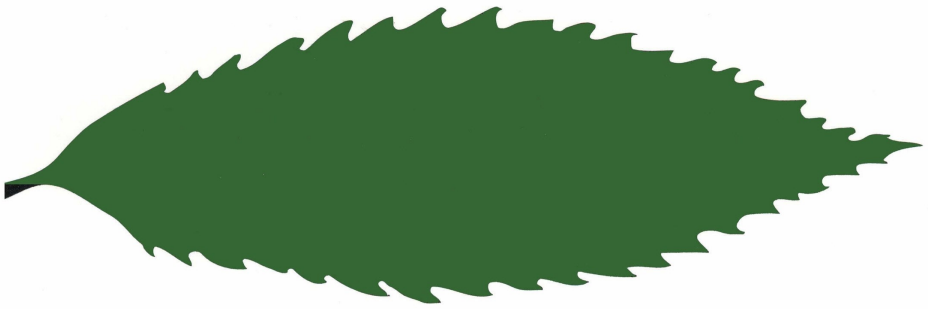
TACF *dentata*Base

User Guide, V1.1



Websites

Testing/Staging Server: http://dentatabase-staging.herokuapp.com

Production Server: http://acf.herokuapp.com

Introduction

Welcome to TACF's *dentata*Base! This on-line data management tool has been developed for use by TACF staff, members, partners, and cooperators to serve as a repository of data related to American chestnut breeding, planting and restoration. The *dentata*Base is a multi-user, on-line database accessible to anybody with an internet connection and a user account. This web-based database allows anyone participating in our science program to input and evaluate data from their office or home computer. Our ultimate goal is to create a database that can handle the large amount of data associated with all aspects of our long-term and large-scale species restoration project.

The *dentata*Base is available for use by member cooperators at no cost and designed with a tiered access model, allowing different users to have appropriate data access customized for them and easing the sharing of data across a universal platform. The database structure is hierarchical, following to some degree the organization of TACF itself. This organizational structure should make sense as you work through the system, but if not please use this User Guide to help you navigate.

Because the *dentata*Base is currently only about 25% complete it is useable but awkward in places. Once you get the hang of it the work flow is fairly straight-forward, but we realize there are a lot of ways to improve this tool. For now, we hope this User Guide will help when you are unsure of how to do something, and of course, contact your Regional Science Coordinator with any questions. A glossary of terms is available in Appendix B and also as a stand-alone document. Any terms defined or explained in the glossary are **bolded** throughout this guide. In cases where there are a set of acceptable terms (i.e. where a drop-down selection list is planned for future implementation), those terms are ***bolded AND italicized***. These acceptable terms are also listed in the glossary.

We are currently working to load all existing Meadowview and State Chapter data into the database and plan to use this system as our main tool for data management from here on out. We hope you will help in that effort and look forward to using this tool to support our work.

- The *dentata*Base Team

Please Note:

The database currently has very limited error correction capabilities. We need to be careful when entering data to make sure that it is as correct as possible. For this reason, all users will need to demonstrate some manner of proficiency on the Testing/Staging Server before being given access to the Production Server.

In addition, the security model is not yet sophisticated enough to protect sensitive location or contact information and therefore users will only be given access to the entities they work directly with. We hope to be able to resolve these issues soon and open-up wider access on the Production Server, but for now the best solution is to restrict users to data with which they have a need to work.

That said, we are very excited about this new system for the storage and entry of data related to our science program and hope you enjoy working with it!

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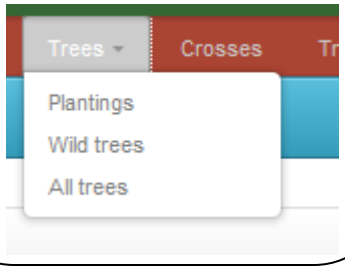
1. Basic Navigation Features

This green and red navigation header appears at the top of all pages in the *dentata*Base.

Edit Profile and Sign Out are available via drop-down list by clicking the caret next to the signed-in **user** name.

All major **entity** headings in the red navigation bar are links to the overview page for each **entity**.

