The Nature Conservancy

Protecting nature. Preserving life.™

TNC's Weed Information Management System (WIMS):

An Application Tool for Invasive Species Management

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Land Steward
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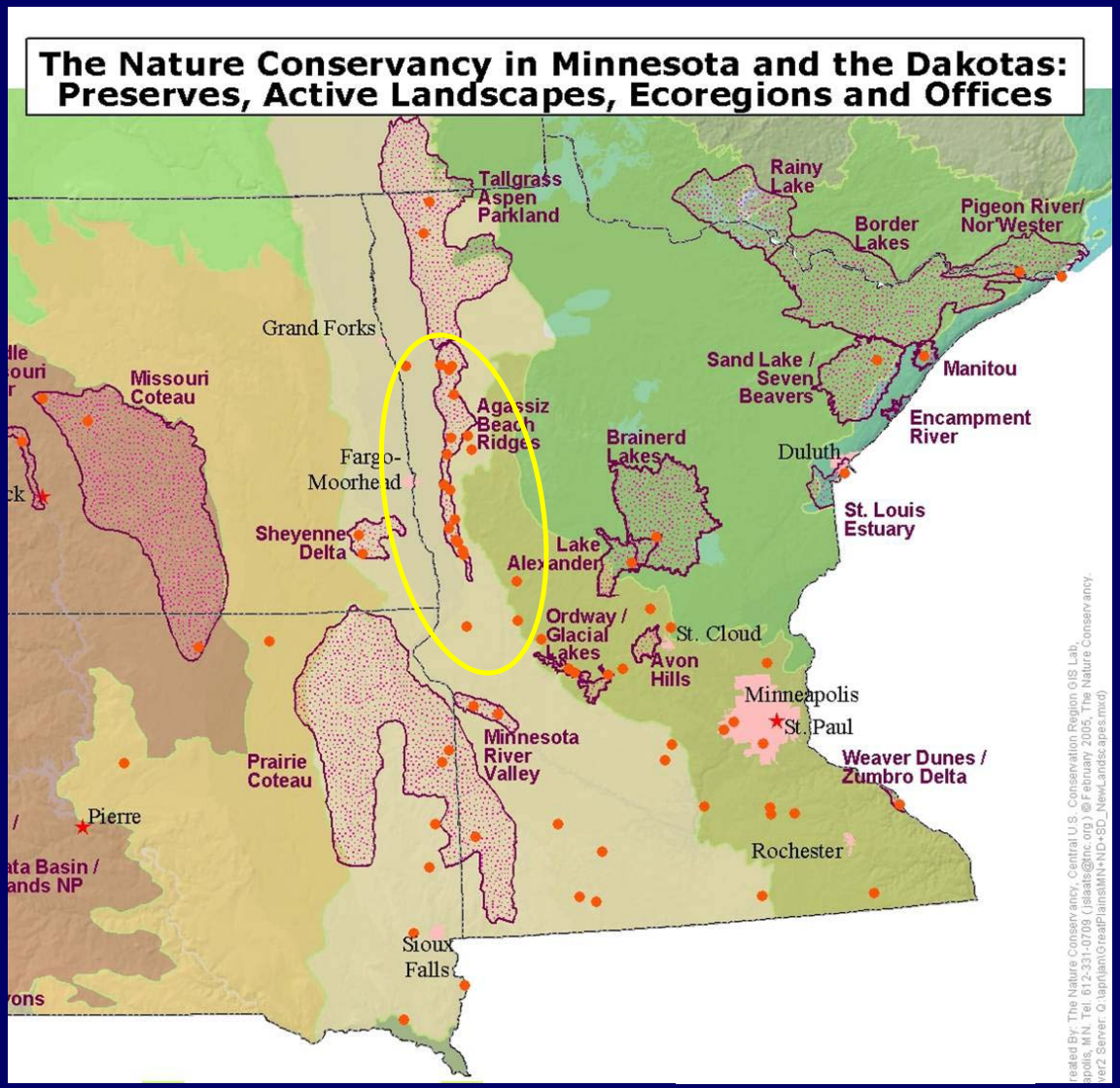
- Introduction
- Why WIMS
- WIMS Basics
- In the Field
- For More Information
- Questions

