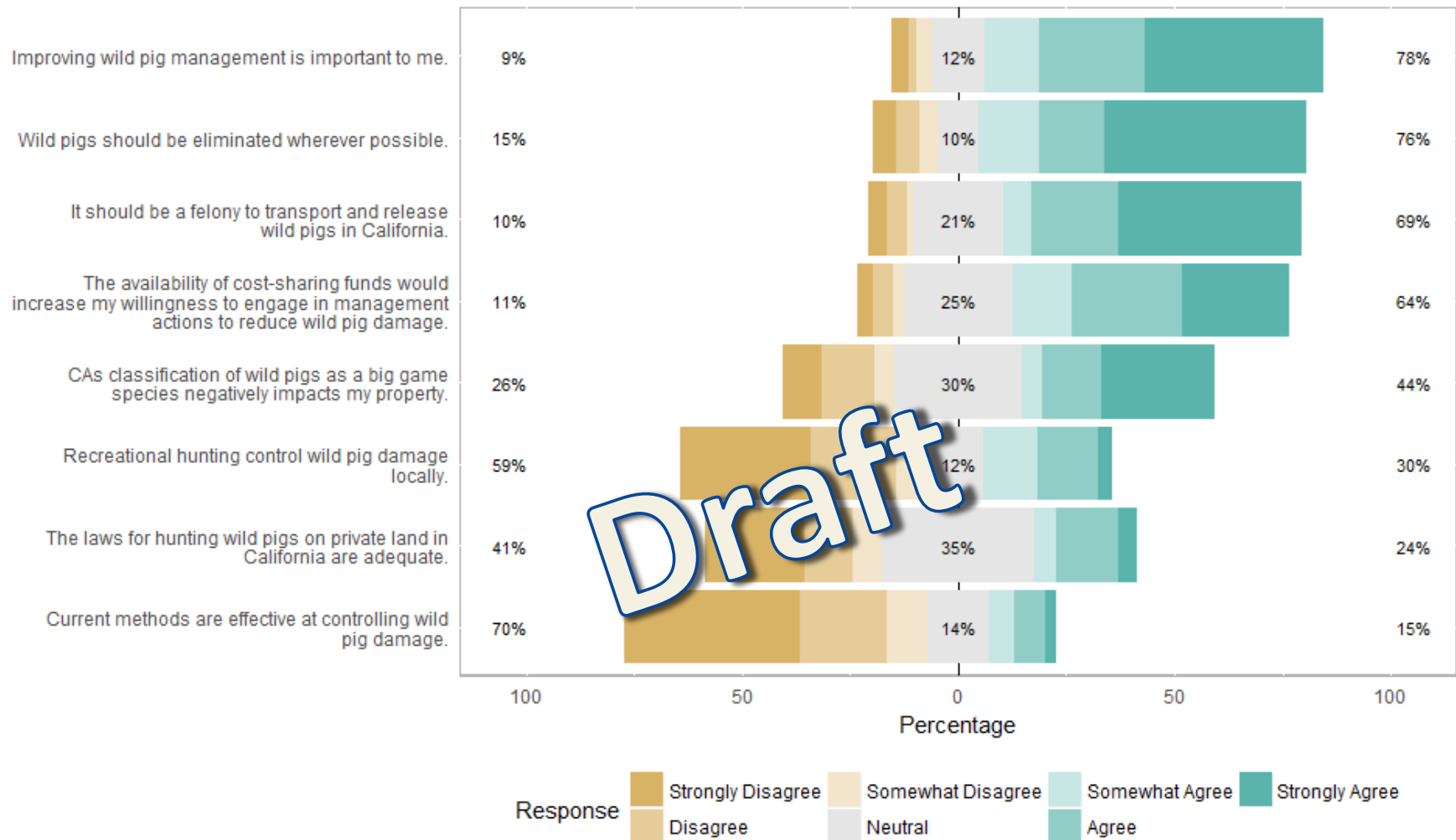
California Wild Pig Survey

- Purpose
 - Assess damage: rangeland, forest or crops
 - Location, type and cost
 - Attitudes about wild pigs
 - Knowledge about wild pig behavior and control methods
 - Interest in Mobile App
- Statewide survey
 - 4 sections
 - Ranch Description & Location
 - Views on wild pig damage
 - Pig Damage
 - Mobile App Interest