A caret in the navigation bar will open a drop-down menu of options:



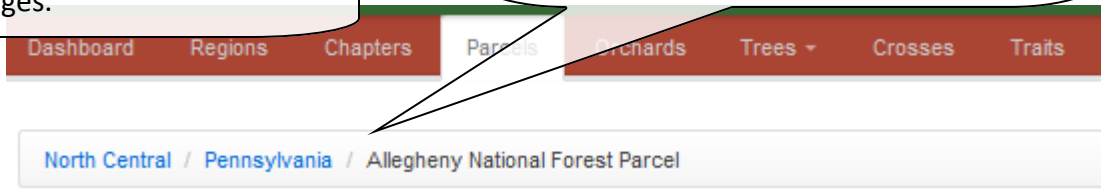
A **sort caret** in a table heading allows you to sort in alphabetical or numerical order, either descending or ascending.

Parcel	Chapter	Region	Latitude	Longitude	GPA/MOU Status
Acker-Funk Farm (Peak Cove)	Carolinas	Southern	36.407592	-81.66947	on file
Air Products	Pennsylvania	North Central	40.837448	-76.024173	None
Allegheny National Forest	Pennsylvania	North Central	41.636404	-79.37462	On file
Allshouse	Pennsylvania	North Central			None
Ammons (Mountain Heritage)	Carolinas	Southern	35.855441	-82.476348	on file

Any blue text found throughout the *dentata*-Base is a **hyperlink** that will open the named page, allowing for ease of navigation.

These "**breadcrumbs**" are displayed as you drill down into different entities and aid in navigation. The items in blue are **hyperlinks**, to the Pennsylvania Chapter and North Central Region, in this example.

This "Return to Table of Contents" **hyperlink** is available on all pages.



Return to Table of Contents

2. CSV Files

What are CSV files? **CSV** stands for "comma separated value" and is a file format that stores tabular data in plain-text form. So this isn't a "pretty" file format but is a good tool for getting data into and out of the *dentata*Base. This file type shows up in several places throughout the system. There are several places where the *dentata*Base will create a **CSV** for you, you will enter your data and then upload the file. Make sure when saving files to upload you save them in the .csv format or the database will not be able to process them. Below are a few more instructions but if you have any trouble don't hesitate to contact your Regional Science Coordinator. Specific **CSV**s will be covered in appropriate sections of this User Guide.

IMPORTANT: All columns to the LEFT of the "II" column (column J) contain data generated by the database and should **NOT** be changed. If any edits are needed **DO NOT** make them in these columns or the file will not upload back into the system.

