

A Hybrid Approach to Real-Time Data Collection & Mapping Invasive Weeds



iFormBuilder™



iOS Android

Presented by: Greg Haubrich
9/17/2014



Data Collection System Requirements:

- Highly Scalable & Reliable
- Offline Capabilities
- Real-Time Capabilities
- Image Capture & GPS
- Simple Conversion to Mapping Format
- Versatile and Dynamic Forms
- Powerful yet Intuitive



iFormBuilder™

offline



no connection?
no problem.

- Signed contract on Feb. 20th, fully up and running in the field by the end of April

flexible



easy-to-build forms
powerful skip logic

- Affordable, multiple pricing options
- Excellent Help Documentation

secure



platform for HIPAA, FISMA,
& ISO9000 projects

- Skip Logic, quick form creation and assignment
- Very engaged support from company reps
- Silver partner with ESRI & Highly Integrated



Hardware Capabilities:

iPhone 5

iPad Mini

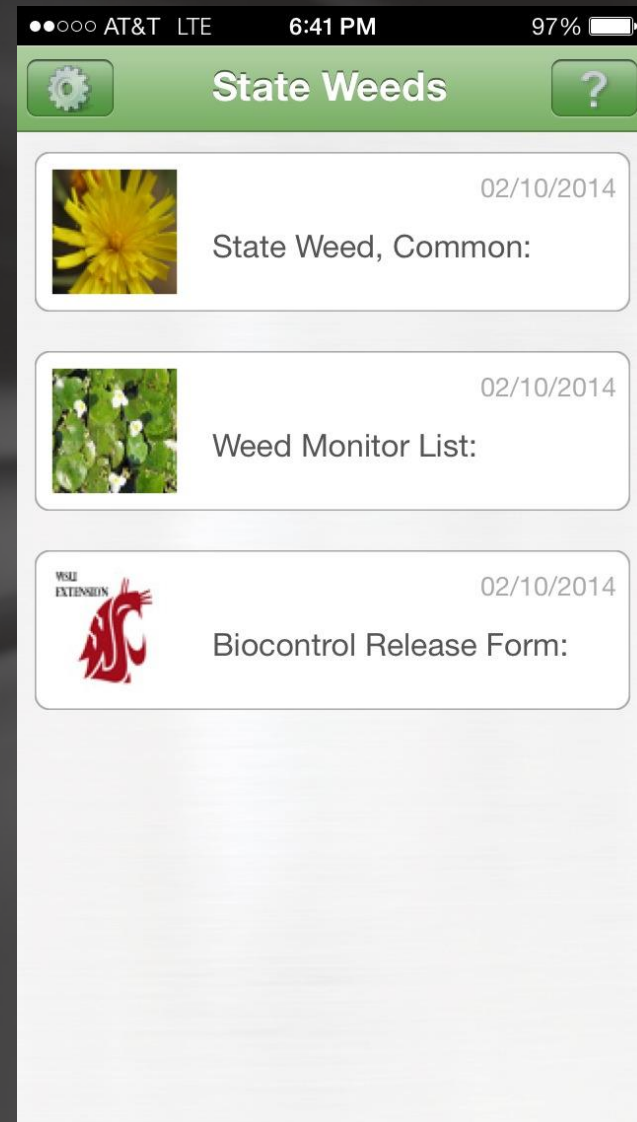
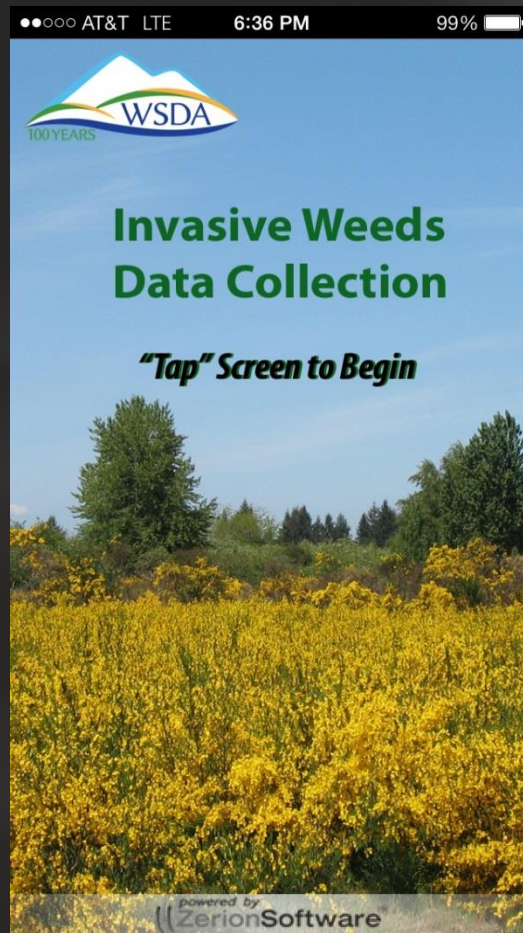
iPad 3 & 4