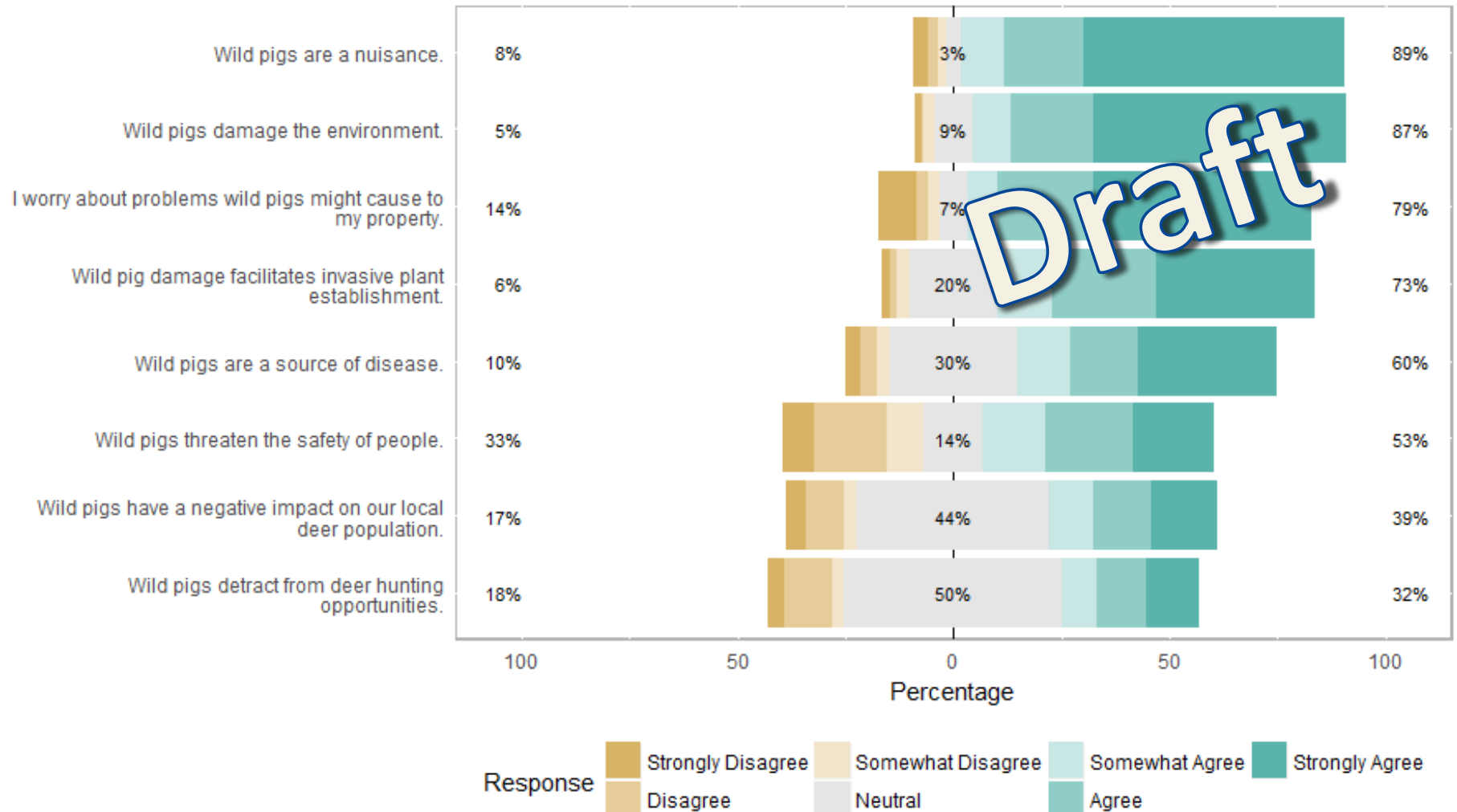
Survey Response Rate by Region



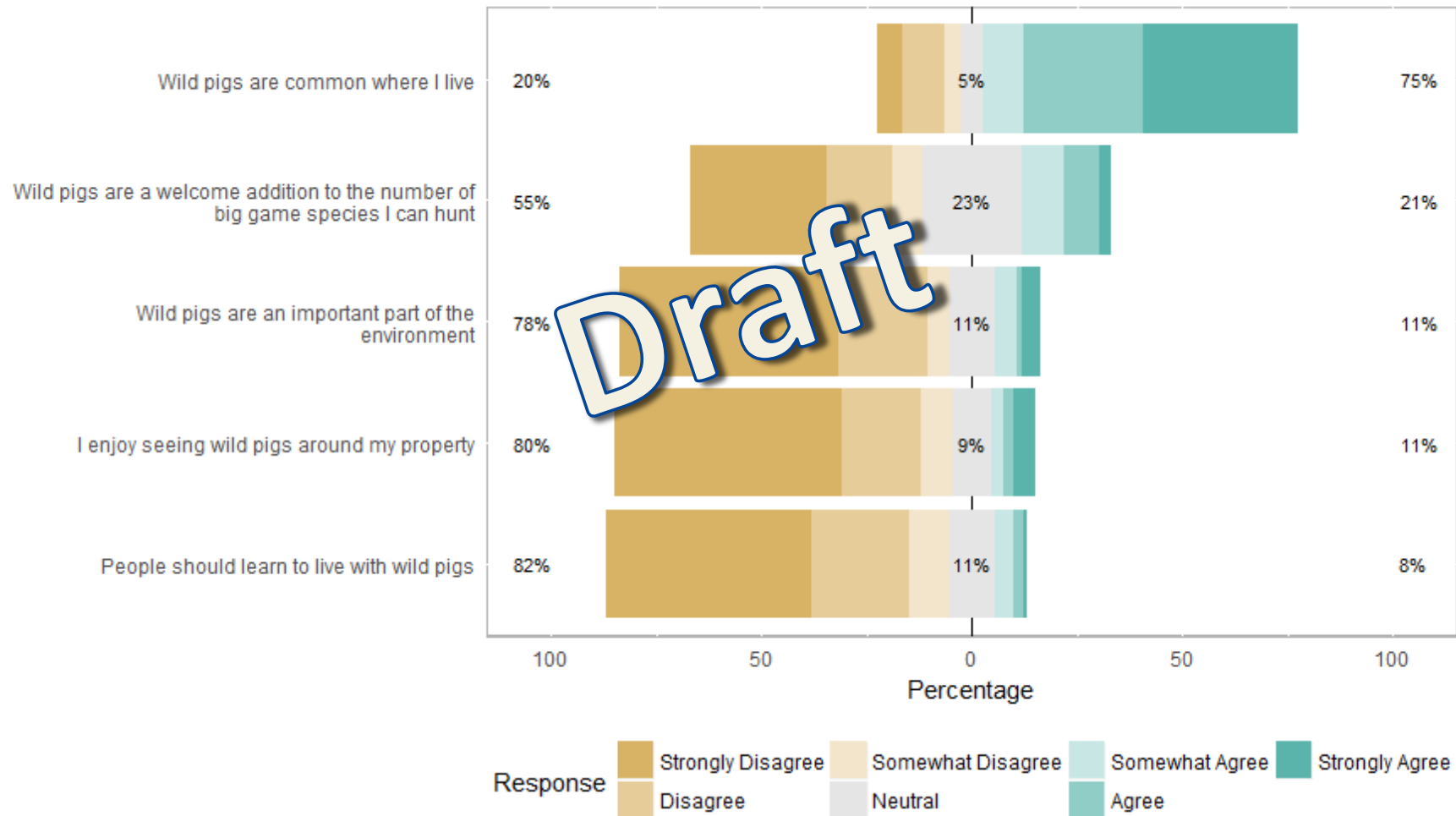
Attitudes Toward Management of Wild Pigs