- Erik Anthonisen
- Land Steward
- The Nature Conservancy
- Minnesota

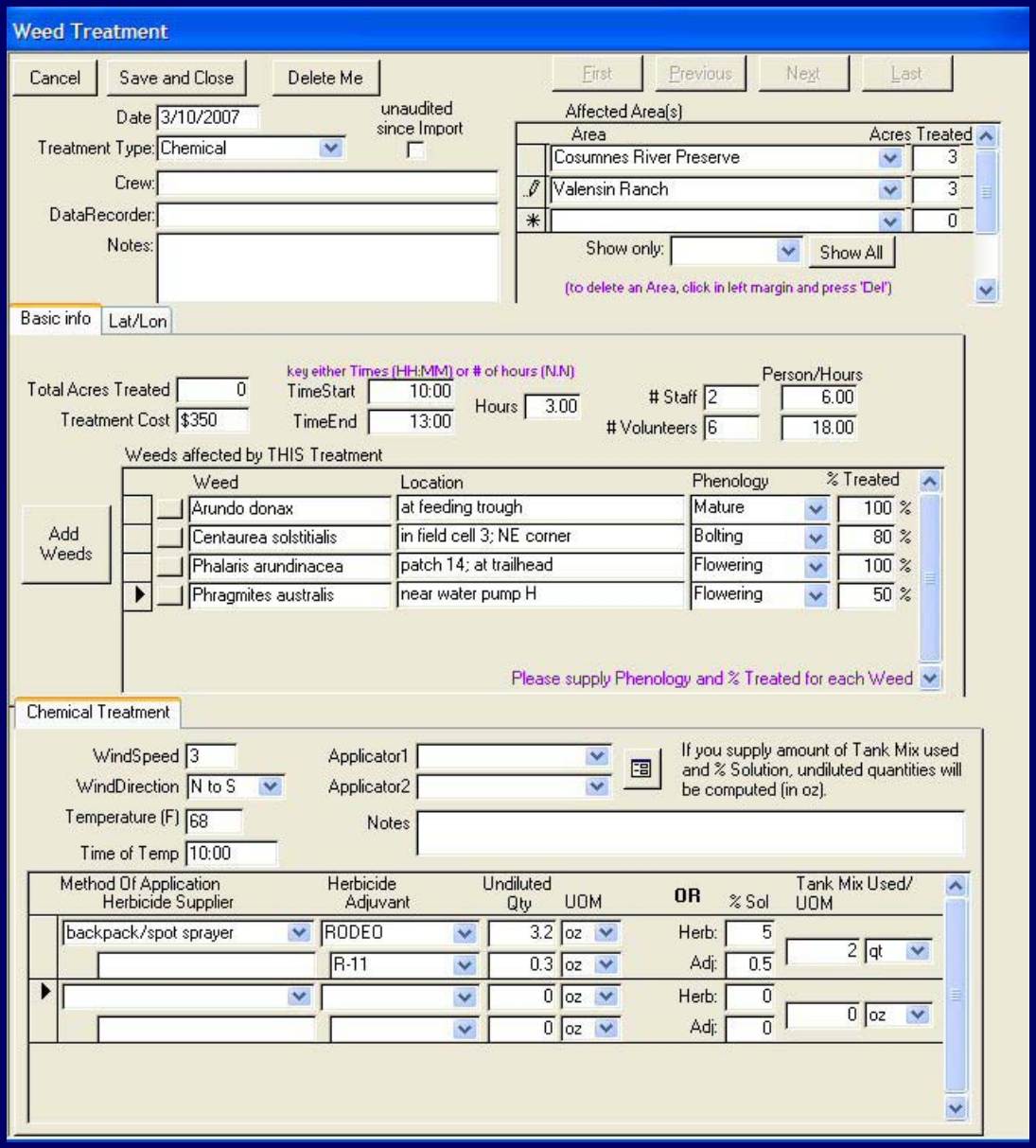
- 20 nature preserves
- 15,000 acres
- Lots of invasive plants



Started with these:

Wow…Look at all the buttons…

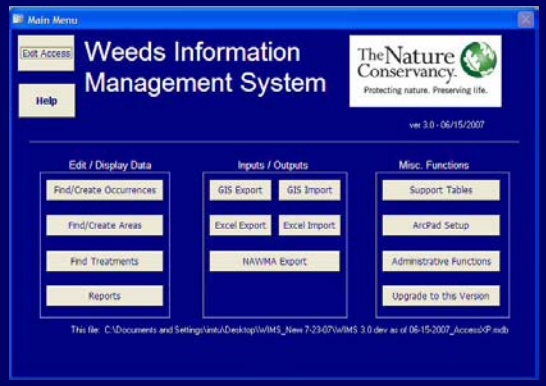
Too many spaces to fill in. This will take forever!