All columns to the **RIGHT** of the "II" column (column J) can be edited and used to upload data into the system.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Plot name	Space ID (internal	Space label	Row	Position	Tree ID (internal)	Tree name	Cross name	Cross year	||	Comments	Height (Feet)	Tree alive/dead
2	Lake St. Catherine	150277	R1T1	1	1	16853	SC13-R1T1	VT-RH049 x BG39	2012	||			dead
3	Lake St. Catherine	150278	R1T2	1	2	16985	SC13-R1T2	NH-EN153 x SC921	2012	||			dead
4	Lake St. Catherine	150279	R1T3	1	3	17163	SC13-R1T3	VT-RH025 x GA63	2012	||			alive
5	Lake St. Catherine	150280	R1T4	1	4	16852	SC13-R1T4	VT-RH049 x BG39	2012	||			dead
6	Lake St. Catherine	150281	R1T5	1	5	16867	SC13-R1T5	VT-CC006 x open	2011	||			alive
7	Lake St. Catherine	150282	R1T6	1	6	16851	SC13-R1T6	VT-RH049 x BG39	2012	||			dead
8	Lake St. Catherine	150283	R1T7	1	7	17201	SC13-R1T7	Wilkinson x op12	2012	||			alive
9	Lake St. Catherine	150284	R1T8	1	8	17162	SC13-R1T8	VT-RH025 x GA63	2012	||			alive
10	Lake St. Catherine	150285	R1T9	1	9	17023	SC13-R1T9	VT-VV04T1 x VT-BR019	2012	||			alive
11	Lake St. Catherine	150286	R1T10	1	10	16850	SC13-R1T10	VT-RH049 x BG39	2012	||			dead
12	Lake St. Catherine	150287	R1T11	1	11	16984	SC13-R1T11	NH-EN153 x SC921	2012	||			alive
13	Lake St. Catherine	150288	R1T12	1	12	17161	SC13-R1T12	VT-RH025 x GA63	2012	||			dead
14	Lake St. Catherine	150289	R1T13	1	13	16849	SC13-R1T13	VT-RH049 x BG39	2012	||			dead
15	Lake St. Catherine	150290	R1T14	1	14	16866	SC13-R1T14	VT-CC006 x open	2011	||			alive
16	Lake St. Catherine	150291	R1T15	1	15	17160	SC13-R1T15	VT-RH025 x GA63	2012	||			alive
17	Lake St. Catherine	150292	R1T16	1	16	16983	SC13-R1T16	NH-EN153 x SC921	2012	||			alive
18	Lake St. Catherine	150293	R1T17	1	17	16848	SC13-R1T17	VT-RH049 x BG39	2012	||			dead
19	Lake St. Catherine	150294	R1T18	1	18	17159	SC13-R1T18	VT-RH025 x GA63	2012	||			alive
20	Lake St. Catherine	150295	R1T19	1	19	16847	SC13-R1T19	VT-RH049 x BG39	2011	||			dead
21	Lake St. Catherine	150296	R1T20	1	20	16982	SC13-R1T20	NH-EN153 x SC921	2012	||			alive

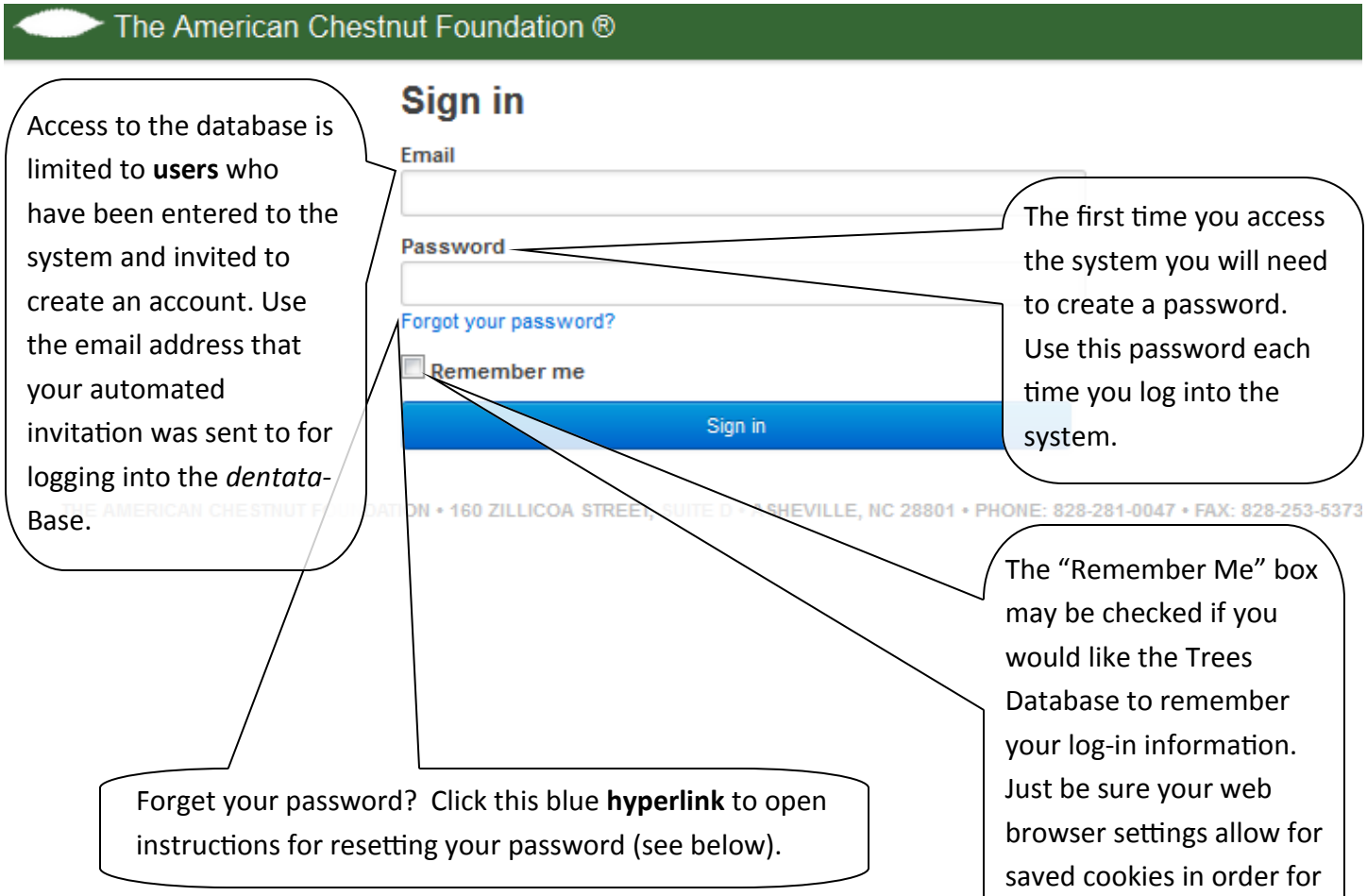
The "II" column is used in all **CSV** files as a visual reminder to make edits and enter data to the **RIGHT** of that column only.