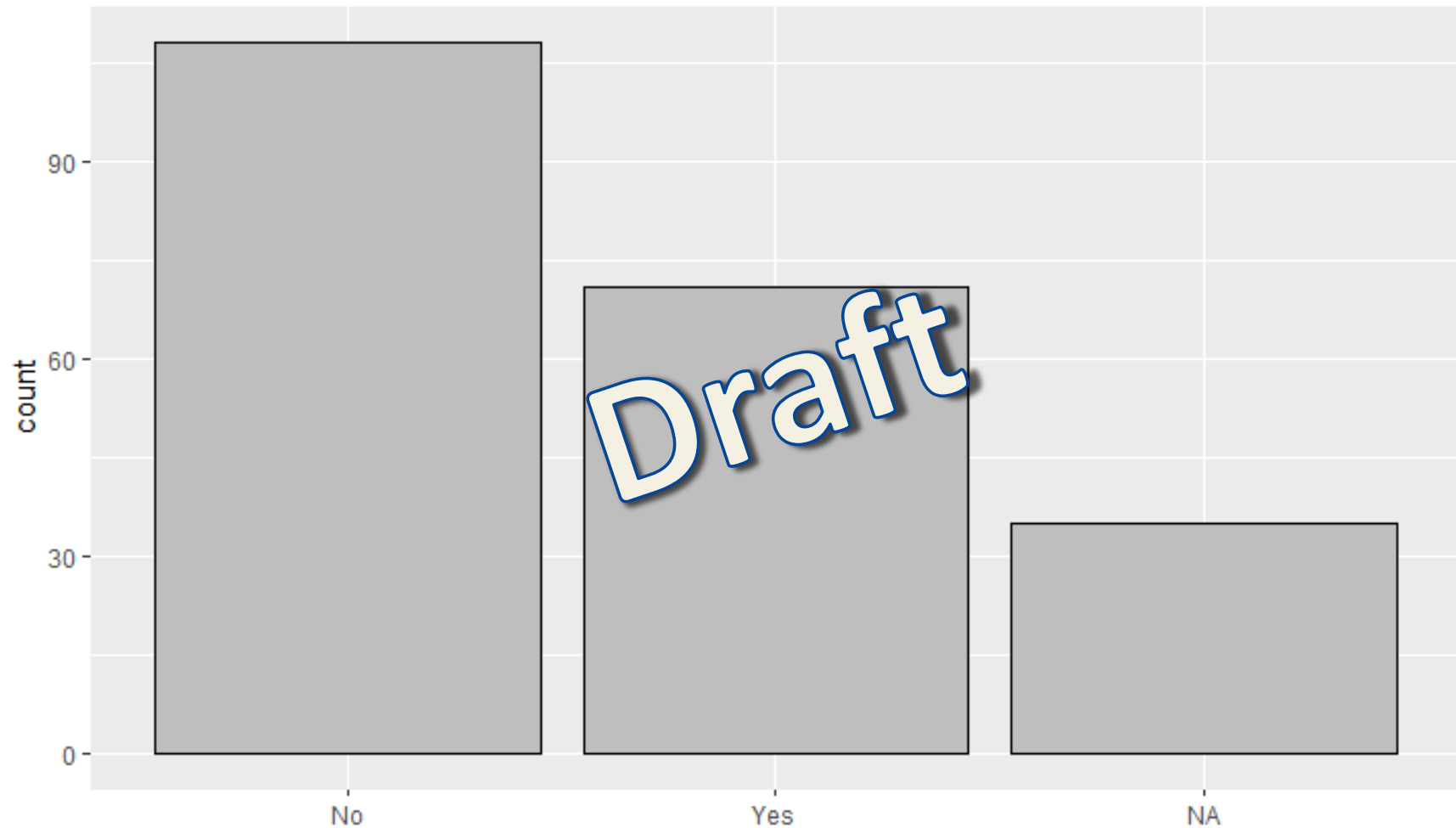
Negative Statements About Wild Pigs



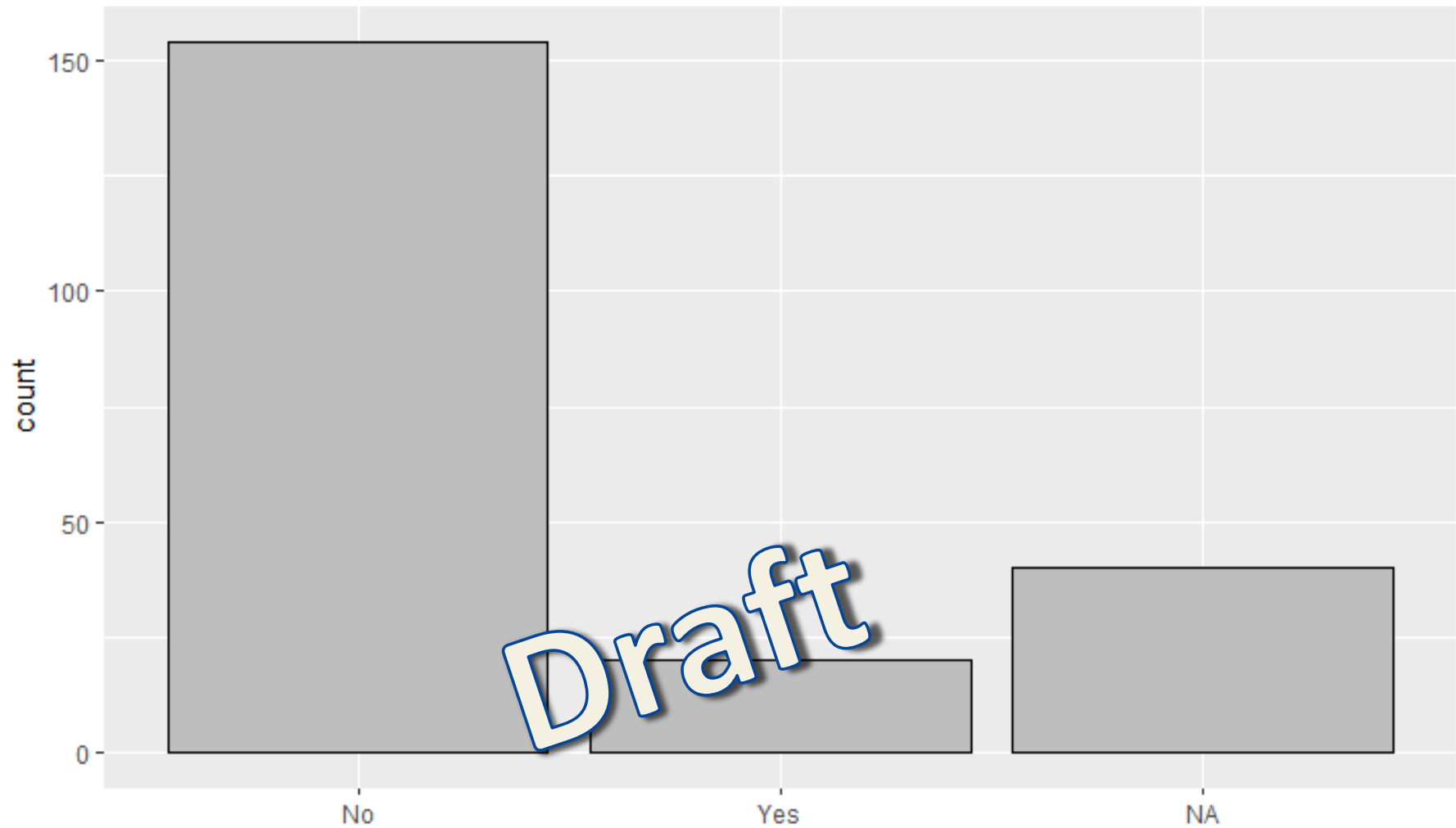
Positive Statements About Wild Pigs



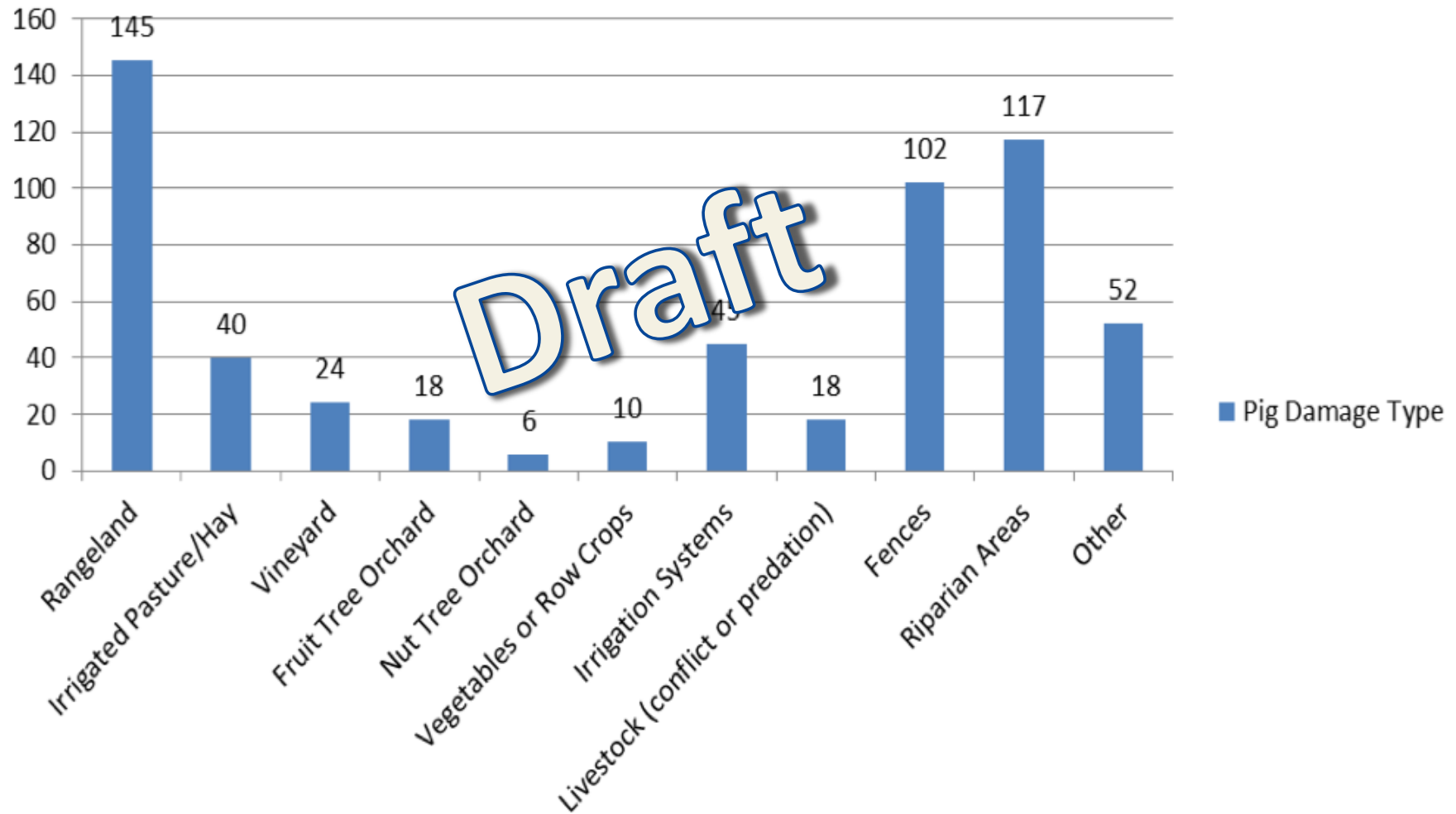
Reported damage to State or Local Wildlife Managers?