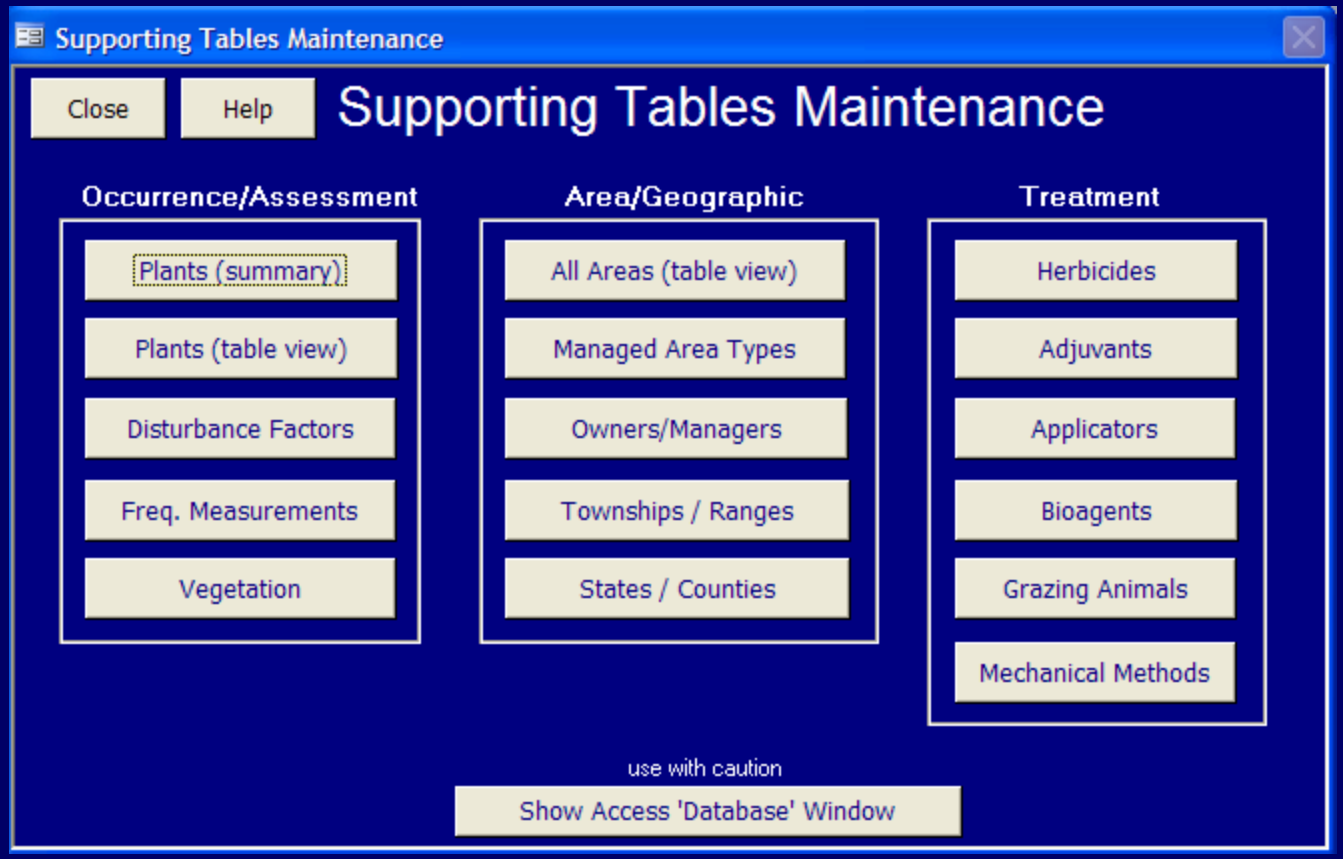
- **Do you struggle to keep track of all of your weeds and weed infestations?**
- **Do you know how much herbicide you used last year…so that you can plan for the upcoming year?**
- **What if you leave your position…will you be able to show your replacement where all of your weeds are, and what you've done with them?**

TNC Weed Information Management System (WIMS)

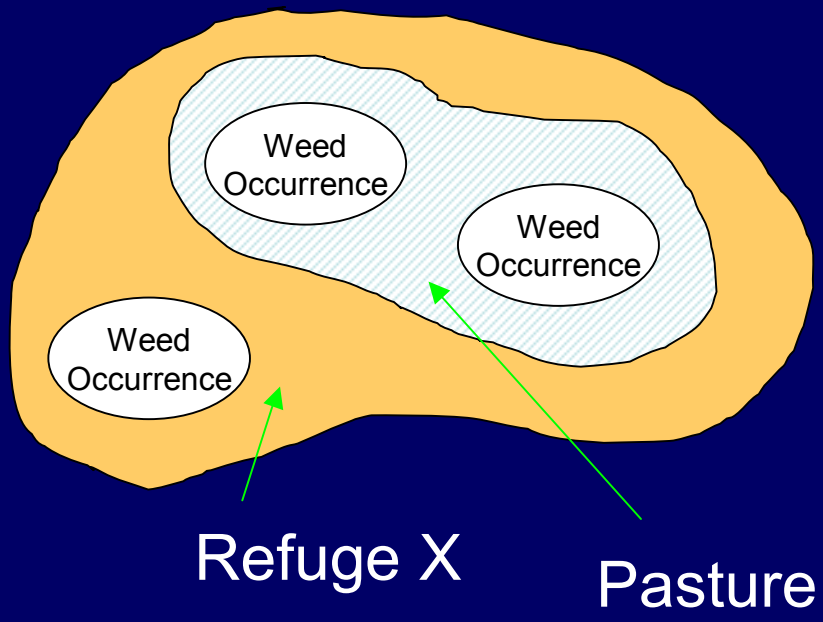
- MS Access relational database for the desktop computer
- Keeps track of weed *occurrences* (locations), *assessments* (monitoring data), and *treatments* (any management action)
- Data can be easily imported & exported (for easy data sharing by multiple users)
  a. Excel spreadsheets
  b. N. Amer Weed Mgmt Assoc (NAWMA) standards
  c. Automatically produce reports & GIS shapefiles