3. Sign-In

Testing Server: http://tacf.hoteldelta.net

Production Server: http://acf.herokuapp.com

See the Glossary for more discussion of the proper use of the **Testing** and **Production Servers**.

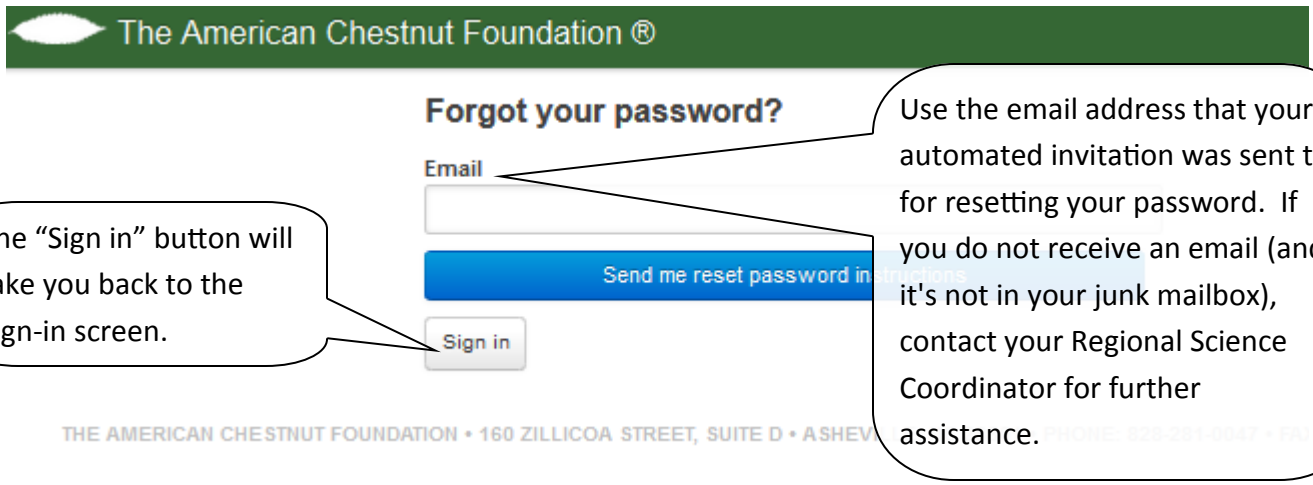


Access to the database is limited to **users** who have been entered to the system and invited to create an account. Use the email address that your automated invitation was sent to for logging into the *dentata*-Base.

The first time you access the system you will need to create a password. Use this password each time you log into the system.