iPod + BT GPS



- Sufficient Screen Size
- High Resolution Photos
- Fast Data Speeds, LTE
- Touch Based Technology
- Utilized Otterbox Cases
- Simple/Intuitive Design

Mobile Screenshots:



AT&T 1:12 PM 78%

Settings iForm

Synchronization

Server Name wsda.iformbuilder.com

Sync on Start OFF

Auto Sync ON

Delete on Upload OFF

Download Records ON

Picture Widget

Picture Size Large >

Move and Scale ON

Save copy in Album ON

Appearance

AT&T LTE 6:42 PM 97%

Back Settings

Login

ghaubrich128

.....

SYNC/LOGIN

Logout

Version 5.6.1.14

Memory Usage
Free: 268.1MB Total: 664.5MB



Unique Collection ID: *: 1

Date of Survey: *

Feb 10, 2014

Collector: *: ghaubrich128

Common Weed Name: *

Ownership:

Total Plants:



babysbreath

absinth wormwood

Austrian fieldcress

babysbreath

black henbane

blackgrass

GPS Location: *

Plant Image 1:

Plant Image 2:

Cancel

Biocontrol Relea...

Save

Unique Record ID:: 5

Released By:: ghaubrich128

State: *

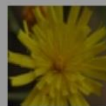
County: *

Release Site Name:
(Unique to site) *

Biocontrol Agent *



State Weeds



02/10/2014

State Weed, Common:



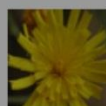
02/11/2014

WDEW, General Weed



02/10/2014

Biocontrol Release Form:



✓ 2

02/11/2014

State Weed, Common
DEMO:

Cancel

Biocontrol Relea...

Save

Photo 3:

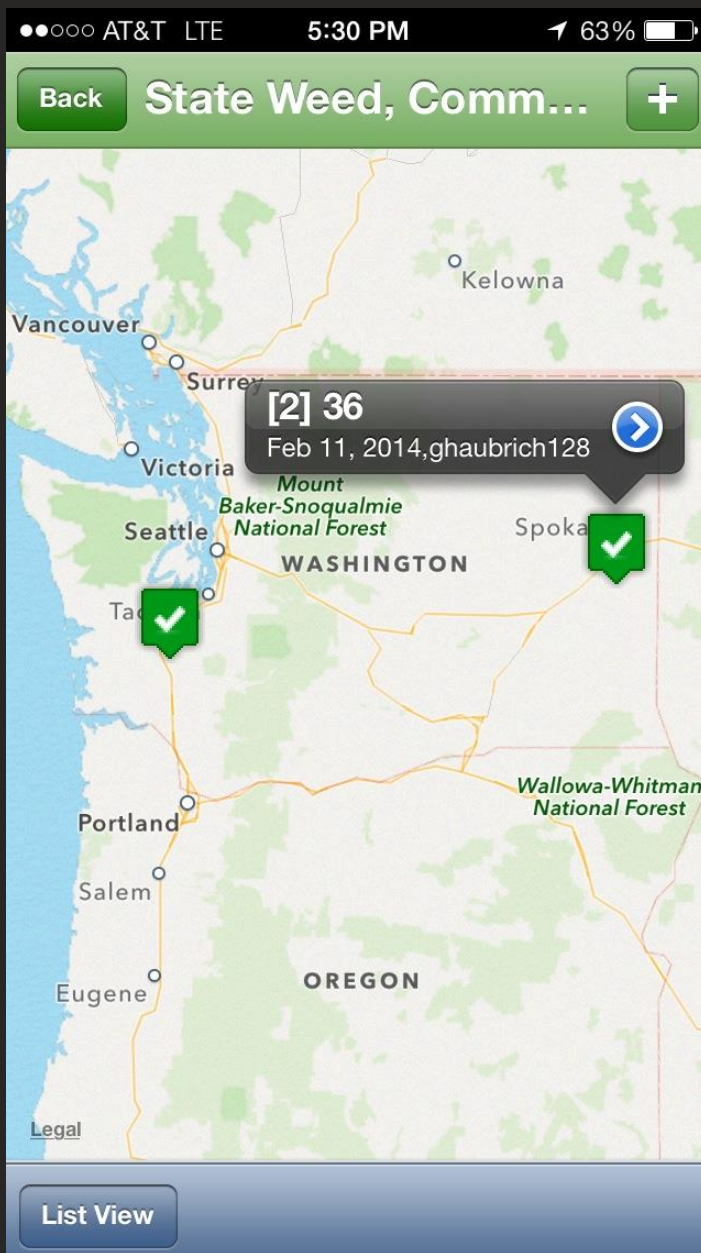
Environment Data is NOT Required:
(But Helpful)