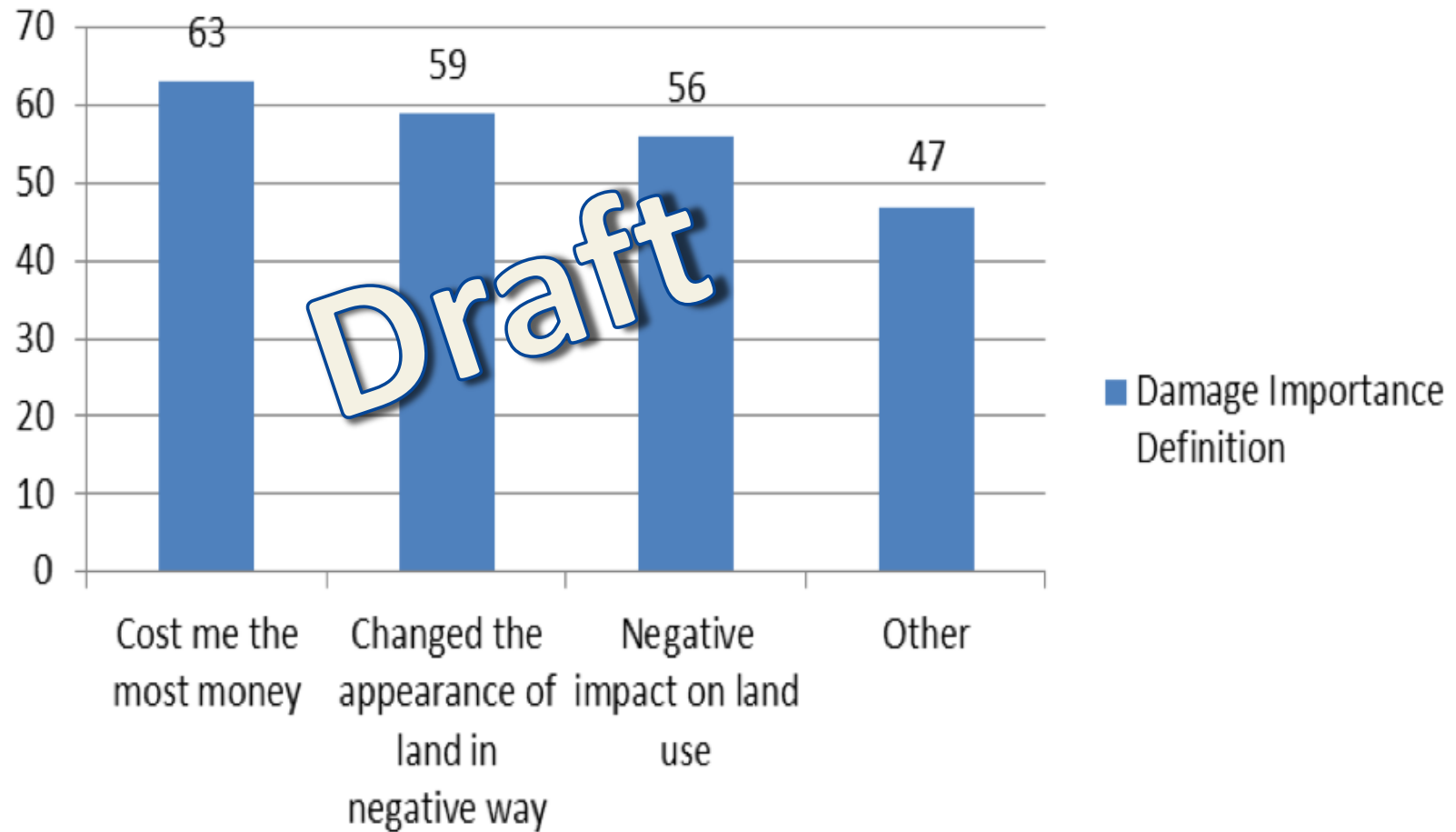
Reported damage to State or Local Elected Officials?



