Calflora

information on **wild California plants** for conservation, education, and appreciation

Mapping and Tracking (Invasive) Plants with Calflora's Weed Manager

John Malpas, Tech Lead
jhmalpas@calflora.org

Cynthia Powell, Executive Director
cpowell@calflora.org

Calflora

Thank you to our Weed Manager Development Funders!

MARIN MUNICIPAL
WATER DISTRICT

YOSEMITE
CONSERVANCY

Calflora is an equal opportunity provider and employer.

Agenda

Calflora basics

Weed Manager: acquiring and managing data

Using Phone App to Log Data

Our Nonprofit's Mission

- Calflora is California's digital plant library

- We provide information on wild CA plants for conservation, education, and appreciation; this info in readily usable electronic formats

- We serve public information needs related to scientific study, land management, environmental analysis, education, and appreciation of CA plant life

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Calflora database contains

> 12,000 native and introduced species

> 2 million plant location observations (points, lines, and polygons)

> 30,000 relationships between old and new plant names

> 300,000 plant photos

> 36,000 unique Calflora e-visitors each month (1,200/day)

> 1,000 active data contributors (you?)

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1994: PhD botanist Ann Dennis shared a text file of CA plants.

1997: Local botanist Tony Morosco joined Ann's efforts to document local plants.

2001: They created Calflora 501(c)3 not-for-profit.

the roots of Calflora

.

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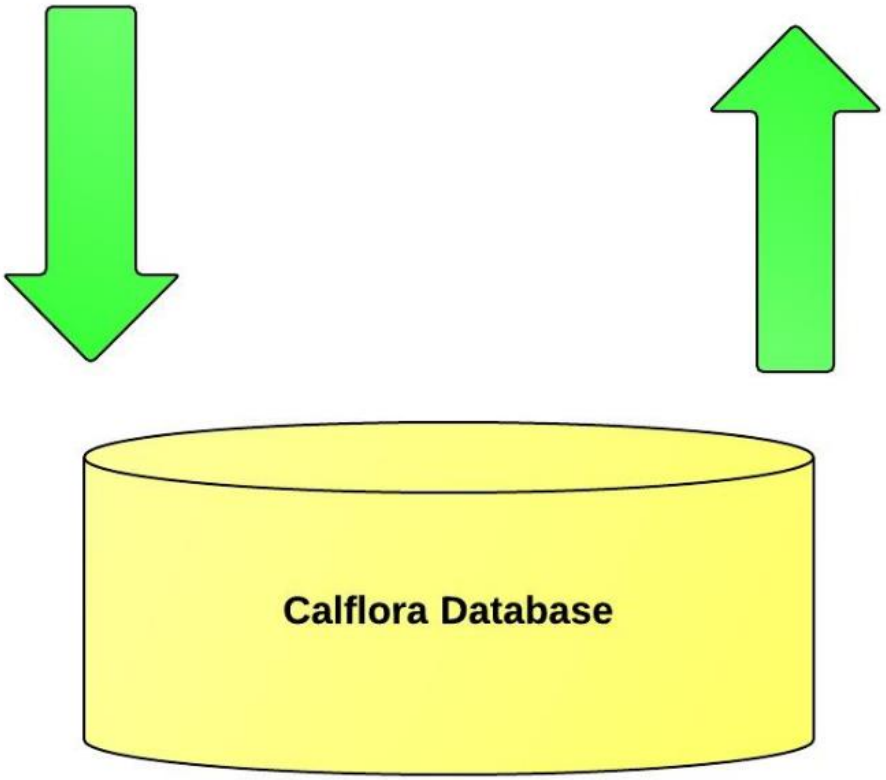
Data In

> 500 Professional Botanists
> 1000 Amateur Botanists
> 1800 Other Observers
> 100 Institutions

Data Out

Researchers
Students
Botanists
Ecologists
Land Managers
Conservationists



Agenda

Calflora basics

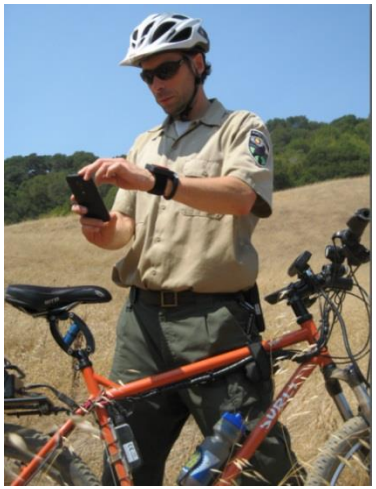
Weed Manager: acquiring data and managing data

Using Phone App to Log Data

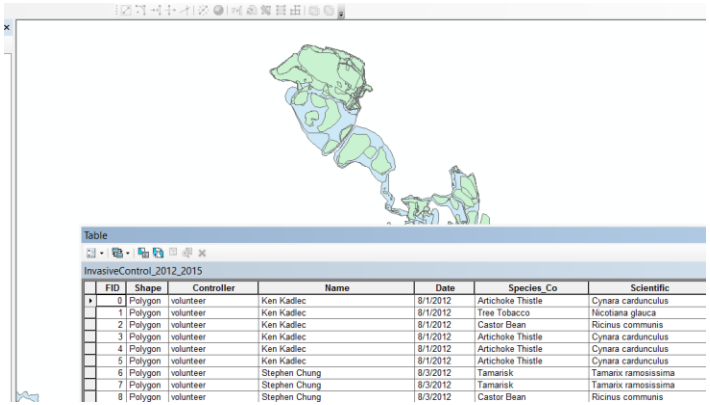
Calflora

information on **wild California plants** for conservation, education, and appreciation

Weed Manager: Acquiring data

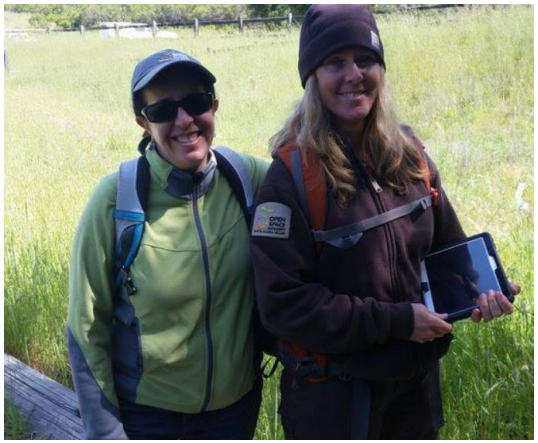


Observer Pro android phone app



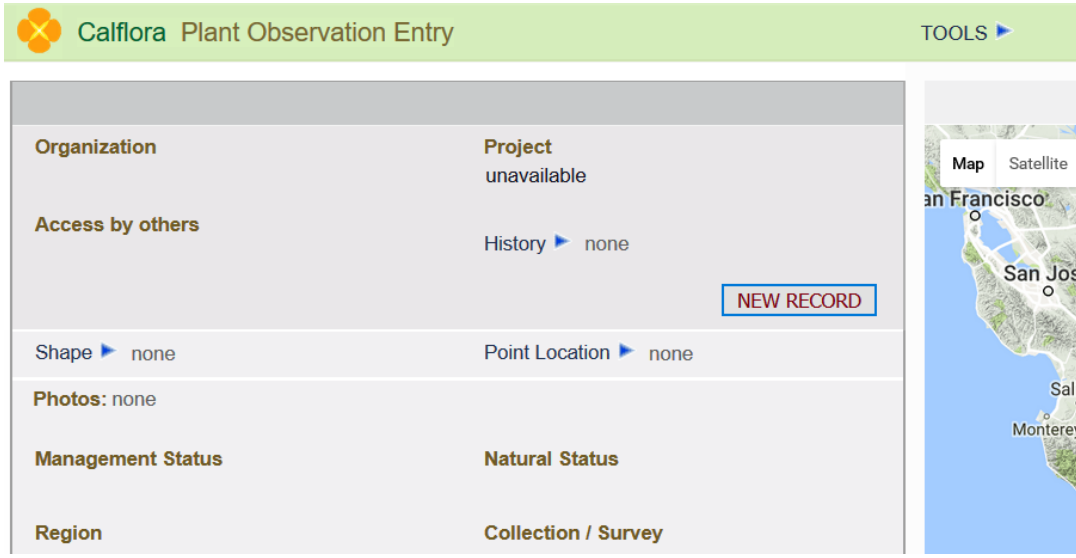
FID	Shape	Controller	Name	Date	Species_Co	Scientific
0	Polygon	volunteer	Ken Kadlec	8/1/2012	Artichoke Thistle	Cynara cardunculus
1	Polygon	volunteer	Ken Kadlec	8/1/2012	Tree Tobacco	Nicotiana glauca
2	Polygon	volunteer	Ken Kadlec	8/1/2012	Castor Bean	Ricinus communis
3	Polygon	volunteer	Ken Kadlec	8/1/2012	Artichoke Thistle	Cynara cardunculus
4	Polygon	volunteer	Ken Kadlec	8/1/2012	Artichoke Thistle	Cynara cardunculus
5	Polygon	volunteer	Ken Kadlec	8/1/2012	Artichoke Thistle	Cynara cardunculus
6	Polygon	volunteer	Stephen Chung	8/3/2012	Tamarisk	Tamarix ramosissima
7	Polygon	volunteer	Stephen Chung	8/3/2012	Tamarisk	Tamarix ramosissima
8	Polygon	volunteer	Stephen Chung	8/3/2012	Castor Bean	Ricinus communis