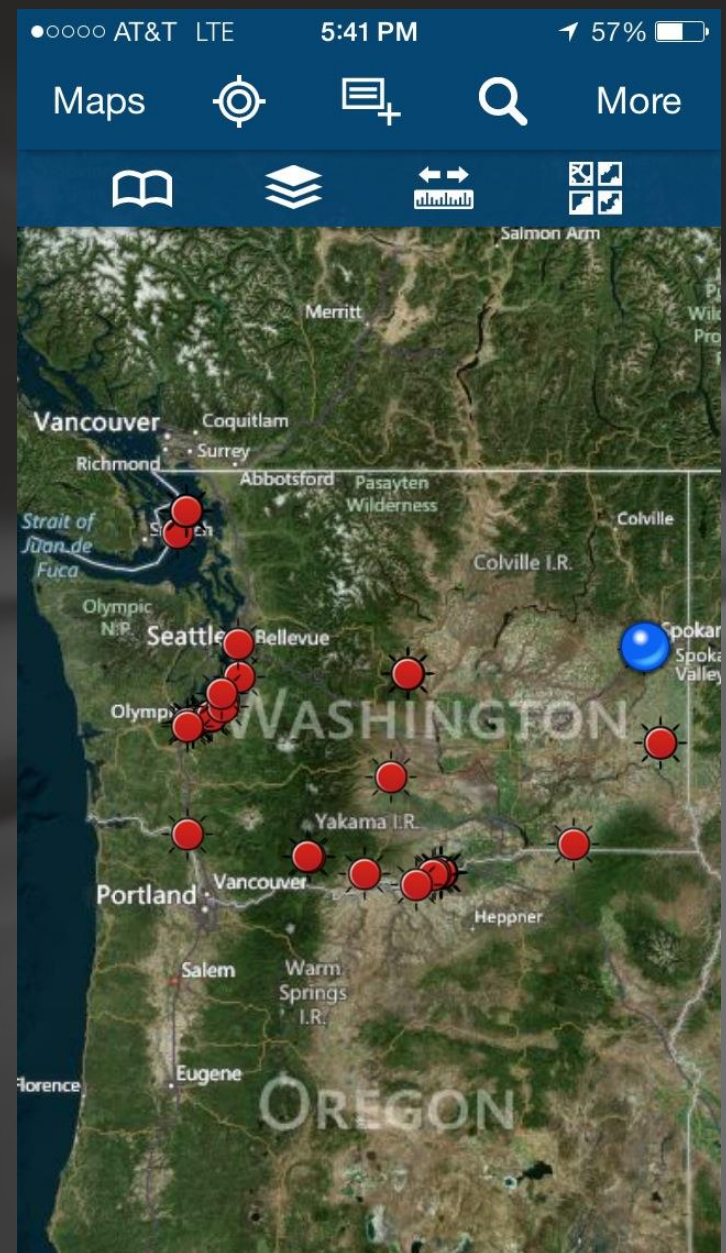
Environment Data Subform:

Double Check Data Before
Submitting the Form!