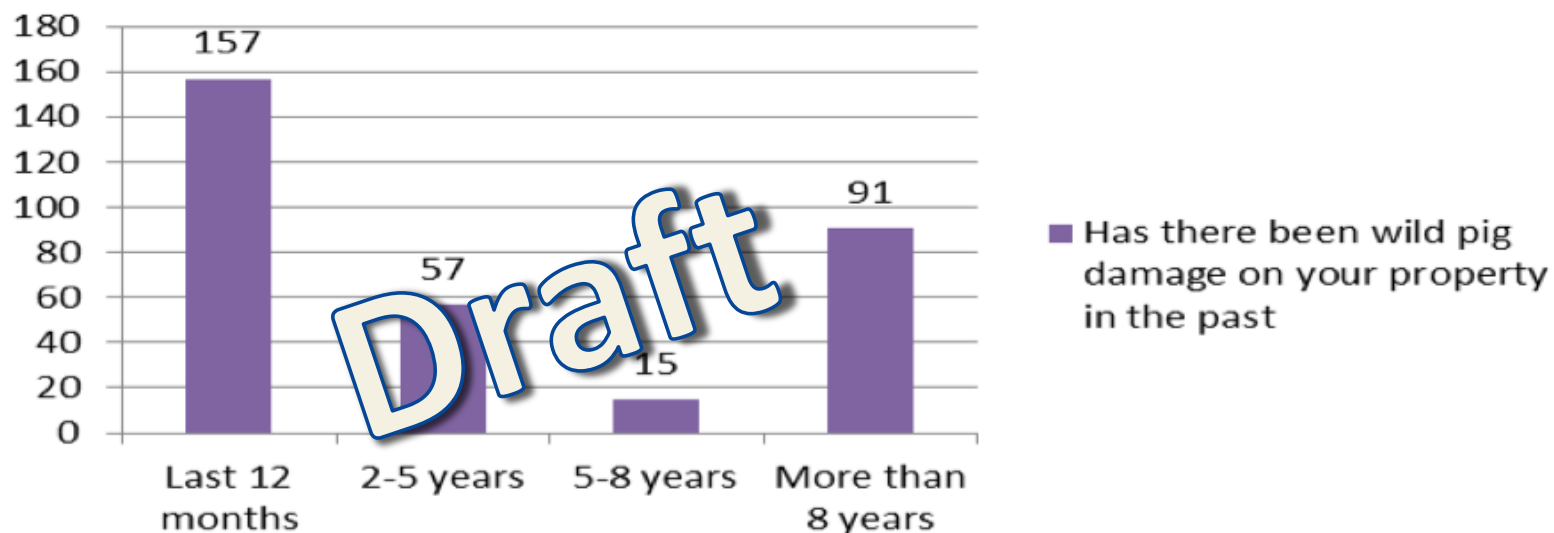
Pig Damage Type



Most Important Damage Type Definition



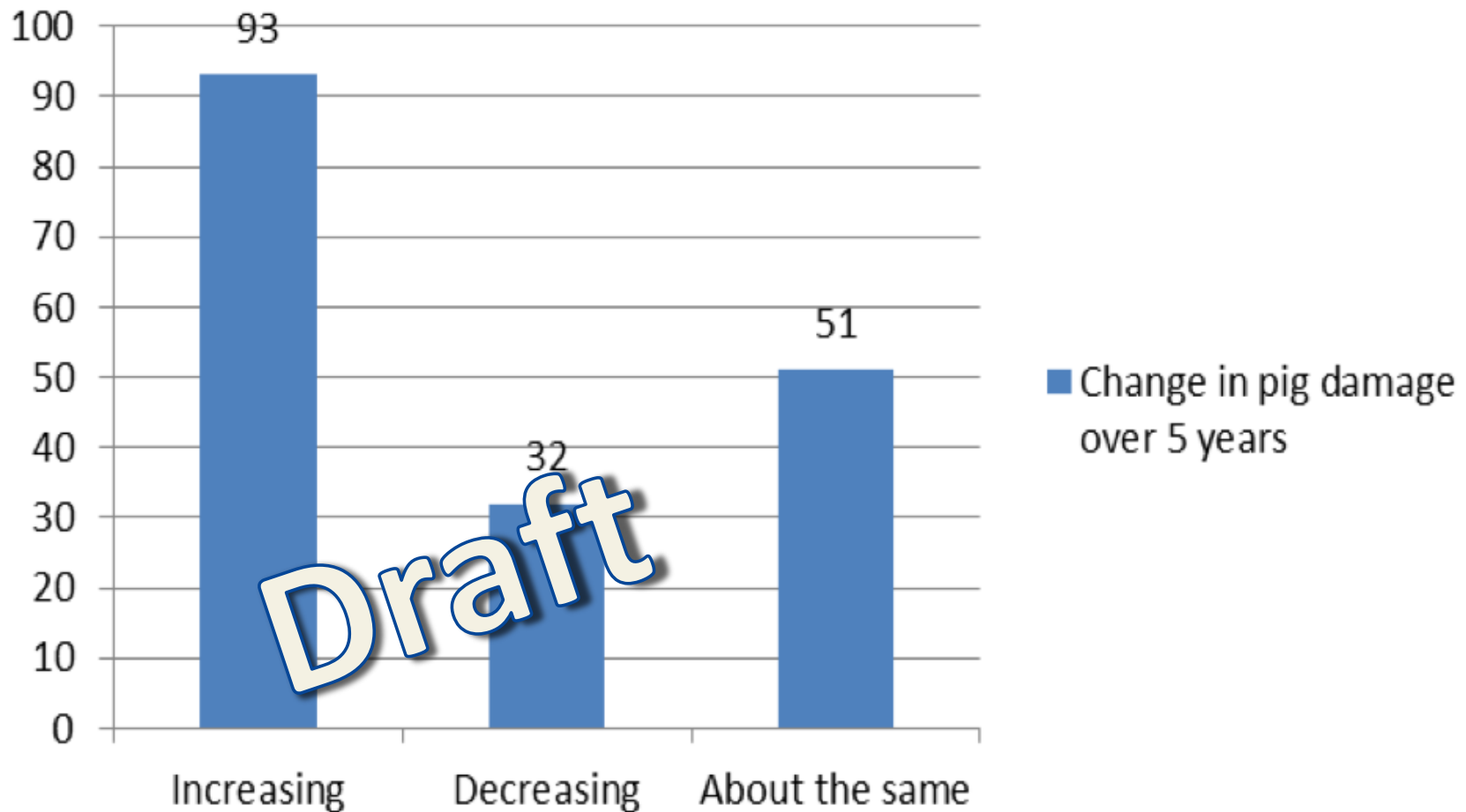
Has there been wild pig damage on your property in the past



Number of Pigs & Pig Damage In Last 12 Months

Average number of pigs seen	64
Total number of pigs seen	10,179
Average evidence of new pig damage seen	73 occasions

Change in pig damage over 5 years



Estimated Cost to Repair Pig Damage Seen in Last 12 Months

Average cost for respondents

\$1,629

Total cost for respondents

\$141,705

Draft

Estimated Cost to Repair Pig Damage Since Acquiring Property

Average cost for respondents

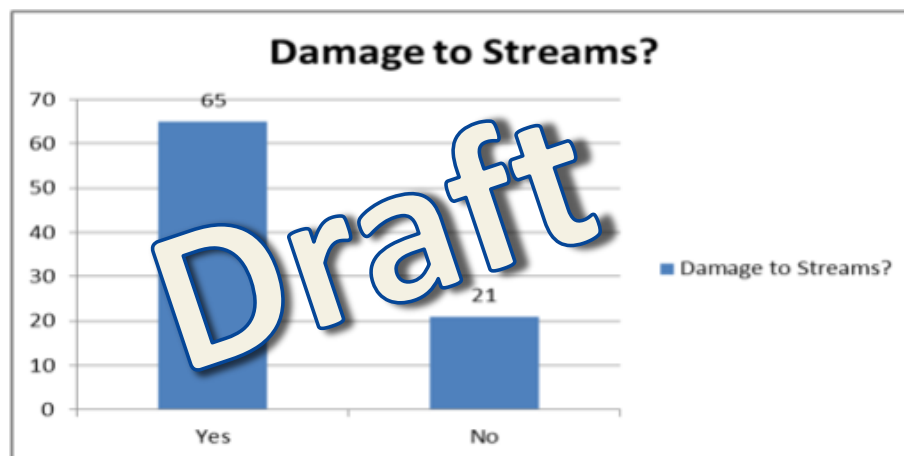
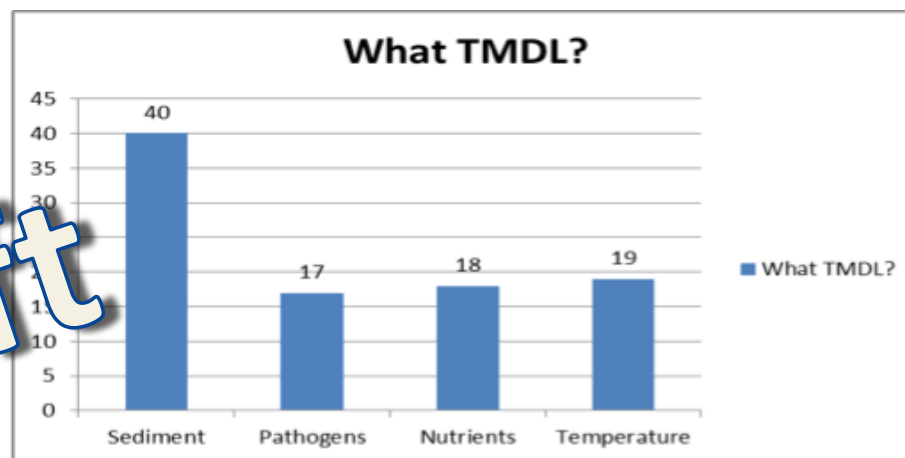
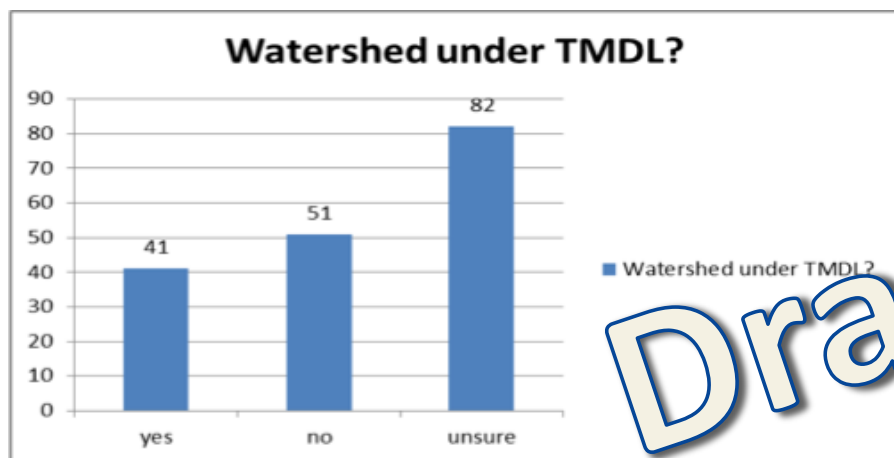
\$10,158