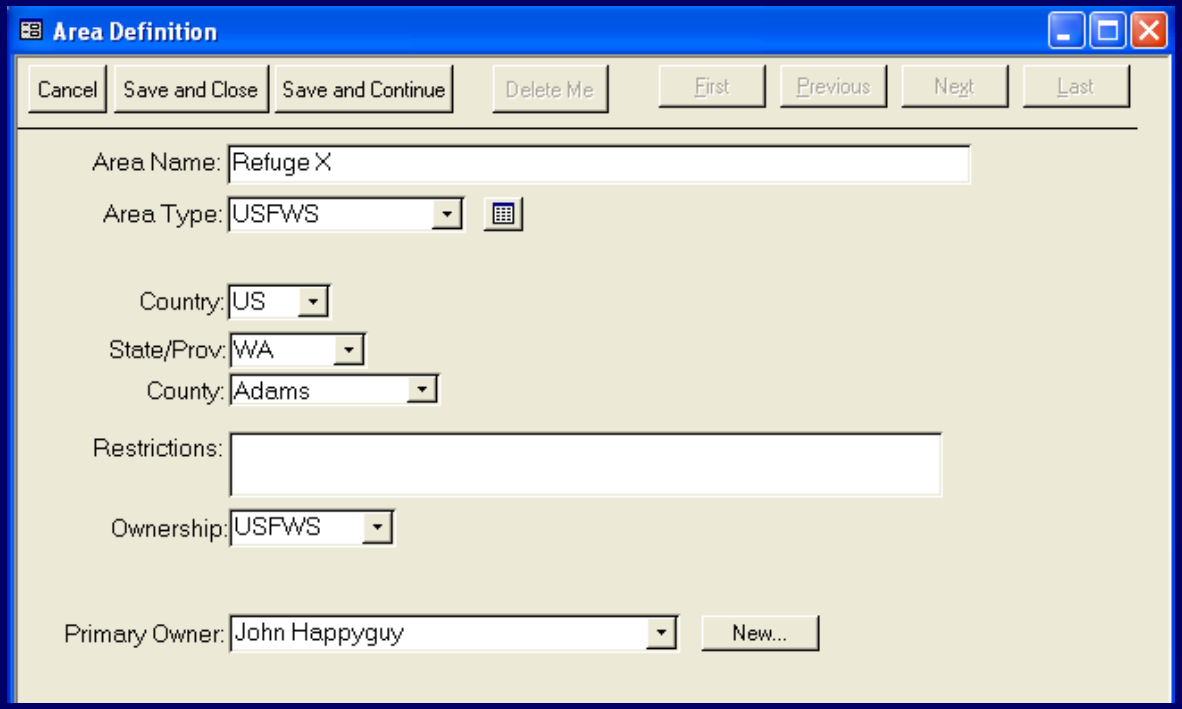


Make WIMS Specific to Your Project:

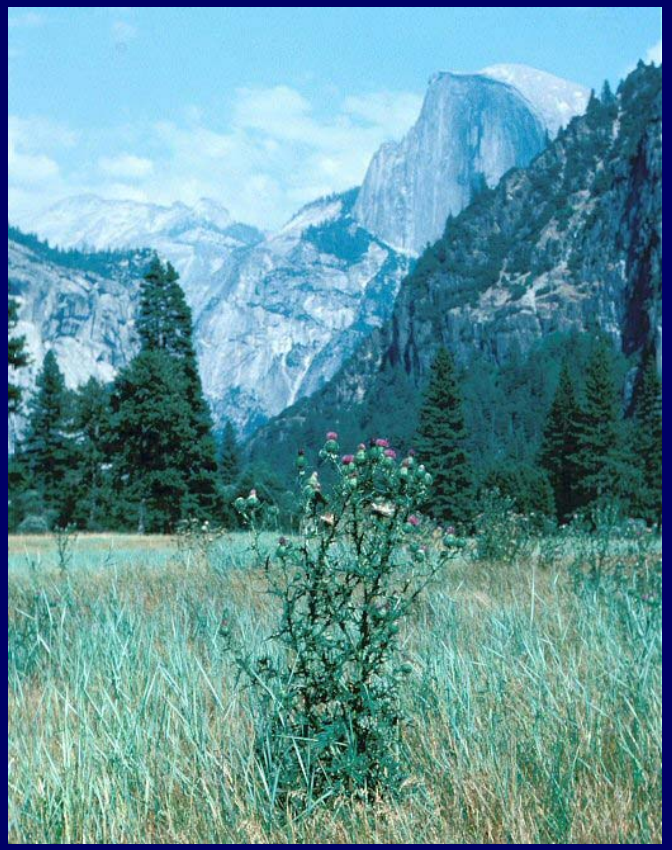


Create/Define Area(s):