Submit



iForm



ArcGIS Collector




Centralized Management Website:

- Mapping of Data
- User Company Assignment
- Form Creation & Assignment
- Data Review and Editing



Website Layout:



Washington
State Department of
Agriculture

DataFormsUsersCompanySupport

My Data

Views: ListMapGraphHTMLExcelExcel FlatFeeds: XLSXLS*XMLJSONRSSRTMP

Filtered?	ID	Form Label	Table Name	Last Record Modified Date	Last Record Modified Location	Data Record Count
	2105683	State Weed, Common DEMO:	state_weed_common_demo_copy	2014-02-11 17:24:09	47.623050;-117.546617;732.773438;3158.000000;12.000000	55
	2109544	WDFW Chemical Treatment DEMO:	wdfw_chemical_treatment_demo	2014-01-28 12:32:05	47.272045;-122.503797;108.000000;5.000000;12.000000	1
	2109541	WDFW General Weed Detection DEMO	wdfw_general_weed_detection_demo	2014-01-28 12:27:57	47.272690;-122.505124;102.000000;10.000000;8.000000	1
	2106373	Weed Monitor List:	weed_monitor_list	2014-01-14 15:00:32	47.057885;-122.913421;3.820816;5.000000;4.000000	16
	2106132	State Weed, Common:	state_weed_common	2013-10-11 16:43:50	47.732697;-122.358064;137.522419;5.000000;3.000000	84
	2107152	State Weed, Common Island:	state_weed_common_island	2013-10-10 16:59:44	47.953565;-122.438539;8.984285;5.000000;9.500000	3
	2105972	Biocontrol Release Form:	biocontrol_release_form	2013-09-19 15:09:04	46.072850;-118.815923;114.124878;50.000000;64.000000	78
	2107141	State Weed, Common Klickitat:	state_weed_common_klickitat	2013-09-09 10:46:35	45.728125;-121.483544;187.000000;5.000000;4.000000	17
	2105975	Biocontrol Environment Date:	biocontrol_environment_date	2013-09-06 12:50:40	46.205909;-123.388387;3.124664;5.000000;3.000000	63
	2107155	Biocontrol Release Form, klickitat:	biocontrol_release_form_klickitat	2013-08-19 15:56:31	45.985616;-121.483657;535.000000;5.000000;3.000000	2
	2107158	Biocontrol Environment Date, klickitat:	biocontrol_environment_date_klickitat	2013-08-19 15:46:44	45.985591;-121.483599;536.000000;5.000000;4.000000	2
	2105924	Biocontrol Release Form DEMO:	biocontrol_release_form_demo	2013-05-13 10:18:01	47.300389;-122.569929;86.526810;10.000000;2.000000	13
	2105927	Biocontrol Environment Date DEMO:	biocontrol_environment_date_demo	2013-05-10 12:01:38	48.323771;-122.374486;-0.062775;5.000000;3.000000	10
	2109514	State Weed, Common Whitman:	state_weed_common_whitman	0000-00-00 00:00:00		0
	2107189	Biocontrol Release Form, Grays Harbor:	biocontrol_release_form_grays_harbor	0000-00-00 00:00:00		0
	2109547	WDFW Mechanical Treatment DEMO:	wdfw_mechanical_treatment_demo	0000-00-00 00:00:00		0
	2107169	Biocontrol Release Form, Island:	biocontrol_release_form_island	0000-00-00 00:00:00		0
	2107206	Biocontrol Environment Date, Grays Harbor:	biocontrol_environment_date_grays_harbor	0000-00-00 00:00:00		0
	2107186	Biocontrol Environment Date, San Juan:	biocontrol_environment_date_san_juan	0000-00-00 00:00:00		0
	2107203	Biocontrol Environment Date, Whitman:	biocontrol_environment_date_whitman	0000-00-00 00:00:00		0

Find ☐ Table Name

SearchReset

(Check the checkbox for exact match)

100

Page 1 of 1

Displaying 1 to 25 of 25 items



Form Creation:

The screenshot displays the WSDA FormBuilder interface. The top navigation bar includes the WSDA logo, the text "Washington State Department of Agriculture", and user information: "Logged in as ghaubrich128 Profile [327968]". Below the navigation bar are tabs for "Data", "Forms", "Users", "Company", and "Support".