Upload shapefiles / geodatabases



iOS phone app

Geotagged Photos



Online

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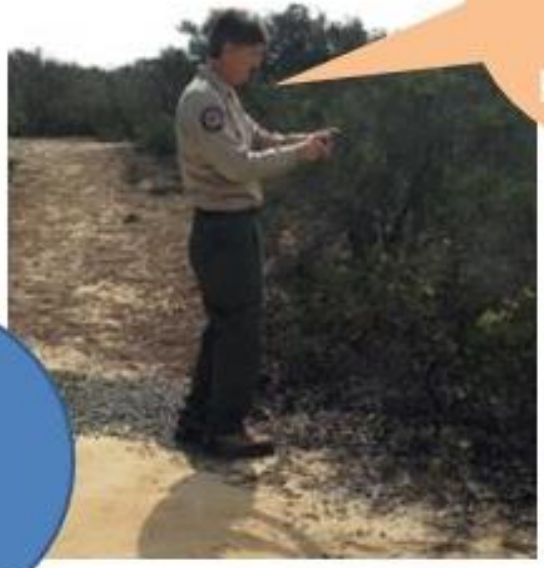
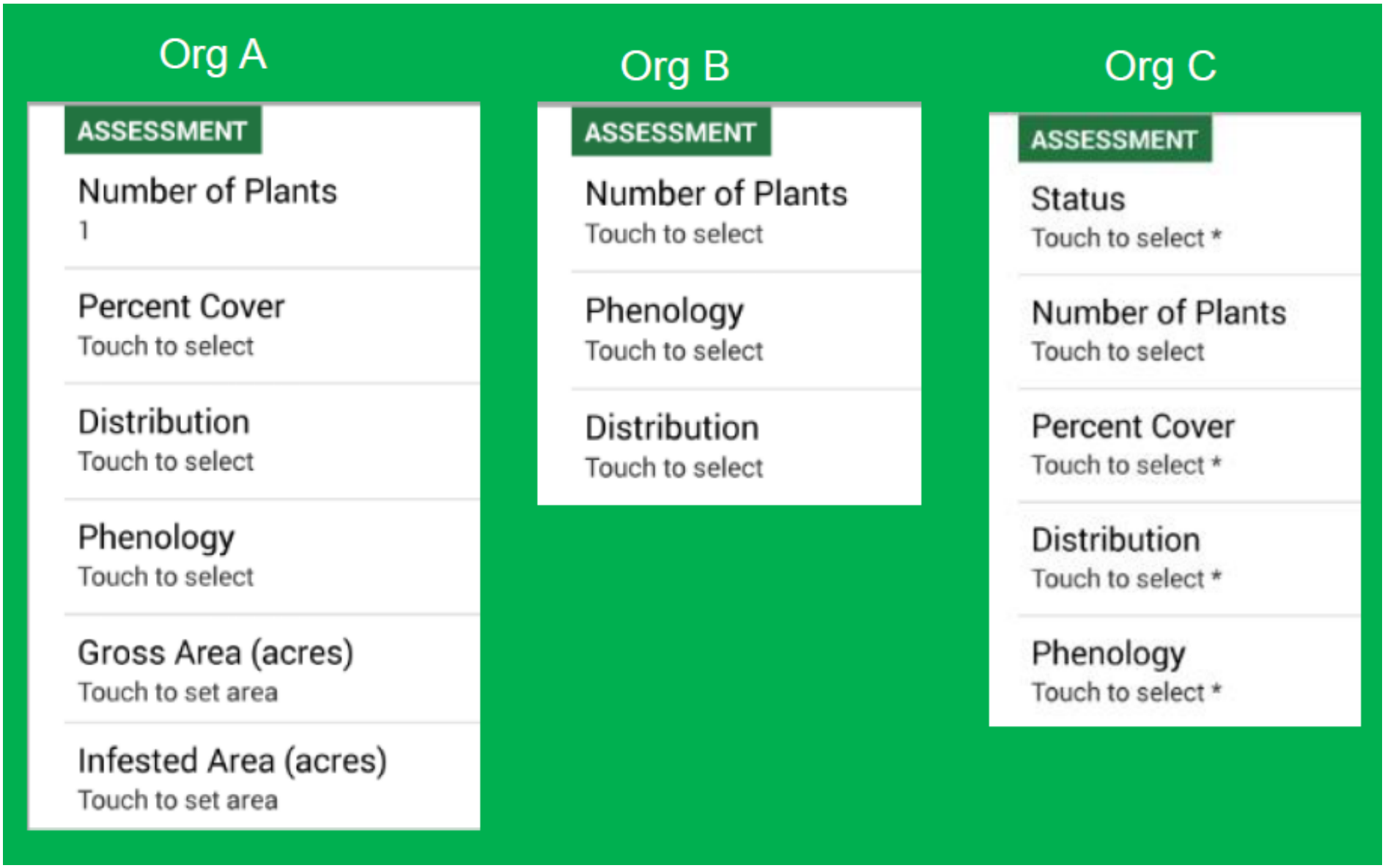


Various form options: you choose assessment fields



You Choose Treatment Fields

Org A

TREATMENT

- Treatment?
  Chemical
- Mechanical Method
  Touch to select
- Chemical Method
  Touch to select
- Herbicide
  Touch to select
- Ounces of Chemical
  Touch to set value
- Ounces of Water
  Touch to set value
- Concentration (%)
  Touch to set value
- Treated Surface Area, square feet
  Touch to set value
- Percent Treated
  100

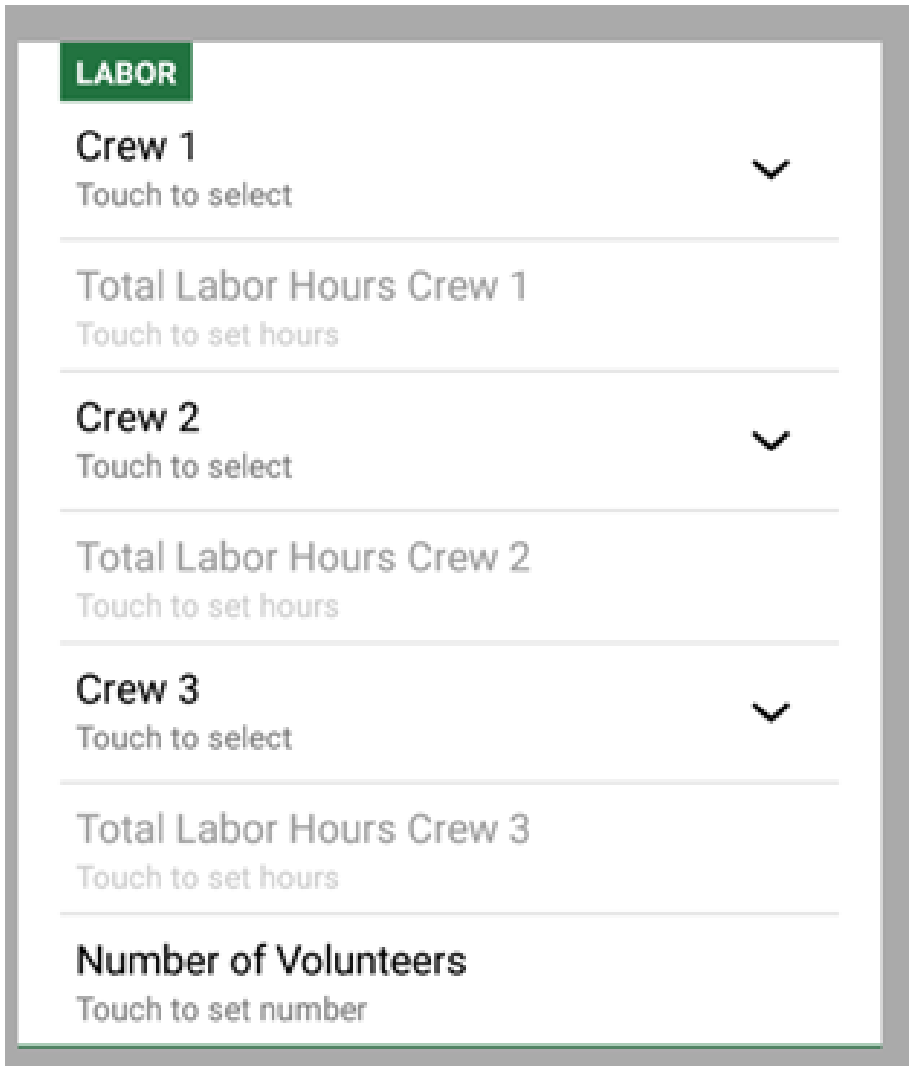
Org B

TREATMENT

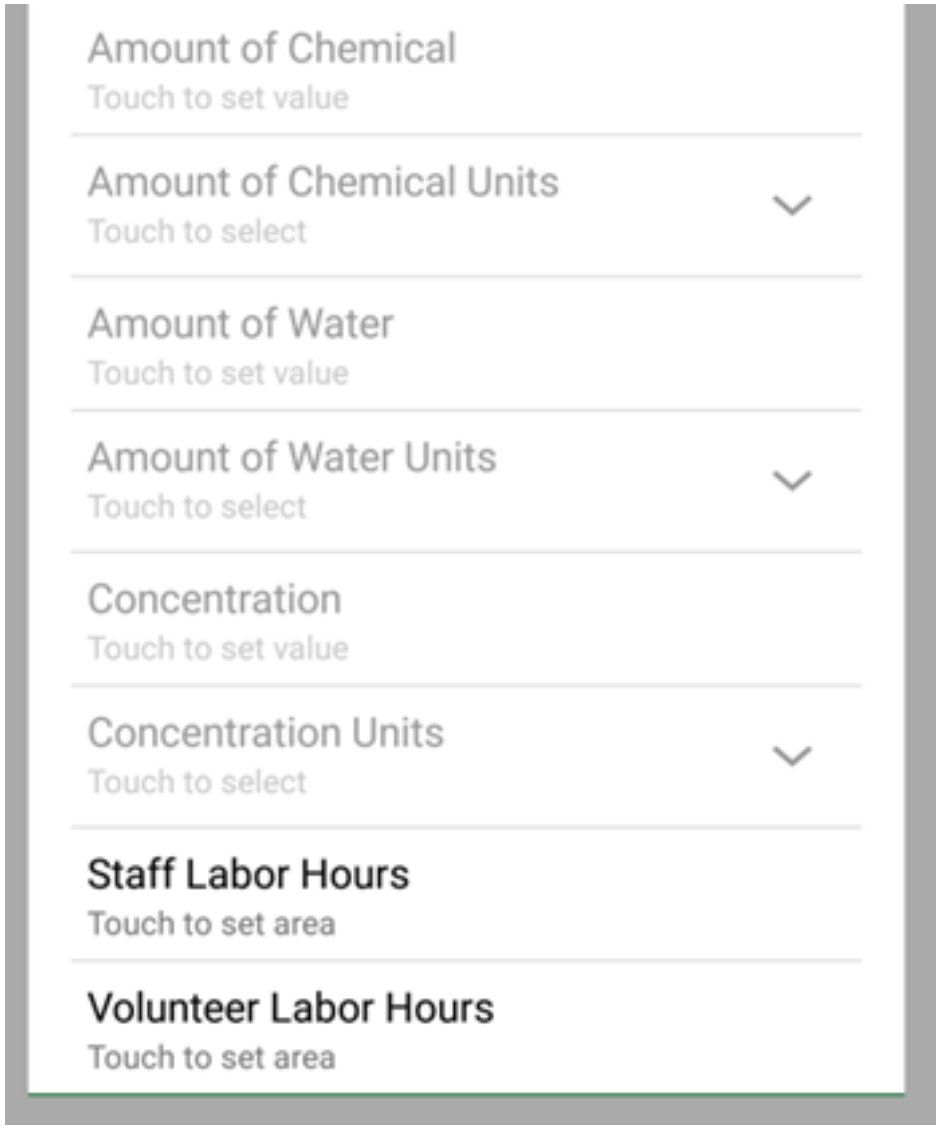
- Treatment Method
  Touch to select *
- Herbicide
  Touch to select
- Concentration (%)
  Touch to set value
- Percent Treated
  Touch to select
- Ounces of Chemical
  Touch to set value
- Ounces of Water
  Touch to set value
- Concentration (%)
  Touch to set value
- Treated Surface Area, square feet
  Touch to set value
- Percent Treated
  100
- Number of Plants Treated
  Touch to set value
- Number of Bags Removed
  Touch to set value
- Labor Hours
  Touch to set value