Total cost for respondents

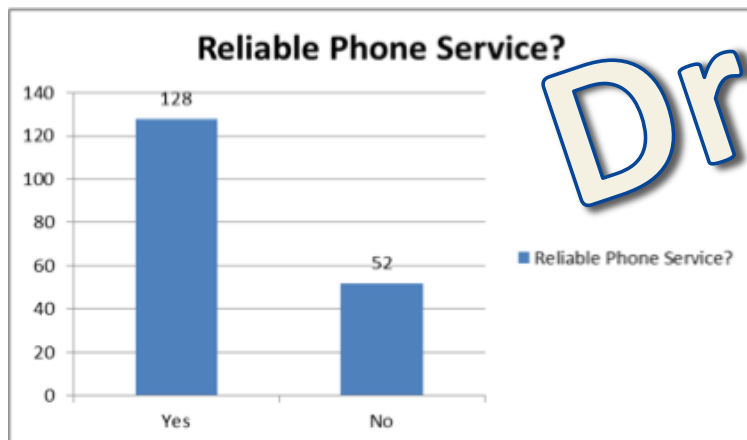
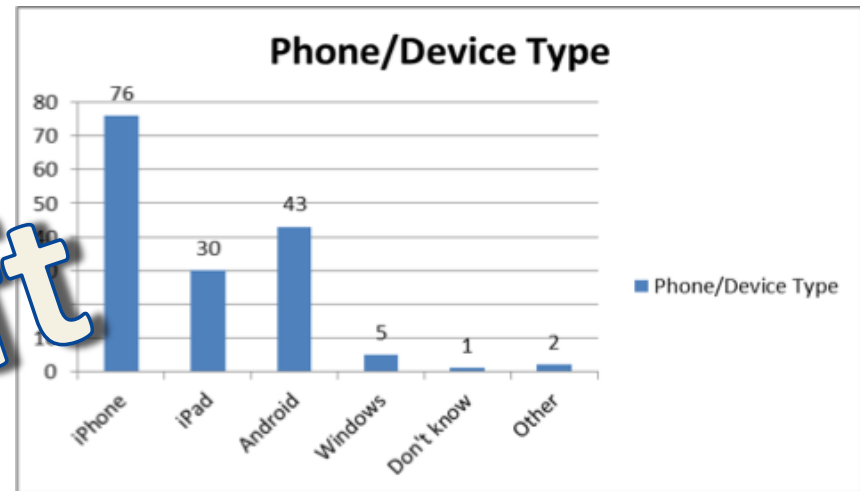
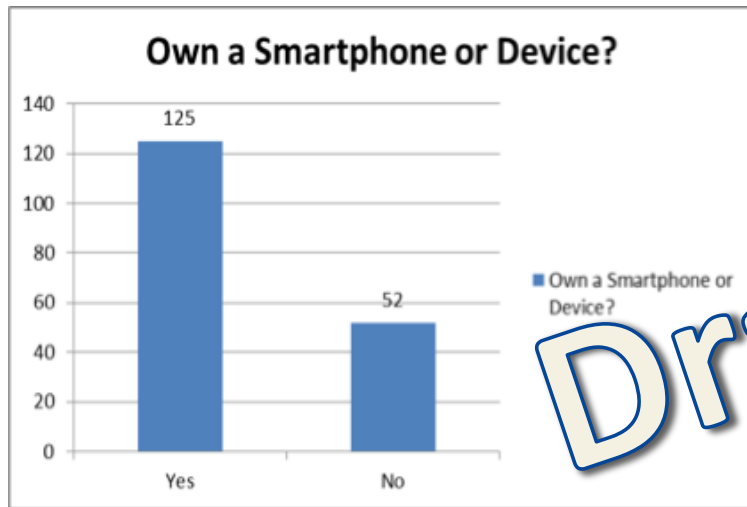
\$863,480

Draft

Pig Damage & Rangeland Water Quality



Mobile App Section



Mobil App Purpose

- **Assess the extent of damage**
- **Gather info from participants**
 - Subset of original survey questions
- **Create interactive map of damage**
- **Long-term “big data”**
- **Works nation-wide**



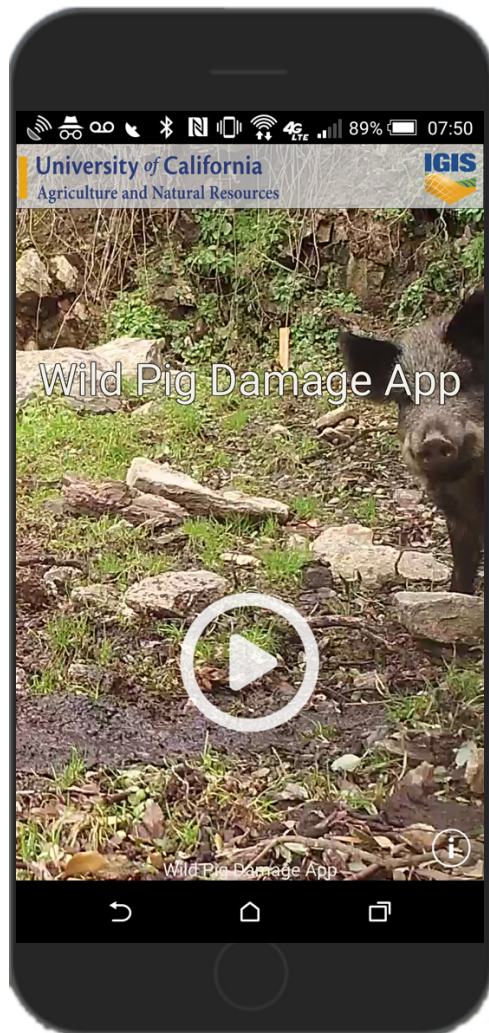
Potential Users

- **Ranchers**
- **Farmers**
- **Forest land owners**
- **Managers**
- **Agency personnel:** UCCE Advisors, NRCS, Wildlife Services, etc
- **Citizen Scientists**