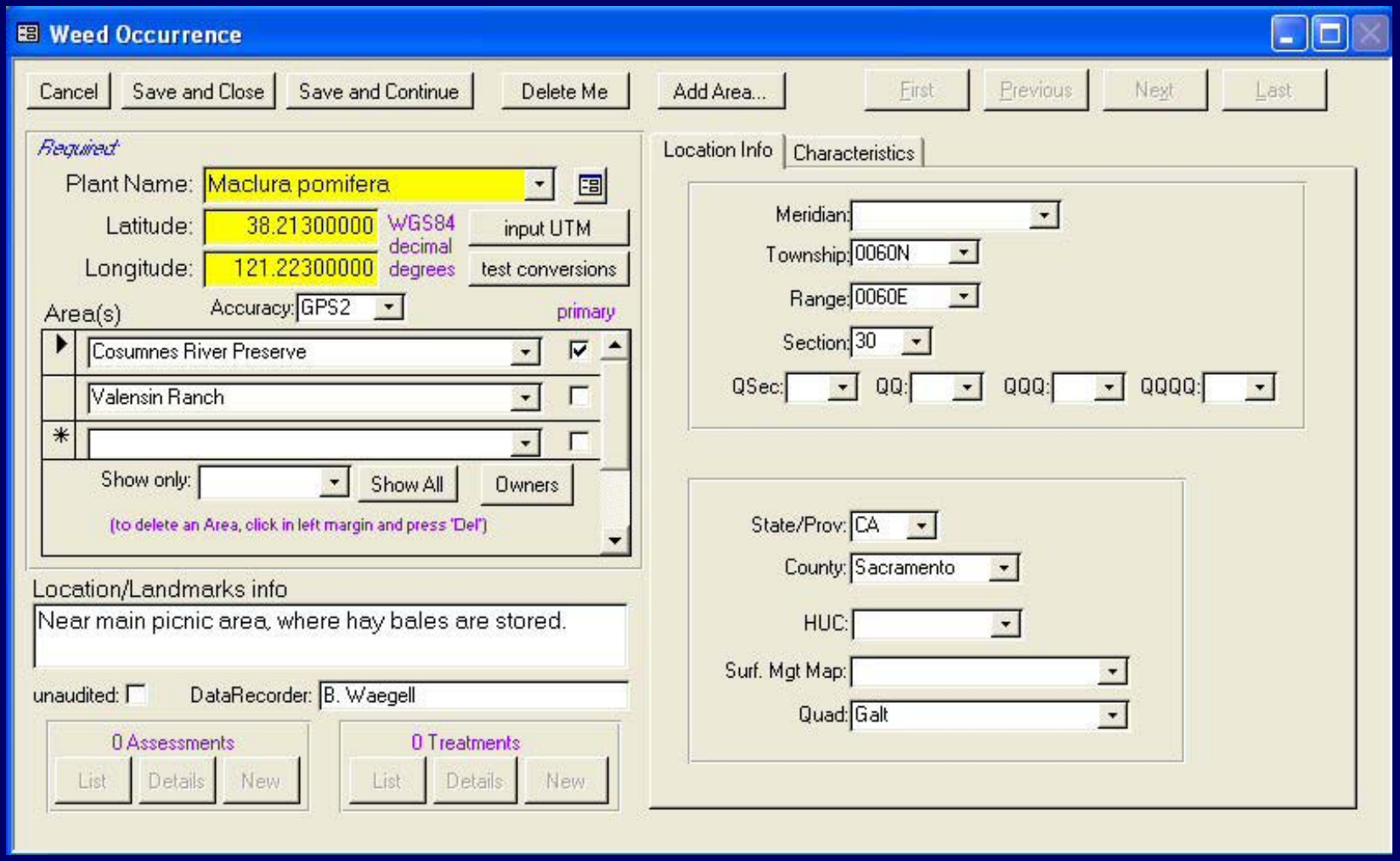




Weed Occurrence **–** The first basic data that must be collected. It is always a "point" regardless of if you are only mapping one weed or a large population of weeds.