Various form options: you choose whether/which labor fields

Org A



Org B



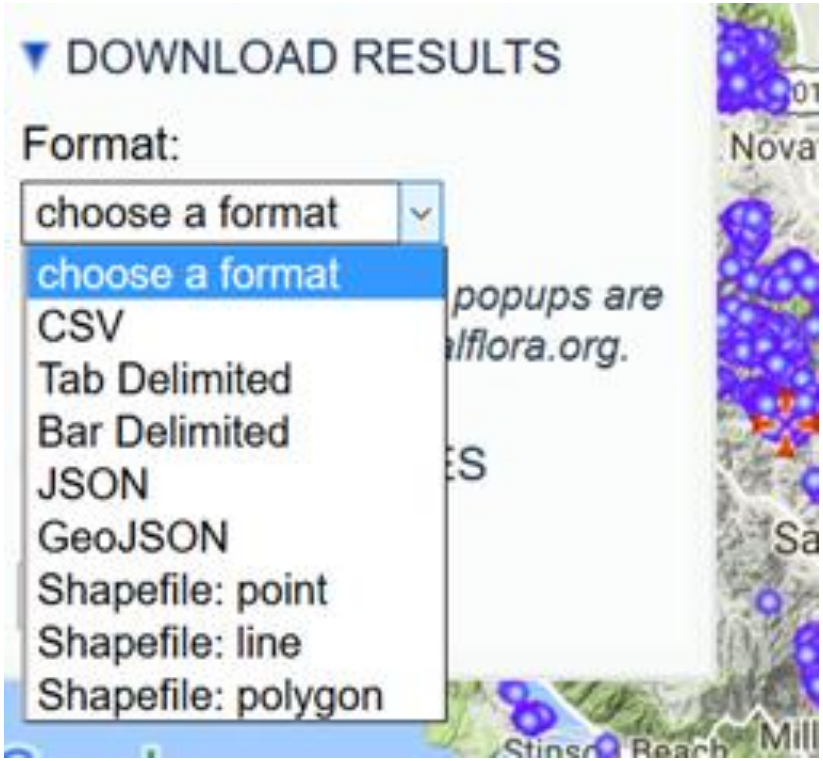
Agenda

Calflora basics

Weed Manager: Acquiring data and managing data

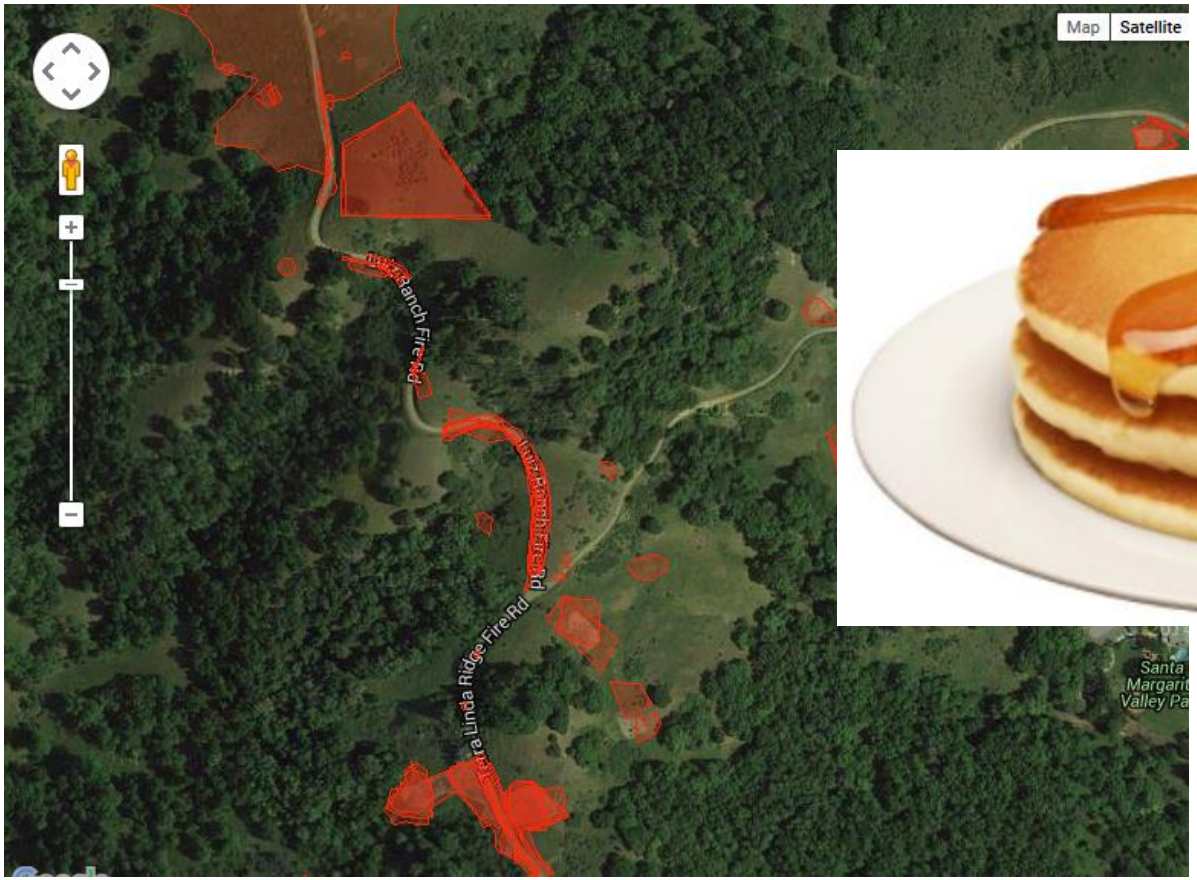
Using Phone App to Log Data

Weed Manager: Managing data



Data export

Weed Manager: Managing data



History stacks

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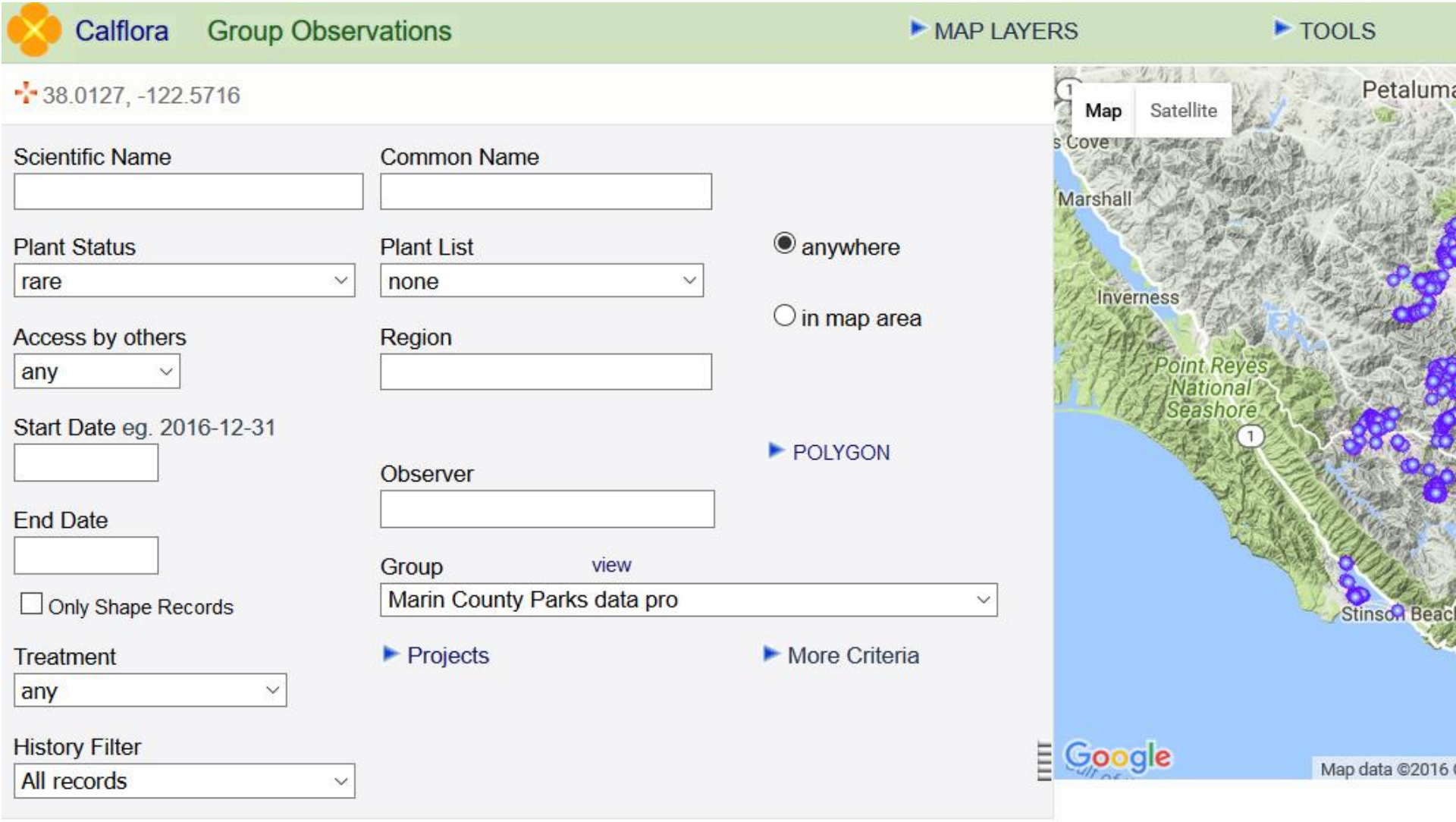
information on **wild California plants** for conservation, education, and appreciation