The main interface is divided into two primary sections, both highlighted with red rounded rectangles:

- Design Layout (Left Panel):** This panel shows a preview of the form titled "WDFW General W...". It includes a list of input fields with their respective types: "Date of Survey:" (Date-Time), "Collector:" (Text), "Noxious Weed Found:" (Pick List), "Other Weed Names:" (Pick List), and "Unique Weed Name:" (Text). At the bottom of this panel are buttons for "Add New Input", "Duplicate Input", and "Delete Input".
- Define Inputs (Right Panel):** This panel is used to configure the selected input element. It contains sections for "Element Properties" (Common, Label, Data Column Name, Based on label, Description) and "Input Properties" (Option List, Smart Paging, Smart Control, Smart Table Search, Reference ID, Info). A note at the bottom states: "Note: Changing 'Input Type', 'Data Size', or 'Encryption' for any element will drop the column from the database and all existing data will be erased." Buttons for "Auto-Save" and "Load" are also present.

Design Layout

Define Inputs

Form Assignment & Removal:



Washington
State Department of
Agriculture

Logged in as ludo@agr.wa.gov Managing profile [327968]

Logout

Data

Forms

Users

Company

Support

Server Admin

state_weed_common_demo_copy

Form Assignment
Form Builder
Form Group
Localization

Collect ☐

View ☐

ahalpern	<input checked="" type="checkbox"/>	<input type="checkbox"/>
bpaterno	<input type="checkbox"/>	<input type="checkbox"/>
dheimerwdfw	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ghaubrich128	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
jandreas	<input type="checkbox"/>	<input type="checkbox"/>
jjackson	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
jstein	<input type="checkbox"/>	<input type="checkbox"/>
mihudson	<input type="checkbox"/>	<input type="checkbox"/>
owright	<input type="checkbox"/>	<input type="checkbox"/>

Email Alert

Email new records to the following addresses (separate by commas):
Require Client version 2.3 or higher

Post Data

Post Format:

XML ☐

Post Type:

☒ HTTP Header ☐ HTTP Key/Value Pair

URL:

Email error to the following address:

Format data using current model:

Form Sharing

Disable Automatic Allow Copy ☐

Profile Id	Share <input type="checkbox"/>	Allow Copy <input type="checkbox"/>
1-Zerion Software	<input type="checkbox"/>	<input type="checkbox"/>
279606-Gypsy Moth Program	<input type="checkbox"/>	<input type="checkbox"/>
327954-Apple Maggot Program	<input type="checkbox"/>	<input type="checkbox"/>
327957-Spartina & Knotweed Programs	<input type="checkbox"/>	<input type="checkbox"/>
327971-JB, Snails, Other Programs	<input type="checkbox"/>	<input type="checkbox"/>