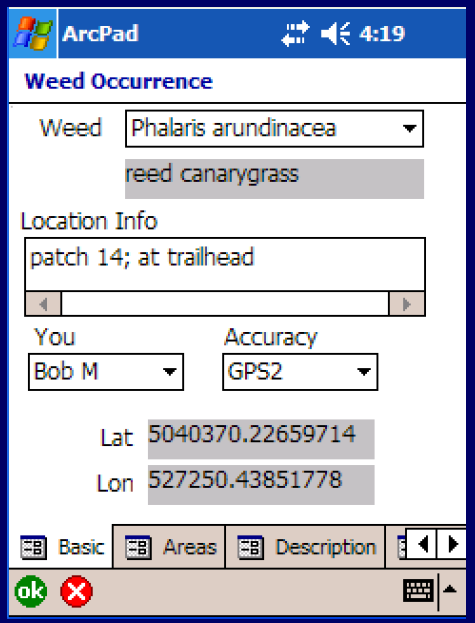
Weed Occurrence – WIMS Desktop Interface

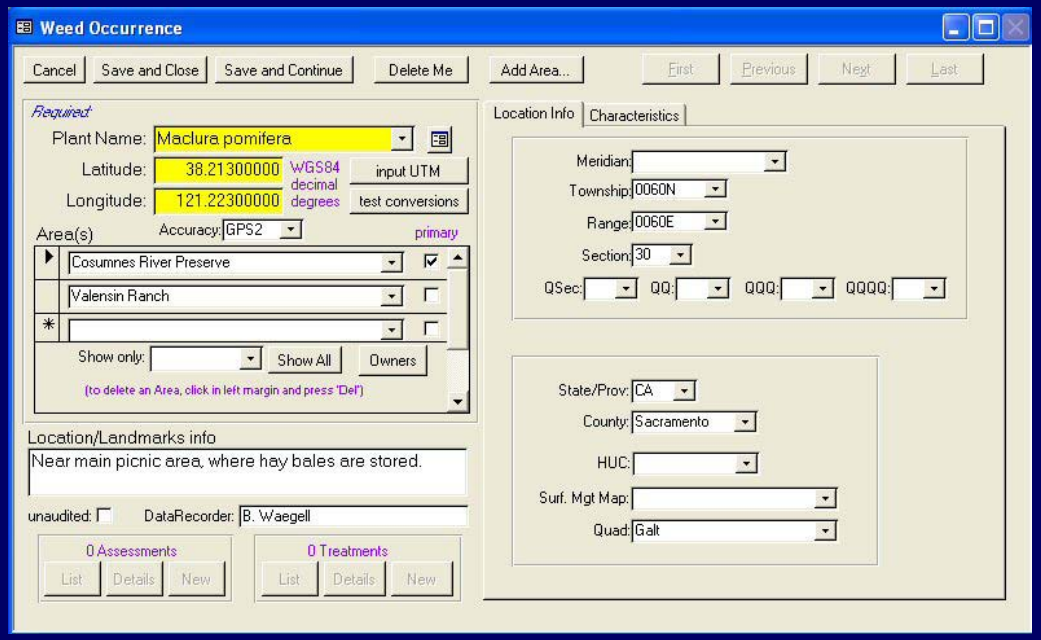


Required Information

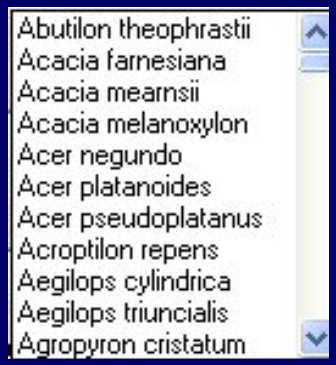
Optional Information

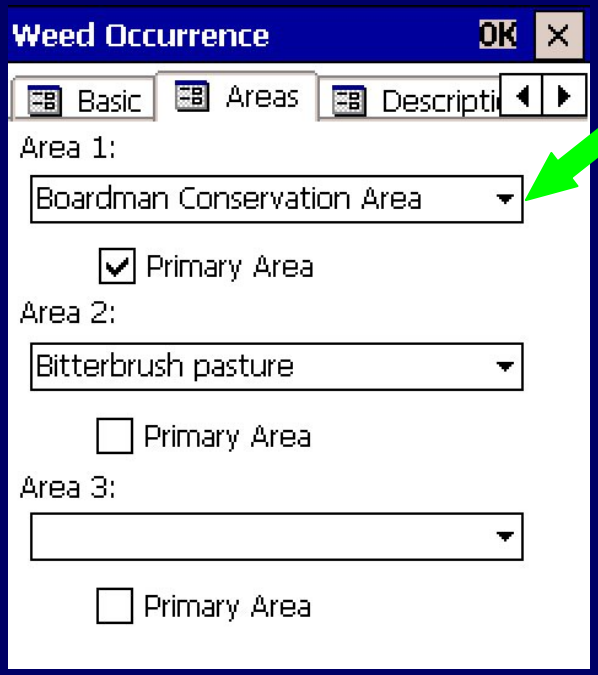
Weed Occurrence





Weed Occurrence – WIMS Handheld Interface





Weed Assessment – The spatial extent (polygon or line) and a measure of abundance of your weed population (monitoring over time).

Weed Treatment - All management interventions can be recorded within WIMS, including: manual & mechanical, fire, chemical, grazing, and biological control.