Weed Manager: Managing data



Group Observations

Agenda

Calflora basics

Weed Manager: Acquiring data and managing data:

- Groups
- Shapes
- Project setup
- Organization options
- Work session entry
- Reports
- Survey entry
- Hour and herbicide distributor

Using Phone App to Log Data

Weed Manager: Groups

A group is a set of people using Calflora with interests in common. In WM, the interests in common concern data collection and management-- actively contributing plant observations and monitoring observations contributed by others.

Any features which members of the group define -- observations, searches, plant lists -- can be shared within the group, and are easily discoverable by all members of the group.

Groups can also share unpublished observations with each other. A Calflora group may have one or more “data czar(s)” who can edit / publish / delete any observations in that group.

Weed Manager: Shapes

As a Calflora data contributor, you have your own portfolio of lines and polygons. Each time you enter an observation record with a line or polygon, the line or polygon goes into this portfolio. Each time you make a search polygon from Observation Hotline or What Grows Here, and save it by name, it goes into this portfolio.

With the Shape Editor application, you can view and edit any of the lines and polygons you may have added. You can also enter a new line or polygon. You can also upload a polygon shapefile, so that the polygons in the file become available for search in Observation Hotline and What Grows Here.

If you are a member of a group, then any lines or polygons owned by the group will also be available to you through this application. You can also share your polygons with a group.

Weed Manager: Project Setup

A project is a way of organizing data collection and treatment records; within the Weed Manager system, the assumption is that every record will be associated with a project. Further, work session information within Weed Manager is accumulated on a project basis.

Many of the fields in a project record are designed for the convenience of using the Observer Pro phone application.
In Observer Pro, all data for each of your organization's projects is loaded onto the phone each time you press REFRESH, including the plant list, center point, and historical records.
When using Observer Pro, you can easily switch between projects.

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Weed Manager: Organization Options

CREW | ROLES | ACTIVITIES | BILLING CODES | CHEMICALS | SEARCHES

10 Records Click on ○ to view a record.

	Role	Billing Method	Hourly Rate
○	Youth Crew	hourly	21.55
○	Seasonal Staff	hourly	42.59
○	Regular Staff	hourly	100.00
○	Contractor	fixed price	0.00
○	Contractor Hourly	hourly	50.00
○	Volunteer	hourly	35.00
○	One Tam Staff	hourly	0.00
○	One Tam Intern	hourly	0.00
○	CCNB Sup	hourly	59.75
○	CCNB Crew	hourly	30.75

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Weed Manager: Organization Options

CREW | ROLES | ACTIVITIES | BILLING CODES | CHEMICALS | SEARCHES

15 Records Click on ○ to view a record.

Type	Product	Company	Active Ingredient	Registration	Formulation
Dye	Hi-Light				
Dye	Turf Mark				
Surfactant	Pentra-bark			CA 83416-50001	
Surfactant	Competitor			CA 2935-50173	
Surfactant	Liberate			CA 34704-50030	
Herbicide	Garlon 4 Ultra	Dow AgroSciences	triclopyr	EPA 62719-527	
Herbicide	Aquamaster	Monsanto	glyphosate	EPA 524-343	liquid
Herbicide	Poast	CDMS	sethoxydim		
Herbicide	Habitat	BASF Specialty Herbicides	imazapyr	EPA 241-426	
Herbicide	Roundup Pro	Monsanto	glyphosate	EPA 524-475	liquid
Herbicide	Roundup	Monsanto	glyphosate		
Herbicide	Fusilade II	Syngenta Professional Products	flauziflop-p-butyl	EPA 100-1084	
Herbicide	Garlon 3A	Dow AgroSciences	triclopyr	EPA 62719-37	

Weed Manager: Work Session Entry

With the Work Session Entry application you can view, enter, or edit work session records for an organization. It can be used as an electronic timesheet, to track how much work was done, by whom, on which projects.

Note that a crew record can describe a single person (e.g. a member of the organization's staff), a contractor, or a volunteer group.

Weed Manager: Reports

VEGETATION AND BIODIVERSITY PROJECTS: MONTHLY IPM TREATMENT REPORT FORM

Marin County Open Space District

March 2016

CHEMICAL TREATMENTS

Date(s)	Preserve	Labor Source	Product Applied	EPA/Cal-EPA Registration Number	Undiluted Product Used	Target Pest	Hours
3/16	Terra Linda	Contractor	Fusilade II	100-1084	96 oz	Aegilops triuncialis	33
" "	" "	" "	Competitor	2935-50173	192 oz	" "	" "

OTHER MANAGEMENT ACTIVITIES

Date(s)	Preserve	Labor Source	Activity	Target Pest	Hours
3/3	Indian Valley	Staff	Hand pulling	Genista monspessulana	7.5
3/3	Roy's Redwoods	Staff	Hand pulling	Phalaris aquatica	4.0
3/3	Roy's Redwoods	Staff	Hand pulling	Genista monspessulana	2.0
3/3	French Ranch	Staff	Hand pulling	Arundo donax	0.5
3/4	Kent Island	Staff	Hand pulling	Cakile maritima	4.5
3/4	Kent Island	Staff	Hand pulling	Ammophila arenaria	9.0
3/7-3/8	Indian Valley	Staff	Hand pulling	Genista monspessulana	22.5
3/8	Indian Valley	Staff	Hand pulling	Cytisus scoparius	0.5
3/8-3/9	Lucas Valley	Staff	Shovel shear	Pyrocantha angustifolia	2.5
3/9-3/10	Ring Mountain	Staff	Hand pull	Cortaderia jubata	11.5
3/9	Lucas Valley	Staff	Hand pull	Grevillea robusta	1.0

Weed Manager: Survey Entry

A survey is a search for certain plants in a discrete area at a certain time. To enter a survey record, you will need to specify the area, the date, and a plant list. For each plant in the plant list, you can indicate whether or not you found it. If you did find it, you may indicate how abundant it was (1+, 1-10, 11-100, etc.).

You may also indicate plant count zero for “not found,”
→ absence data for that surveyed area.

Weed Manager: Hour and Herbicide Distributor (HHD)

This application allows a user to apply a number of work hours and amount of herbicide to all treatment records for a chosen organization, project, and day. The user sees a list of matching treatment records, each with a value for gross area and percent cover.

HHD divides the total hours in proportion to the infested area of each record and shows this to the user in a preview table. The user can then adjust the number of hours allocated to each treatment record.

Agenda

Calflora basics

Weed Manager: acquiring data, managing data, and using Observer Pro phone application