Capabilities Needed

- **Mobile app (Android or iOS)**
- **Online and offline capable**
- **Gather user info**
- **Gather measure of area damaged**
- **Gather photos of damage**
- **Map the extent**

Available On-Line

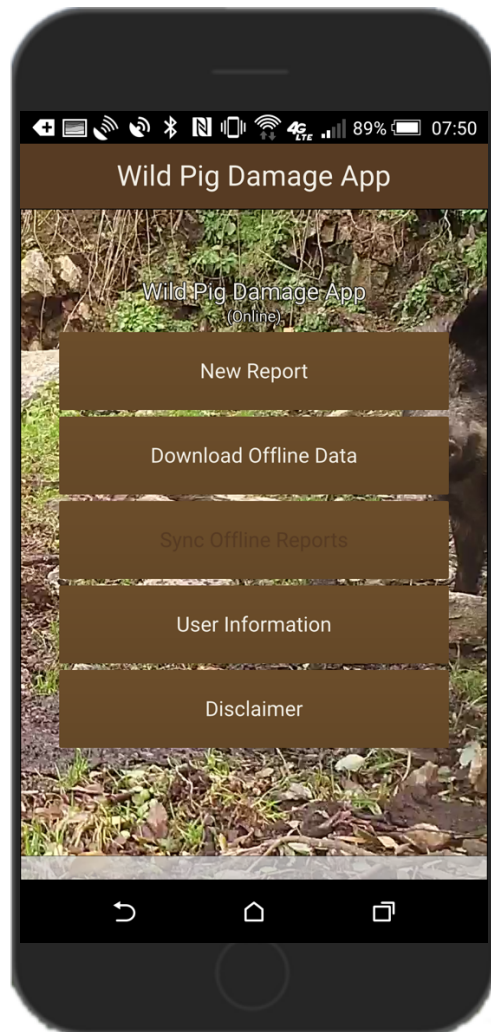


Completed: September 2016

Available on: Android and iOS Devices

Search for “Wild Pig Damage”

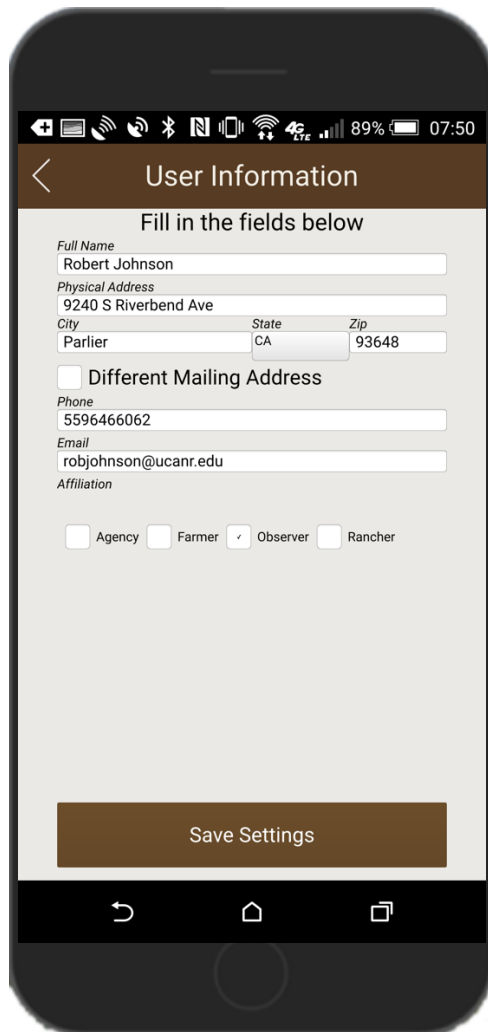
Main Landing Page



Main user page

- Setup user information
- Download data for offline use
- Create a new damage report
- Sync data collected when offline

User Info



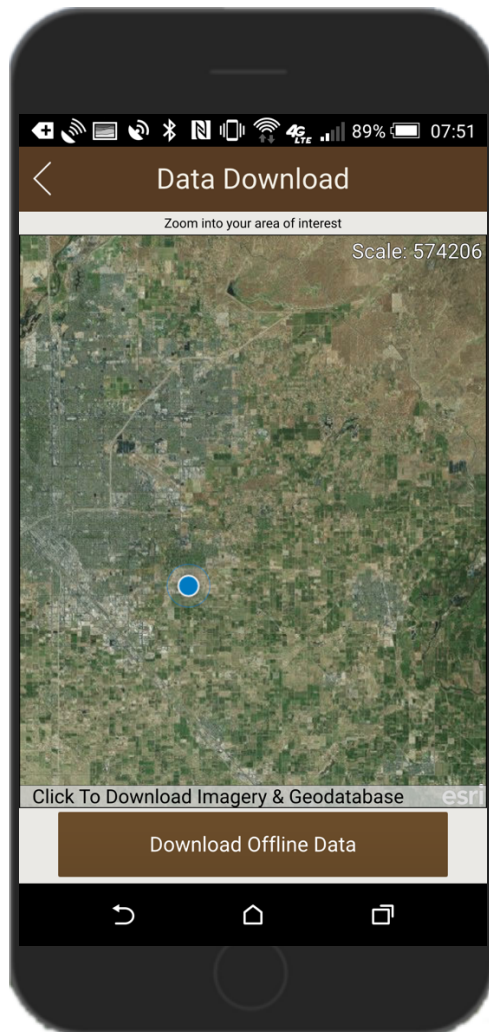
The image shows a smartphone screen with a 'User Information' form. The status bar at the top shows various icons and 89% battery. The form has a brown header with a back arrow and the title 'User Information'. Below the header, it says 'Fill in the fields below'. The form fields include: 'Full Name' (Robert Johnson), 'Physical Address' (9240 S Riverbend Ave), 'City' (Parlier), 'State' (CA), 'Zip' (93648), a checkbox for 'Different Mailing Address', 'Phone' (5596466062), 'Email' (robjohnson@ucanr.edu), and 'Affiliation' with radio buttons for Agency, Farmer, Observer (selected), and Rancher. A brown 'Save Settings' button is at the bottom of the form area.