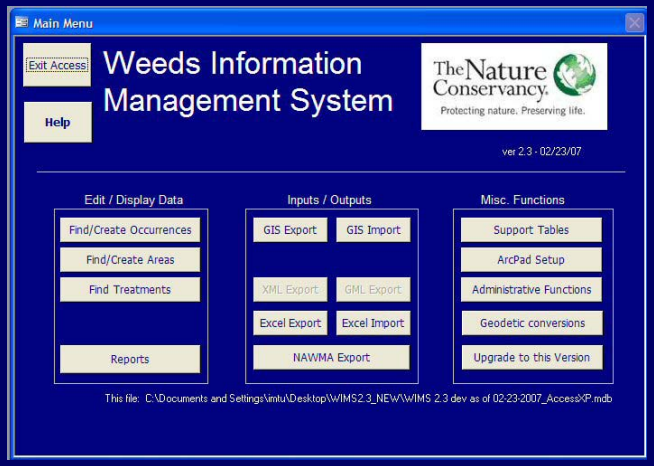
How WIMS is Used

View & Edit data on desktop, then

A. Produce reports

B. Produce GIS maps

C. Export/share data with others!



Outputs from WIMS?

Reports Available in WIMS:

About 20 different reports currently available, including:

- Weed Inventory, by Area
- Weed Inventory, by County
- Assessments/Treatments, by Area
- Infested Area, by County
- Infested Area, by Weed
- Treatment Acres/Hours, by Type
- Assessment/Treatment, Person/Hours
- Acres Treated, by Herbicide
- Pesticide Use by Active Ingredient

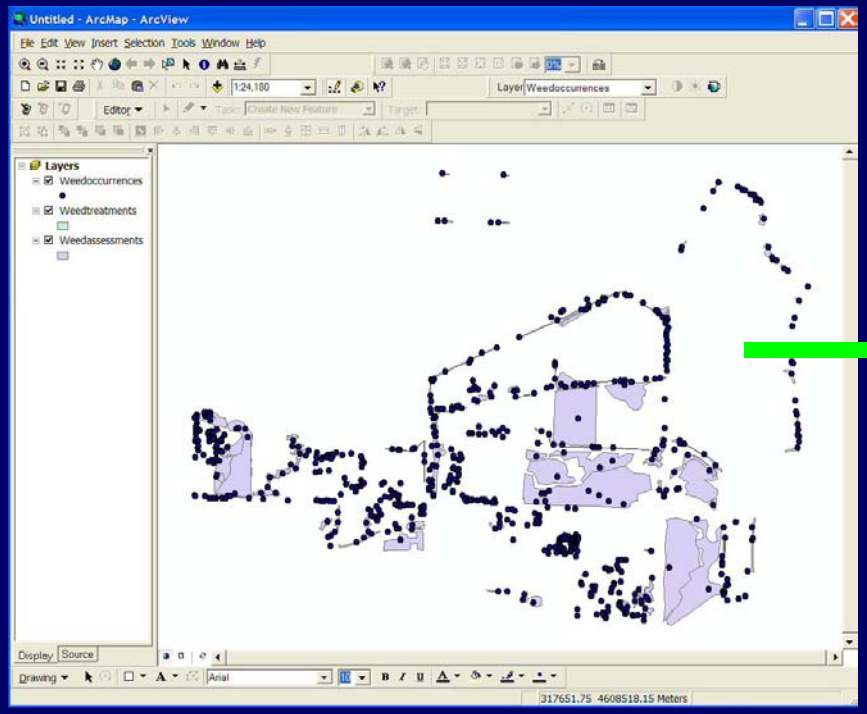
Reports that can be automatically produced:

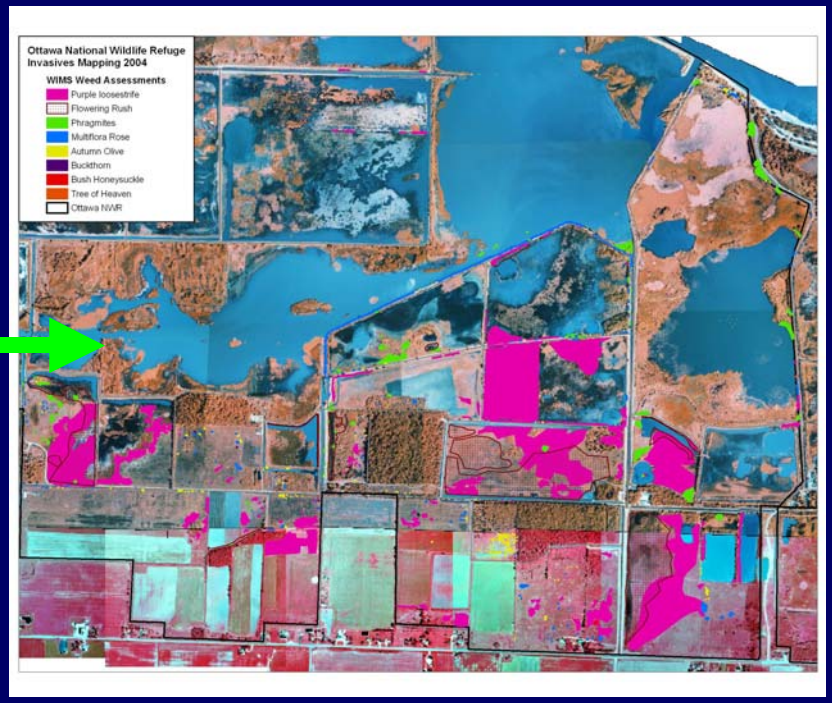
Infested Acres, by Weed

State/County	Weed	# Occurrences	Total Acres	Avg Acres	Min Acres	Max Acres
Cardaria draba						
ID	Canyon	5	25.00	5.00	0.00	12.00
	Totals:	**5**	**25.00**			
OR	Crook	1	0.01	0.01	0.01	0.01
	Totals:	**1**	**0.01**			
Centaureai maculosa						
ID	Fremont	1	25.00	25.00	25.00	25.00
ID	Owyhee	1	4447.80	4447.80	4447.80	4447.80
	Totals:	**2**	**4472.80**			
Cirsium arvense						
ID	Fremont	2	0.11	0.06	0.01	0.10
	Totals:	**2**	**0.11**			
Convolvulus arvensis						
ID	Fremont	1	7.00	7.00	7.00	7.00
	Totals:	**1**	**7.00**			
Dipsacus sylvestris						
OR	Grant	1	0.62	0.62	0.62	0.62

Transfer of information from handhelds

Transferred to desktop and imported into ArcMap





What Do You Need For WIMS?

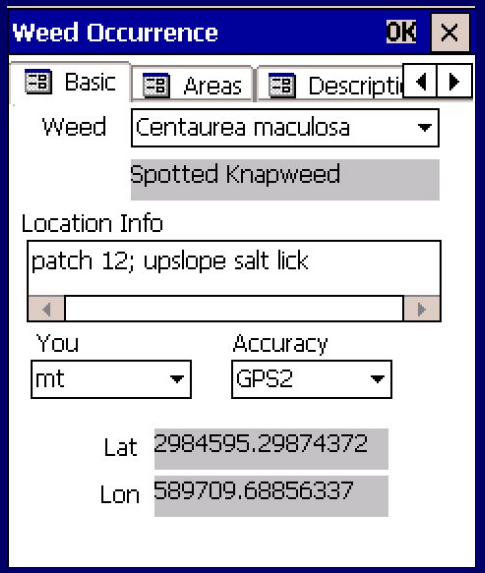
Should have:

- **Desktop/laptop Computer**
- **PDA and GPS unit (Can use paper data sheets)**
- **Memory card**
- **ArcPad**

Nice to have:

- **Carrying case for PDA**
- **GIS Program (ArcMap)**

Mapping Chinese tallow (*Triadica sebiferum*) saplings in Texas



How Do I Use WIMS? Day-to-Day

- Upload data to PDAs
- PDAs go out to field
- Collect Occurrences
- Back in office—Download data
- Create shapefile
- Upload data to PDAs…

What Do I Like About WIMS

- Fairly Easy to Use
- Easily Compiles the Data
- Easily Transfer Info into GIS
- Love Having the Aerial Photo in the Field
- Ability to Use Other Shapefiles with WIMS

What I don't like about WIMS

- Technical Probs—GPS talking with PDA, battery issues, must fill in all necessary boxes or error
- Reports—If want something different, can't do it

WIMS Use at the Project Scale…

Pros:
- Available now!
- Available for free (download the MS Access files)
- Detailed support documents available (installation guide, tutorial guide, user's manual, etc.), and online tutorials are currently in development
- Field-tested and used for several years by land managers across the U.S.
- Has cheap-to-expensive equipment options for users
- Can output data in a variety of formats, so can easily share data with others

Cons:
- Steep learning curve for new users – Access database, GPS, GIS interface, etc.; may be too complex for occasional users or sporadic volunteers
- Limited user support outside of TNC staff
- A technology-savvy data manager is recommended to oversee data collection and troubleshoot technical issues
- Technology is always changing too fast! – MS Windows Mobile, ArcPad, Excel output, new handheld units, etc etc.

Parting Words:

Takes some time to get used to, have patience.

WIMS can definitely help streamline data collection in field

Can help make better-informed management decisions, benefiting your conservation goals.

Additional Information:

Main WIMS Page:
http://tncweeds.ucdavis.edu/wims.html

Main Troubleshooting Page:
http://tncweeds.ucdavis.edu/products/wims/troubleshooting.html

WIMS Message Board:
http://rachel.des.ucdavis.edu/wims/

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