Using Phone App to Log Data

Google play

Search

Apps

Categories

Home

Top Charts

New Releases

My apps

Shop

Games

Editors' Choice

Calflora Observer Pro

John Malpas - June 9, 2014

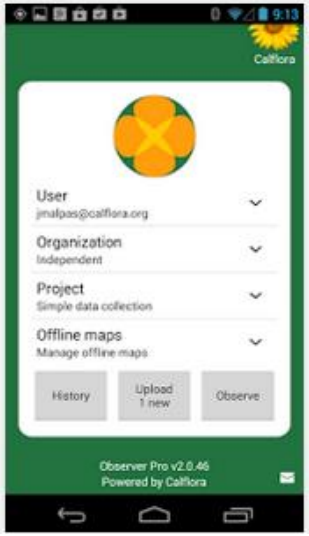
Education

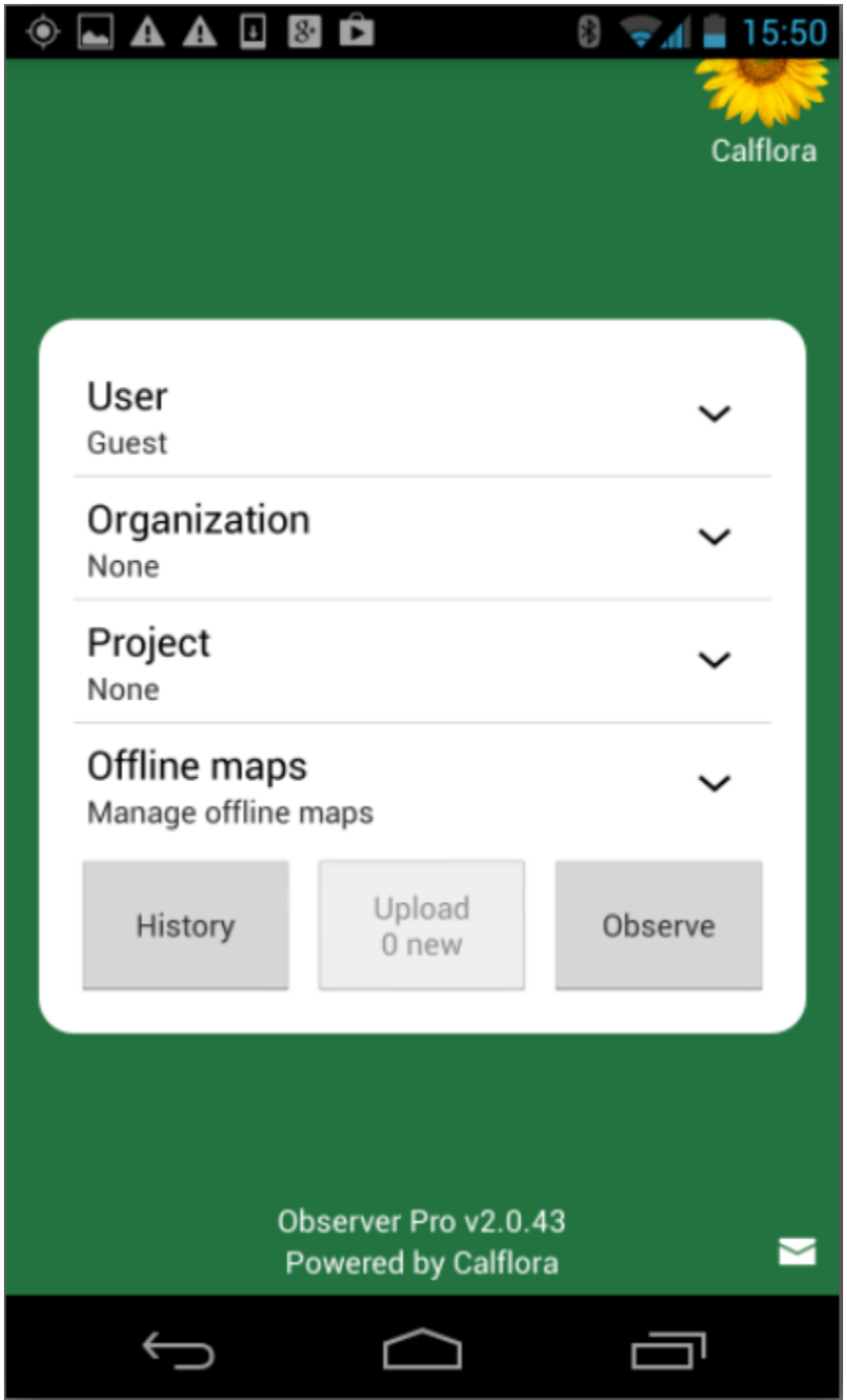
Installed

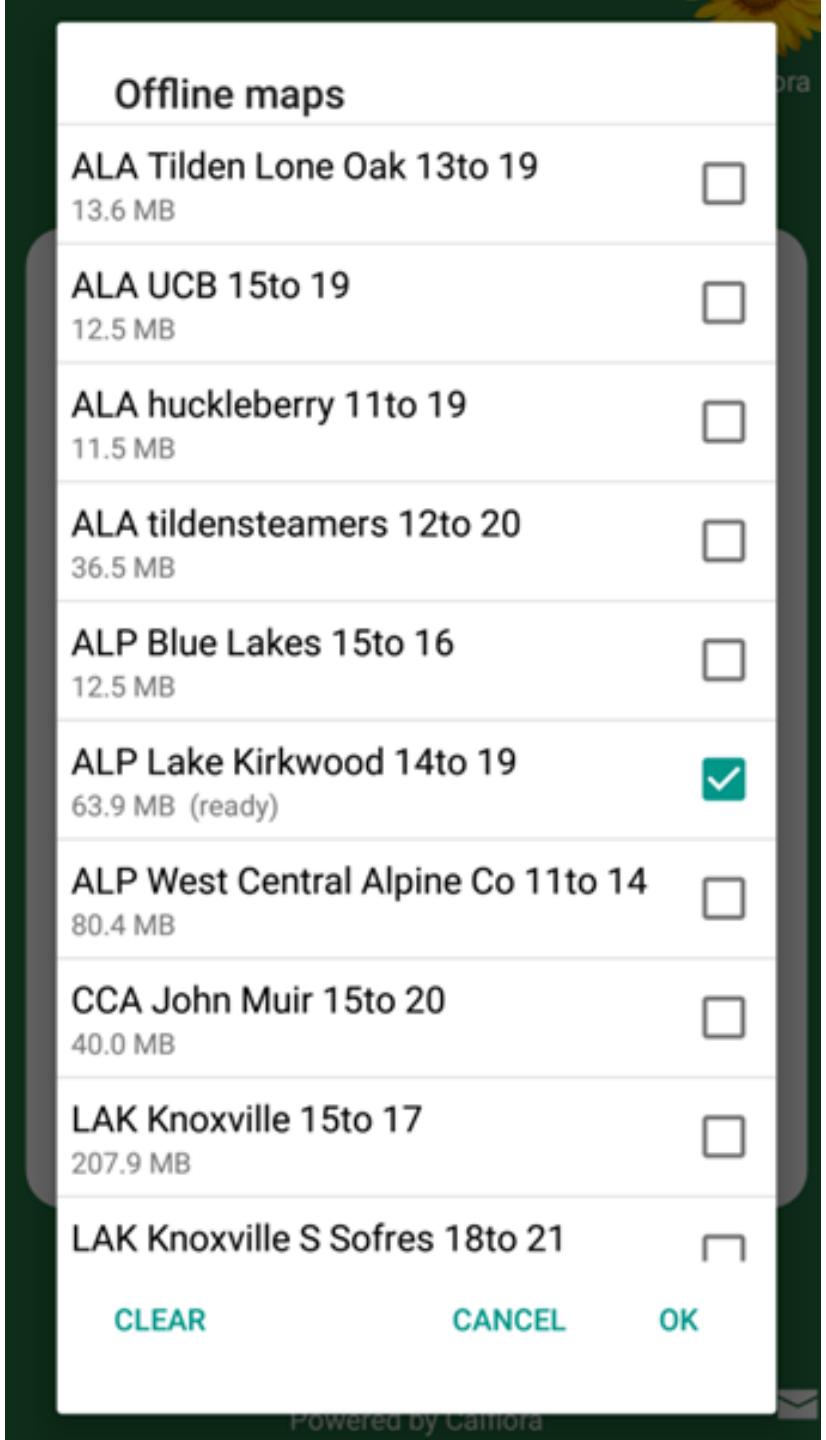
This app is compatible with all of your devices.

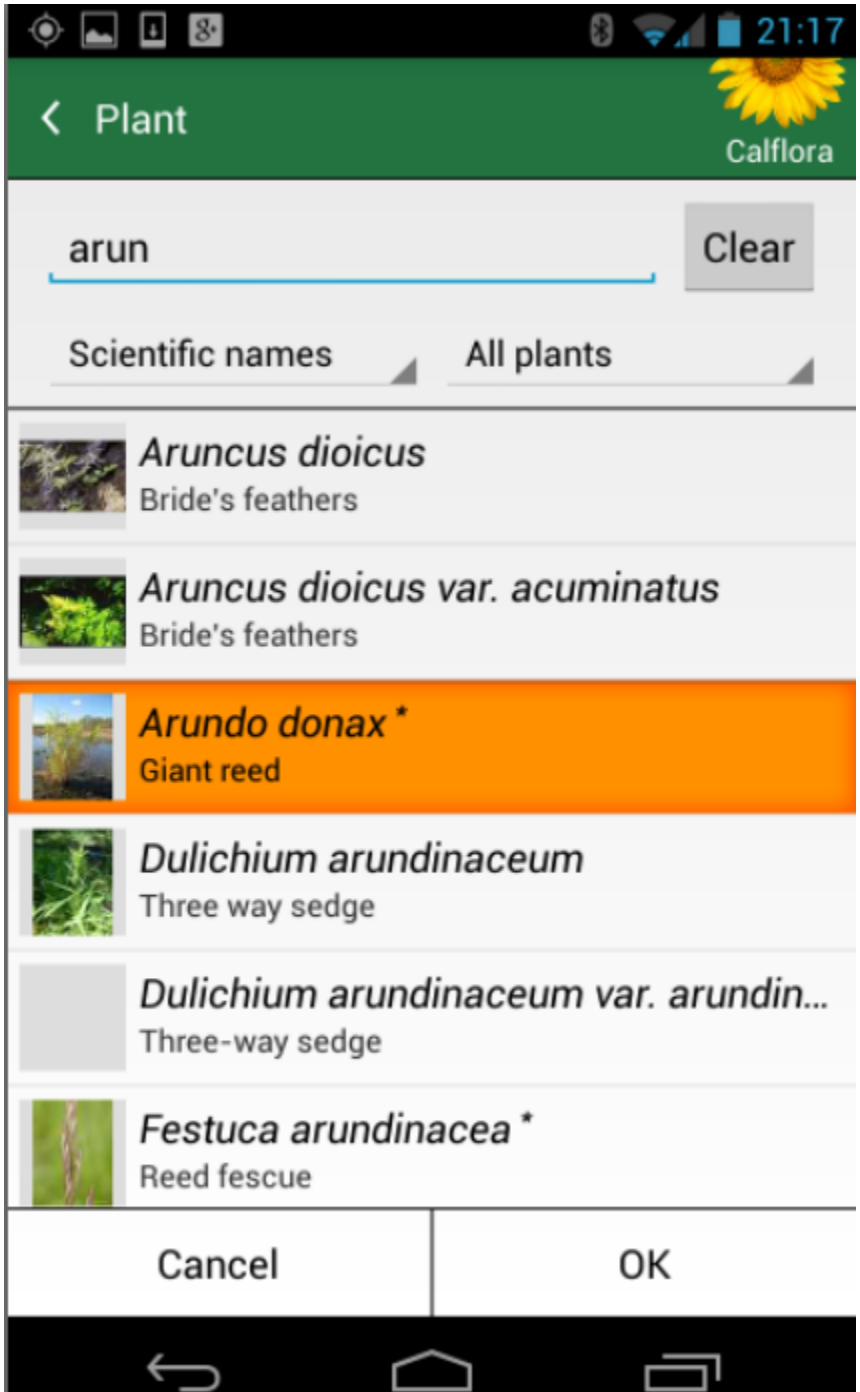
★★★★☆ (11)