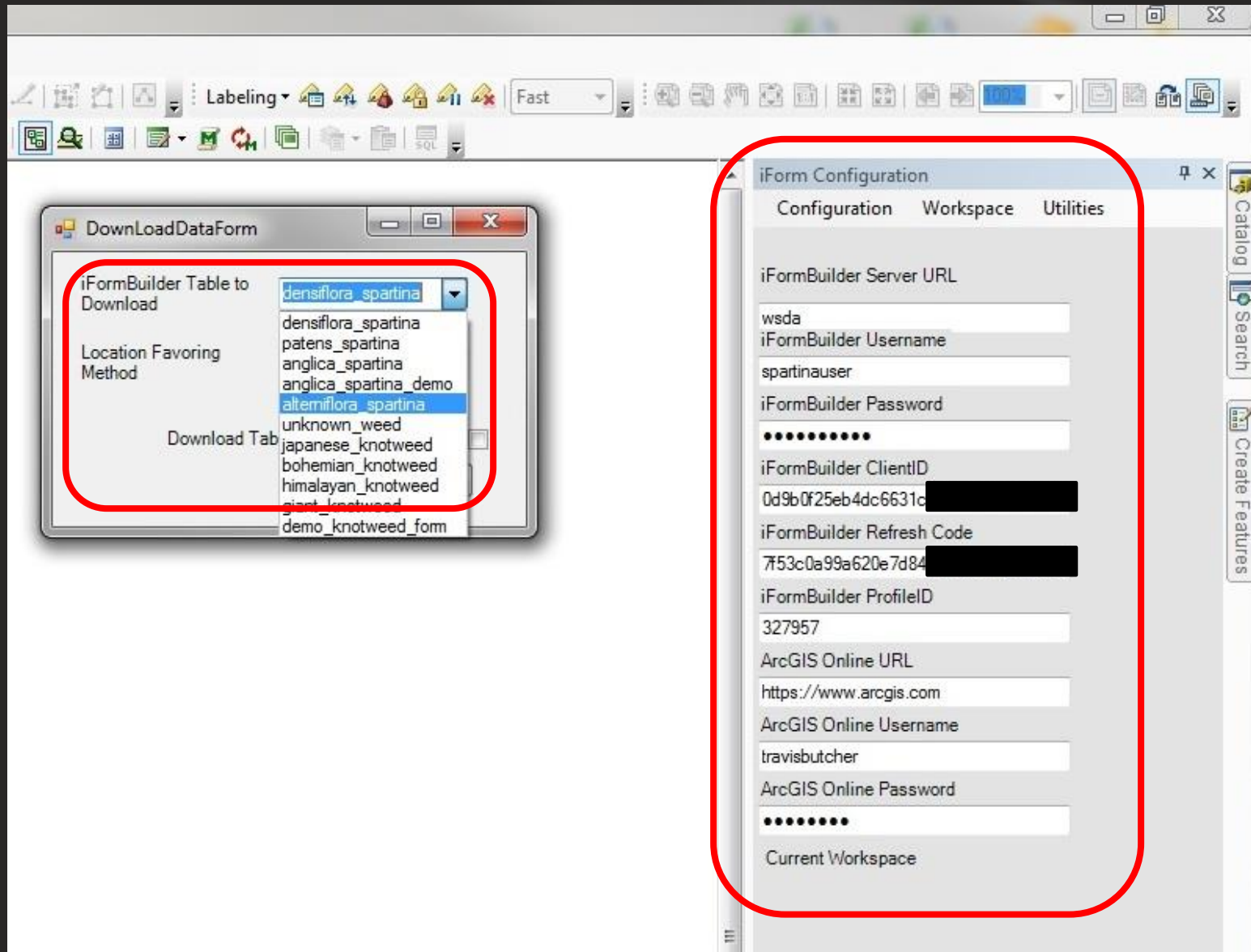


Useful Features & Capabilities:

- Automated Email Alerts
- All forms and data sent from device wirelessly
- Changes to form and drop down lists can be done at anytime from central website
- Training can be accomplished in about 1-2 hrs
- Depending on form input takes between 30-40 seconds




ArcMap Integration:



AGOL Connector Tool:

API Connector



Connected to Esri ArcGIS account: ludo495
[Unlink](#)

✓

Form Linking

[Import from ArcGIS](#) [Publish](#) [Publish With Existing Data](#) [Link](#)

Layer	Name	Connected
Biocontrol Release Form, Island:	biocontrol_release_form_island	
Biocontrol Release Form, Klickitat:	biocontrol_release_form_klickitat	
Biocontrol Release Form, San Juan:	biocontrol_release_form_san_juan	
Biocontrol Release Form, Whitman:	biocontrol_release_form_whitman	
State Weed, Common:	state_weed_common	
State Weed, Common DEMO:	state_weed_common_demo_copy	✓
State Weed, Common Island:	state_weed_common_island	
State Weed, Common Klickitat:	state_weed_common_klickitat	
State Weed, Common, San Juans:	state_weed_common_san_juans	
State Weed, Common Whitman:	state_weed_common_whitman	
State Weed, Scientific:	state_weed_scientific	
WDFW Chemical Treatment DEMO:	wdfw_chemical_treatment_demo	
WDFW Cultural Treatment DEMO:	wdfw_cultural_treatment_demo	
WDFW General Weed Detection DEMO	wdfw_general_weed_detection_demo	
WDFW Mechanical Treatment DEMO:	wdfw_mechanical_treatment_demo	






Find

☐ Name

Search

Reset

(Check the checkbox for exact match)

100   Page 1 of 1    Displaying 1 to 26 of 26 items

ArcGIS Online Linked Data:

HOME ▾ DEMO, State Weed Data Collection, 2014

NEW MAP Landon ▾

Details Add ▾ Edit Basemap

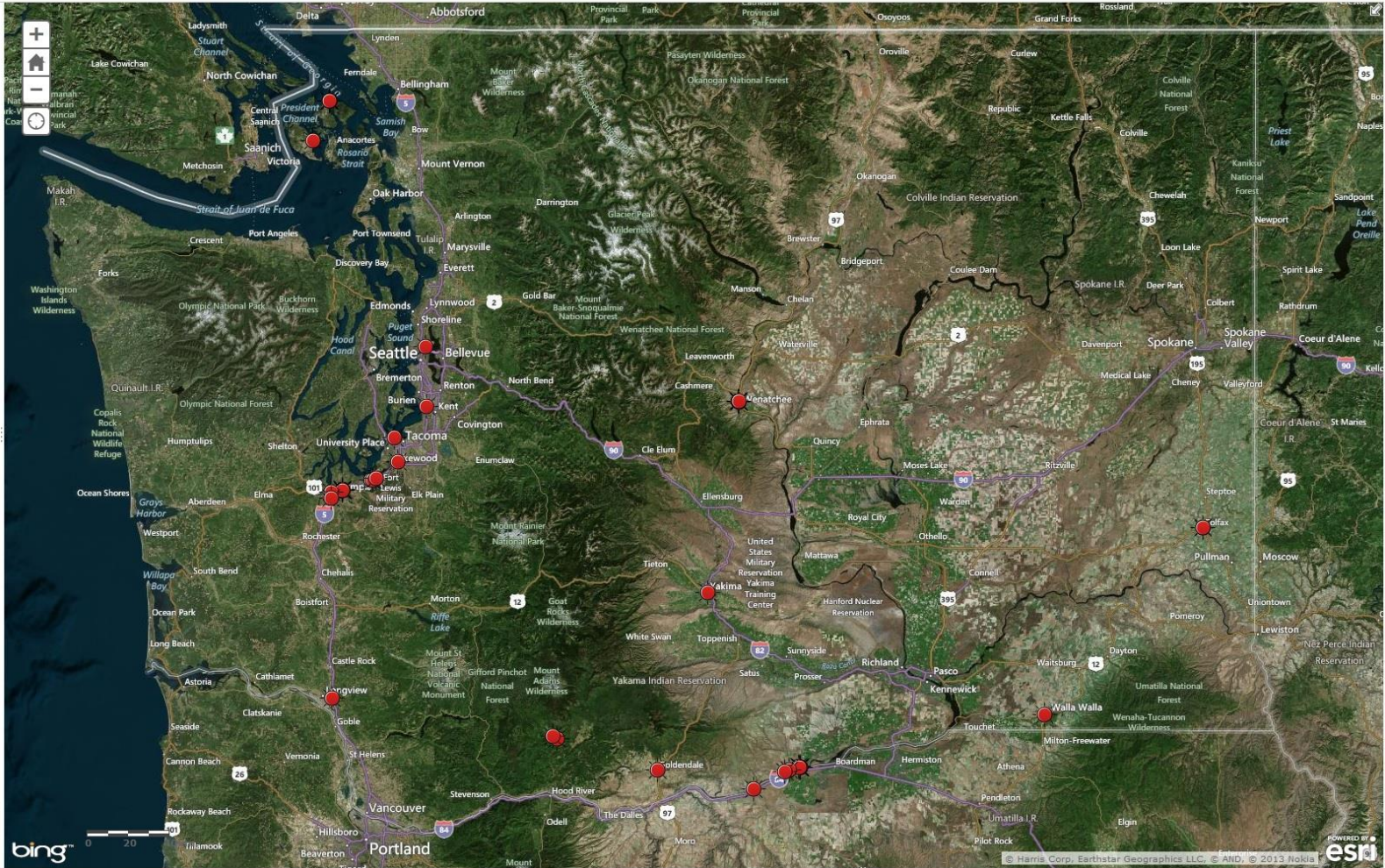
Save ▾ Share Print | Directions Measure Bookmarks Find address or place

Add Features

state_weed_common_demo_co
py



New Feature



Erl.com ArcGIS Marketplace Help Terms of Use
Privacy Contact Erl Report Abuse



Conclusion:

- 1 Year of Field Usage with approximately 80 field personnel, 2013
- 2014, over 100 mobile data collectors including Counties & State Agencies (Grays Harbor, Island, Klickitat, Mason, Pacific, San Juan, Whatcom, Whitman County Weed Boards, WSU-IWCP, WDFW, DNR)
- First year of AGOL integration capabilities and full field usage
- Currently testing android devices to determine functionality
- 40% reduction in cost and data management time from previous system
- Featured at national CIO meeting & ArcGIS for Forestry
- Mobile Data Collectors, Management, Admin, IT and GIS Dept. all benefited from the new system