Gather basic user information

- Name
- Address
- Depending on answers to questions more info requested

Attached to all Wild Pig Damage report

Off-Line Capabilities

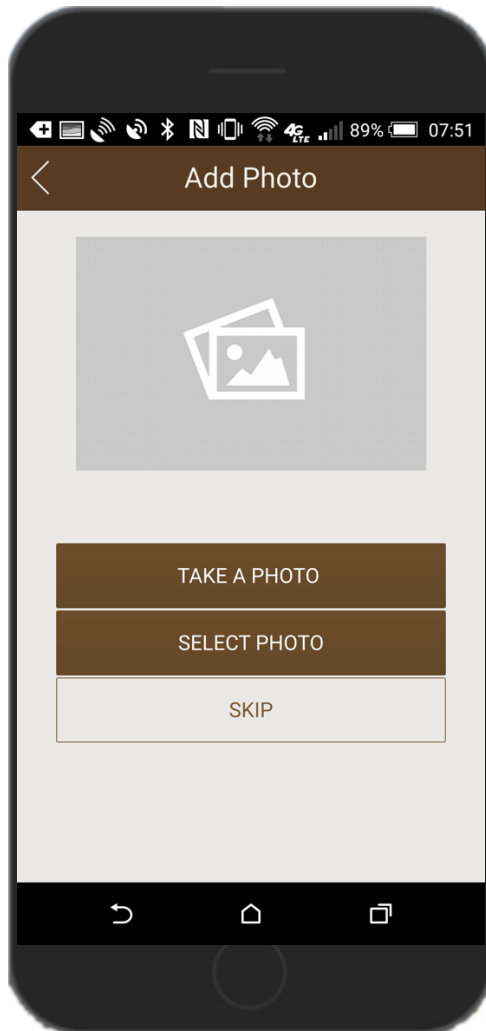


Setup app for offline data collection

- Download map imagery for app
- Download database to hold offline report

Not needed for online use

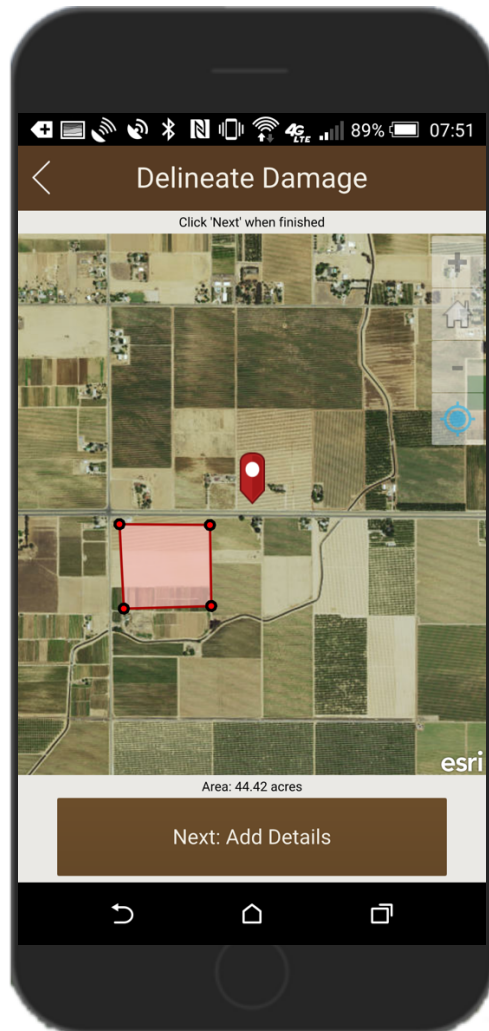
Take Photo(s) of Damage



Gather photos of damage

- Store photos with the damage report
- Can attach more than one photo per report

Delineate Damage Area

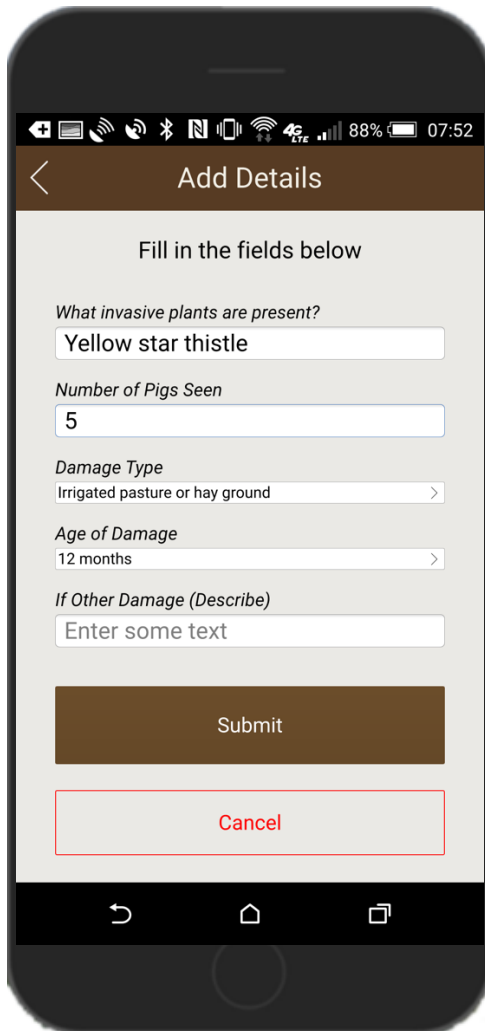


Mark damaged areas

- Located on the map by your mobile device
- Draw the area damaged
- Instant calculation of acres impacted

Enter Damage Details

Submit Report



The image shows a smartphone screen with a form titled "Add Details". The form has a back arrow on the left and the title "Add Details" in the center. Below the title, it says "Fill in the fields below". The form contains the following fields:

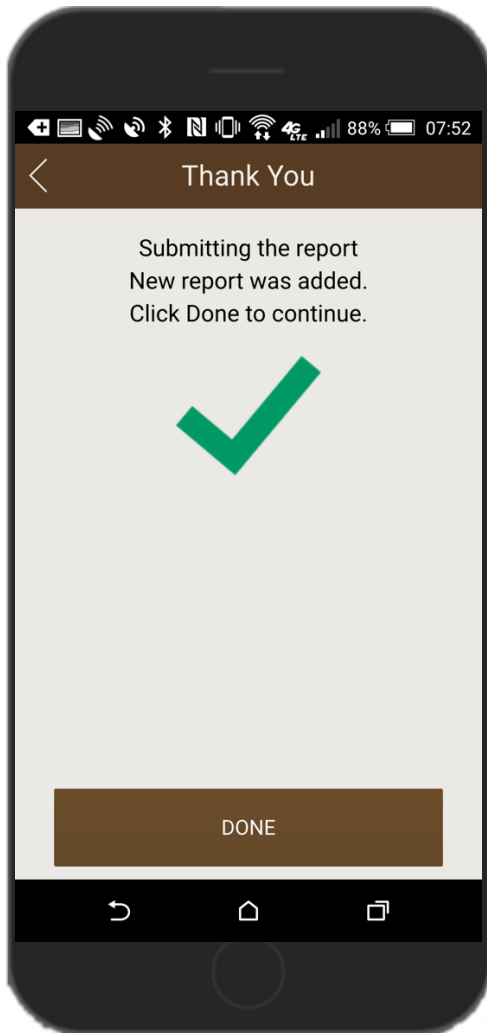
- What invasive plants are present?** A text input field containing "Yellow star thistle".
- Number of Pigs Seen** A text input field containing "5".
- Damage Type** A dropdown menu with "Irrigated pasture or hay ground" selected.
- Age of Damage** A dropdown menu with "12 months" selected.
- If Other Damage (Describe)** A text input field containing "Enter some text".

At the bottom of the form are two buttons: a brown "Submit" button and a light gray "Cancel" button with a red border. The smartphone's status bar at the top shows various icons, signal strength, 88% battery, and the time 07:52. The bottom of the screen shows the standard Android navigation bar.

Gather information about the damaged area

- Whether invasive plants are present
- Number of pigs seen
- Damage type
- Age of damage

Damage Report Submitted Successfully



- **For questions about the app:** please contact either John Harper, UCCE Livestock and Natural Resources Advisor, at 707-463-4495 or jmharper@ucanr.edu or Roger Baldwin, UCCE Wildlife Specialist at (530) 752-4551 or rabaldwin@ucdavis.edu.
- **For questions about the IGIS and App Development:** please contact Shane Feirer, GIS Manager at 707-744-1424x114 or stfeirer@ucanr.edu