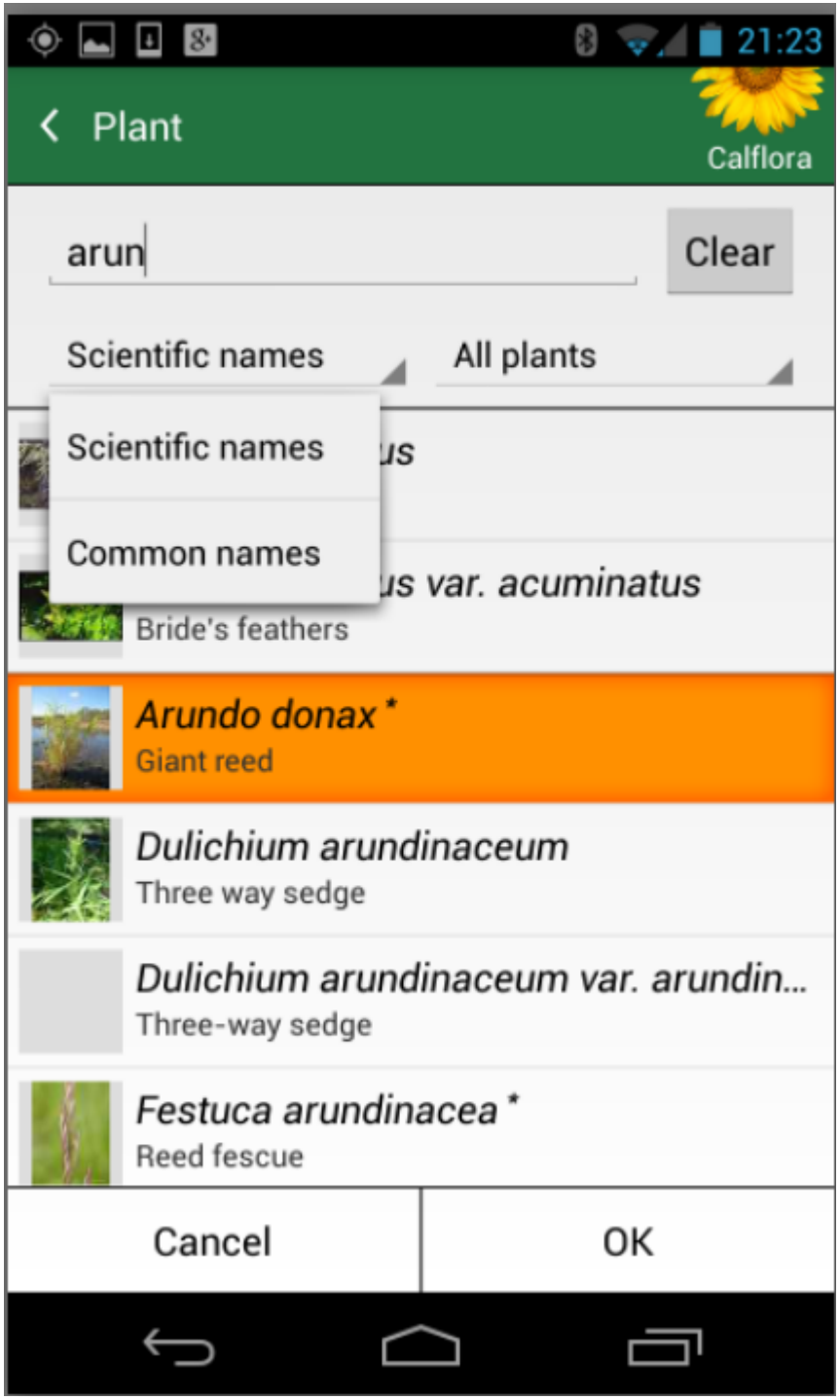
+1 +9 Recommend this on Googl

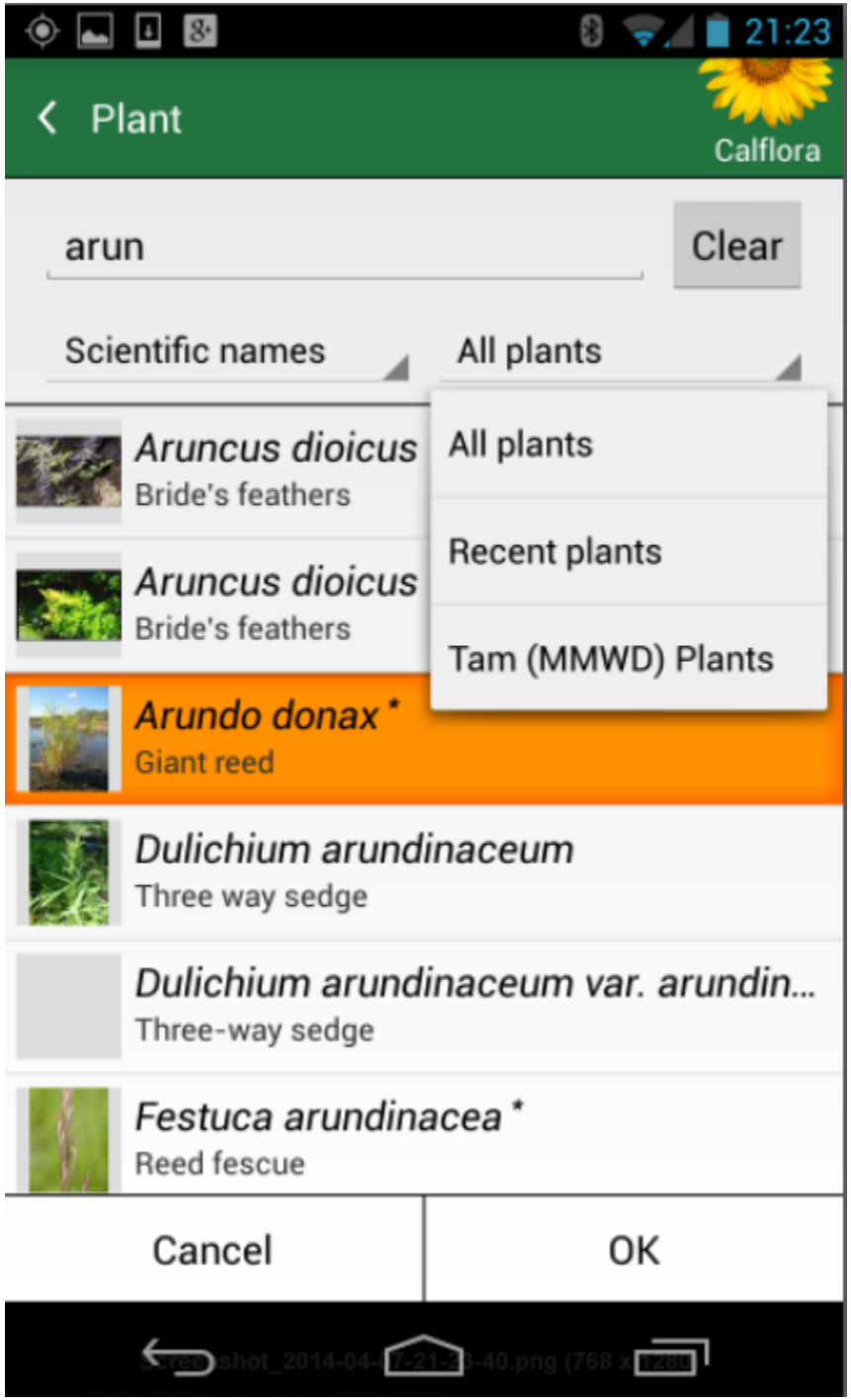


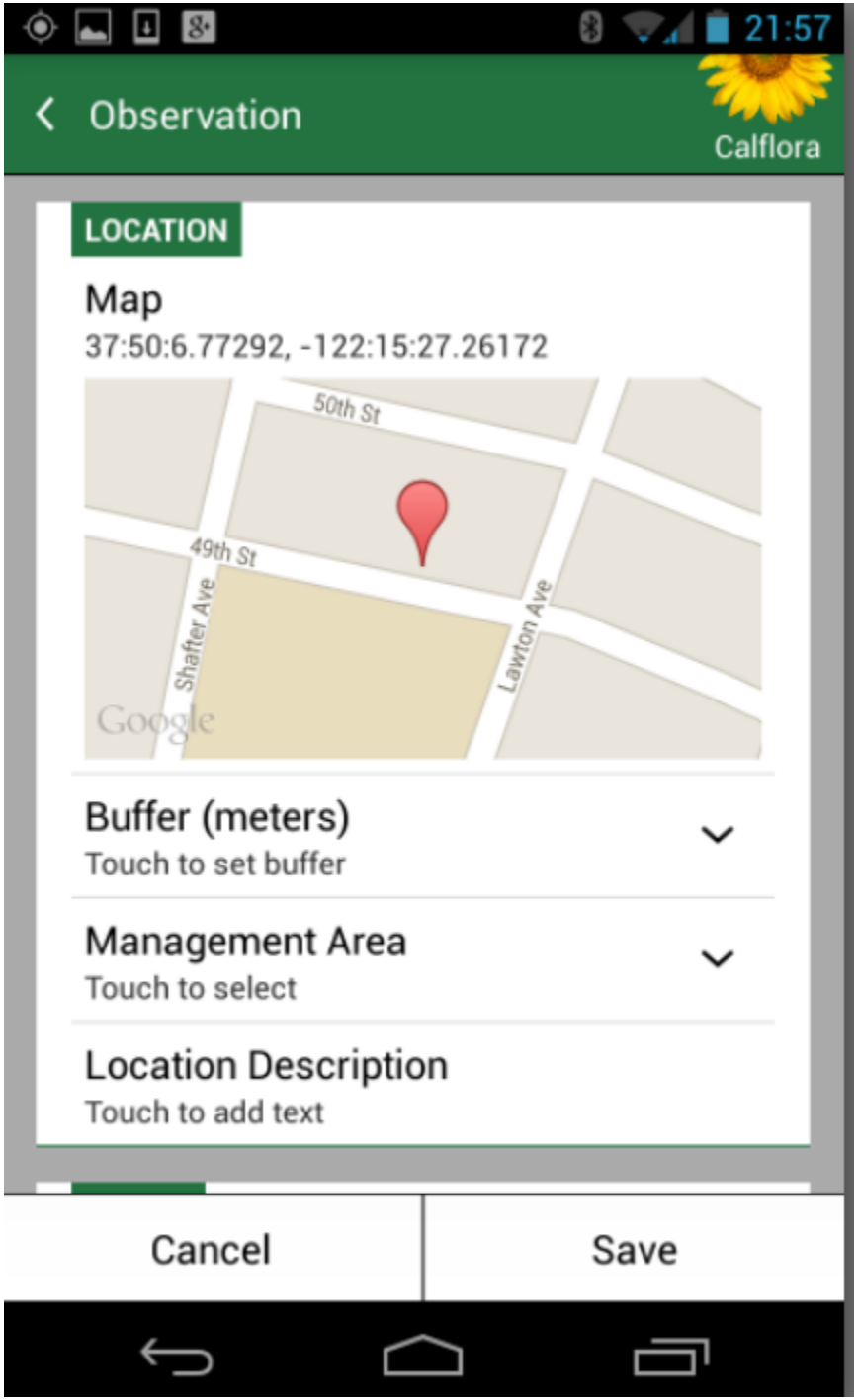

15:50
Calflora
User
Guest
Organization
None
Project
None
Offline maps
Manage offline maps
History
Upload
0 new
Observe
Observer Pro v2.0.43
Powered by Calflora

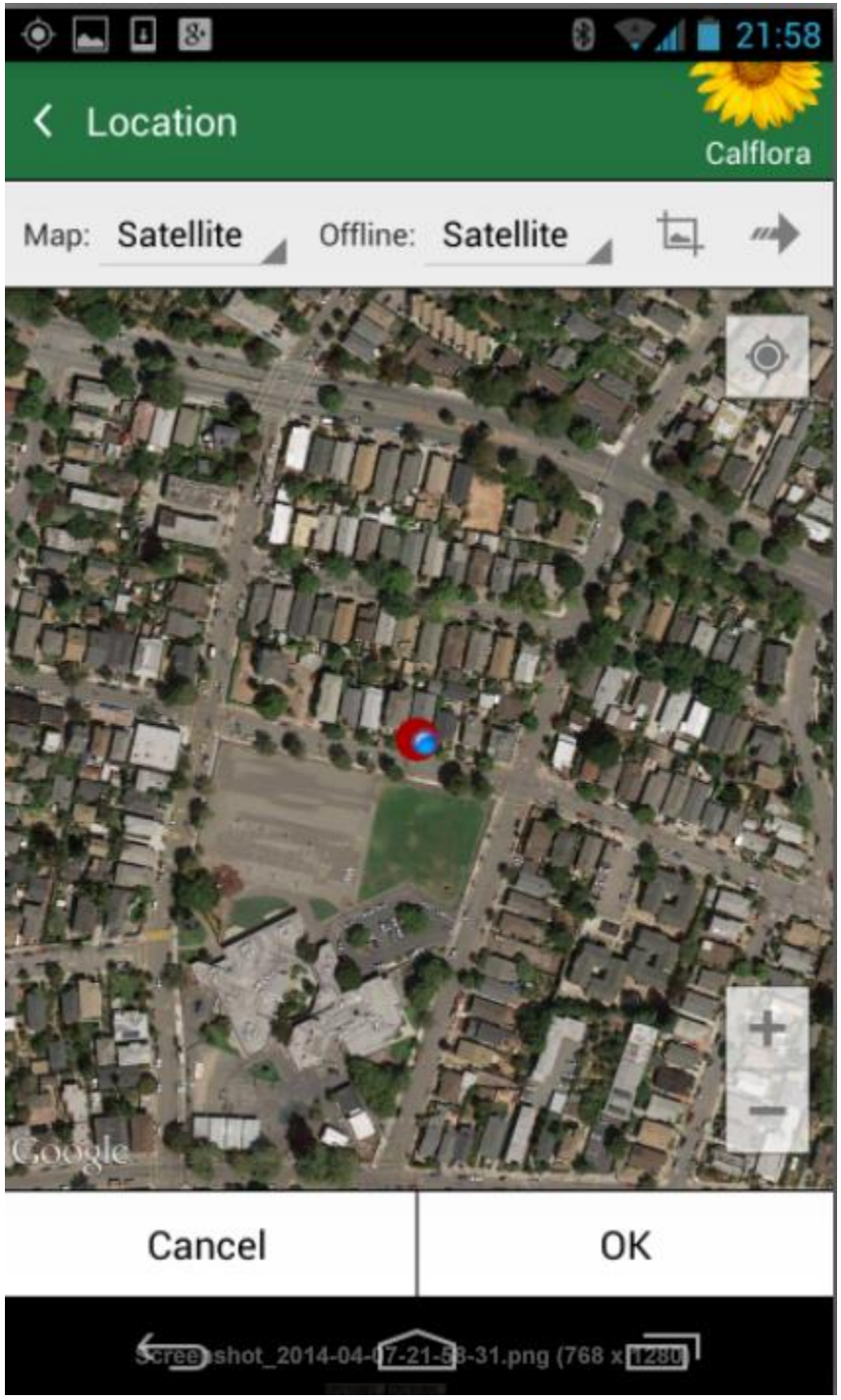

Offline maps
ALA Tilden Lone Oak 13to 19
13.6 MB
ALA UCB 15to 19
12.5 MB
ALA huckleberry 11to 19
11.5 MB
ALA tildensteamers 12to 20
36.5 MB
ALP Blue Lakes 15to 16
12.5 MB
ALP Lake Kirkwood 14to 19
63.9 MB (ready)
ALP West Central Alpine Co 11to 14
80.4 MB
CCA John Muir 15to 20
40.0 MB
LAK Knoxville 15to 17
207.9 MB
LAK Knoxville S Sofres 18to 21
CLEAR
CANCEL
OK


21:17
Plant
Calflora
arun
Clear
Scientific names
All plants
Aruncus dioicus
Bride's feathers
Aruncus dioicus var. acuminatus
Bride's feathers
Arundo donax *
Giant reed
Dulichium arundinaceum
Three way sedge
Dulichium arundinaceum var. arundin...
Three-way sedge
Festuca arundinacea *
Reed fescue
Cancel
OK

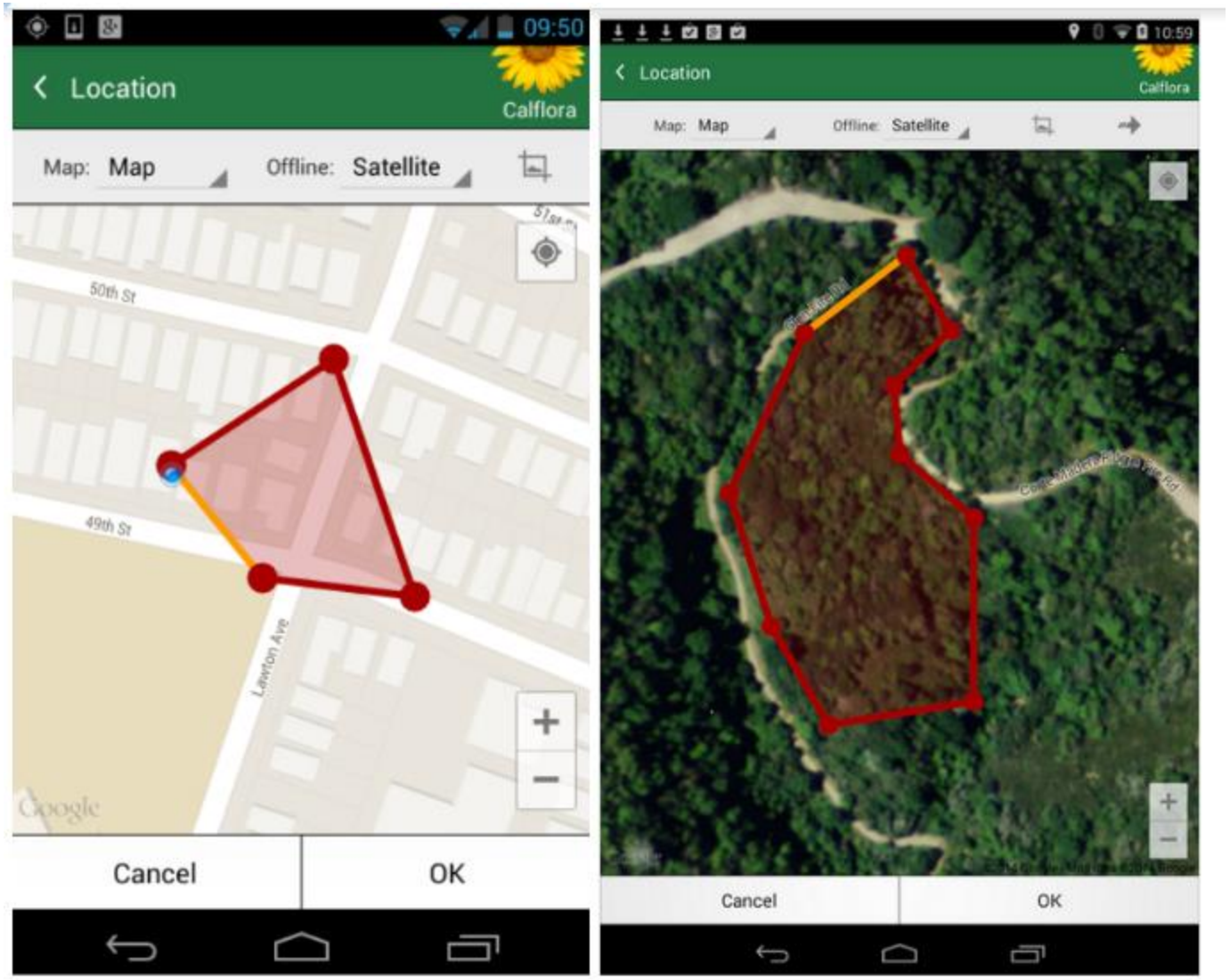

21:23
Plant
Calflora
arun
Clear
Scientific names
All plants
Scientific names
Common names
us
us var. acuminatus
Bride's feathers
Arundo donax *
Giant reed
Dulichium arundinaceum
Three way sedge
Dulichium arundinaceum var. arundin...
Three-way sedge
Festuca arundinacea *
Reed fescue
Cancel
OK

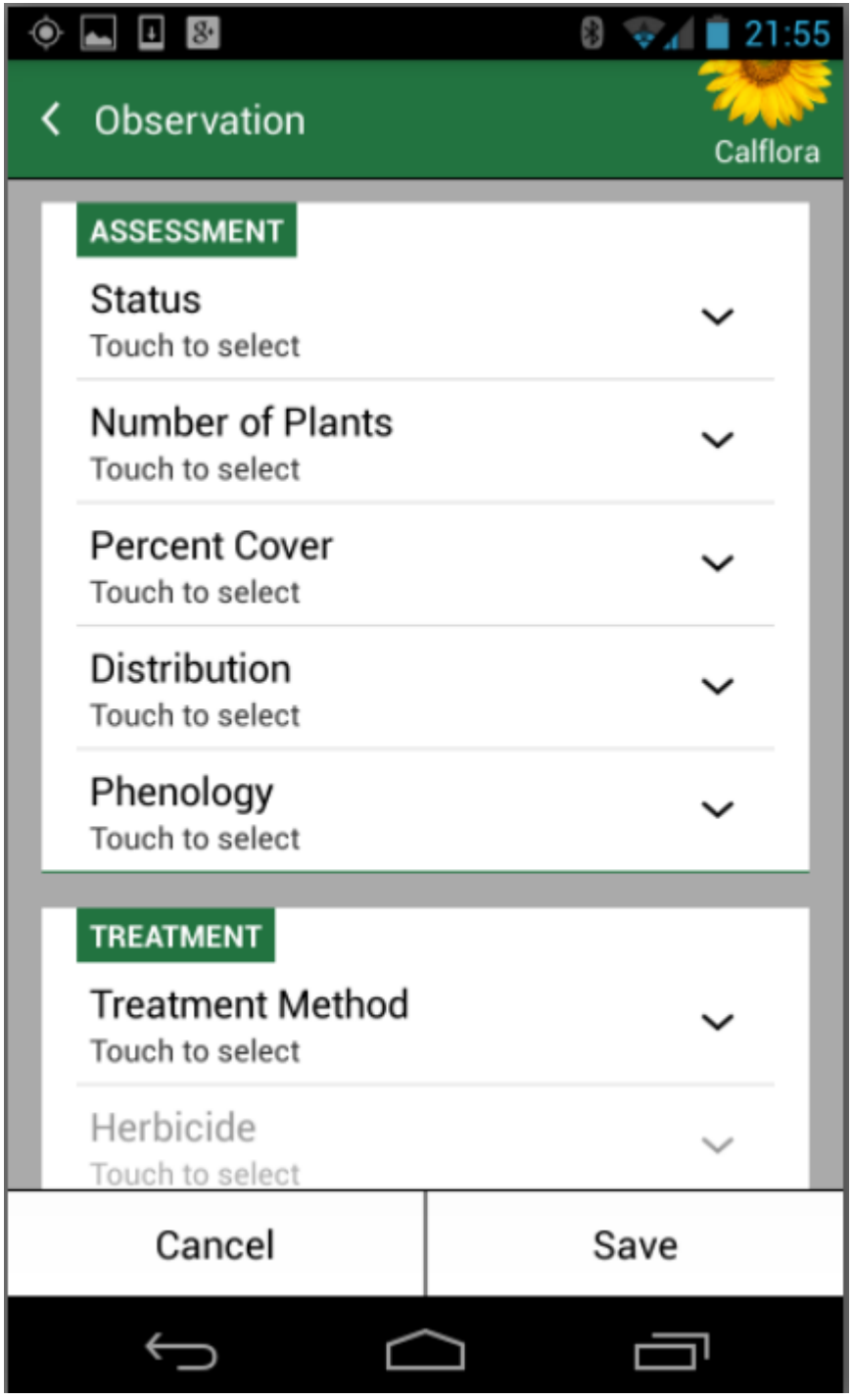

21:23
Plant
Calflora
arun
Clear
Scientific names
All plants
All plants
Recent plants
Tam (MMWD) Plants
Aruncus dioicus
Bride's feathers
Aruncus dioicus
Bride's feathers
Arundo donax *
Giant reed
Dulichium arundinaceum
Three way sedge
Dulichium arundinaceum var. arundin...
Three-way sedge
Festuca arundinacea *
Reed fescue
Cancel
OK


21:57
Observation
Calflora
LOCATION
Map
37:50:6.77292, -122:15:27.26172
50th St
49th St
Shafter Ave
Lawton Ave
Google
Buffer (meters)
Touch to set buffer
Management Area
Touch to select
Location Description
Touch to add text
Cancel
Save


21:58
Location
Calflora
Map: Satellite
Offline: Satellite
Google
Cancel
OK

Drawing polygons




21:55
Observation
Calflora
ASSESSMENT
Status
Touch to select
Number of Plants
Touch to select
Percent Cover
Touch to select
Distribution
Touch to select
Phenology
Touch to select
TREATMENT
Treatment Method
Touch to select
Herbicide
Touch to select
Cancel
Save

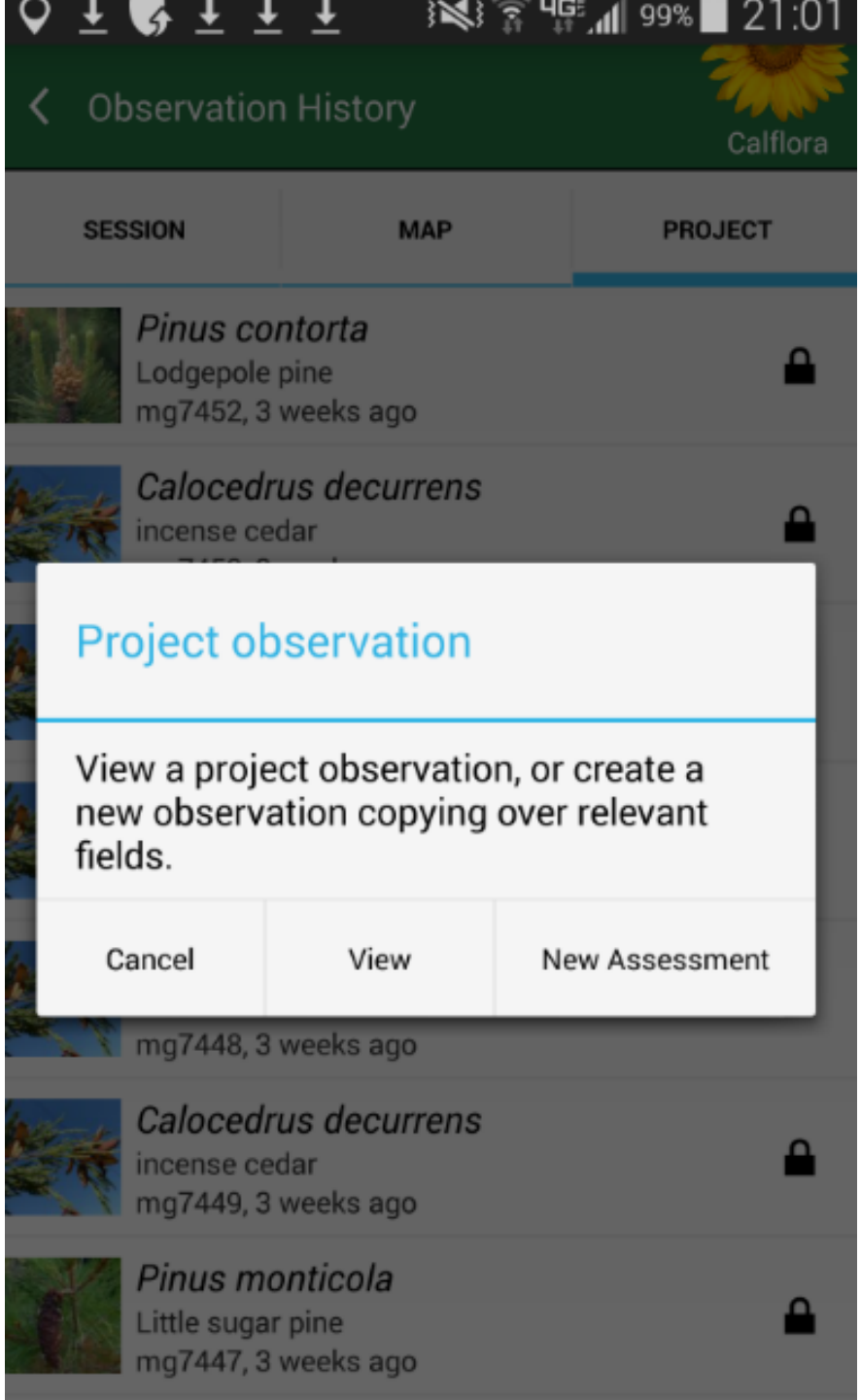
Observer Pro Android Application

- Don’t need data plan at all

- Don’t need wifi in the field

- Do need wifi before you go in the field and after to login and (later) upload observations

Coming back the following year for a new assessment of the same patch



Satellites and Accuracy

Garmin GLO Bluetooth GPS for iOS and Android

Dual XGPS150A

Universal Bluetooth® GPS receiver for portable devices

GNS 2000 GPS MFI GLONASS RECEIVER

Agenda

Calflora basics

Weed Manager: acquiring and managing data

Using Phone App to Log Data

Thank you! Questions?