Forget your password? Click this blue **hyperlink** to open instructions for resetting your password (see below).

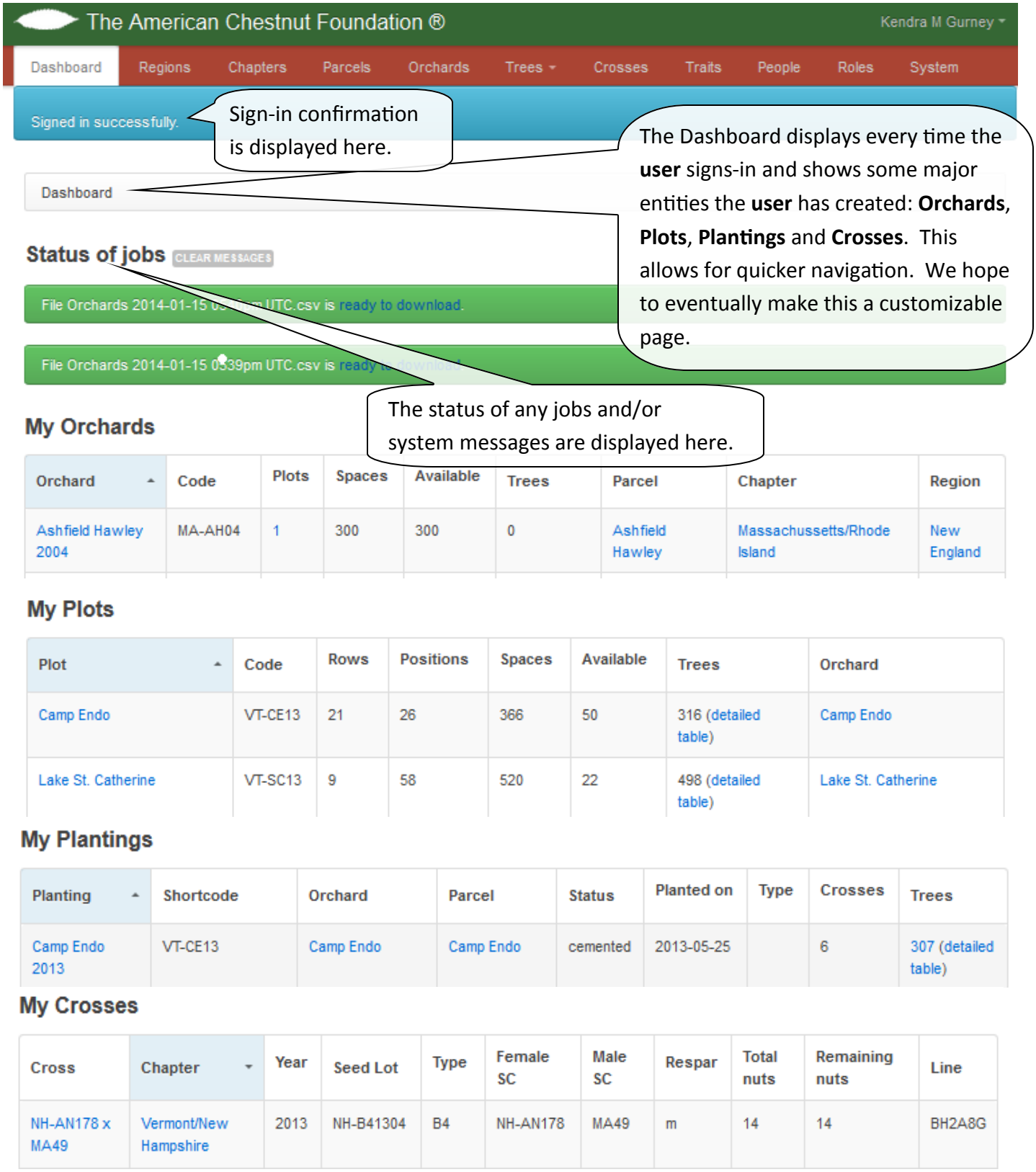
The "Remember Me" box may be checked if you would like the Trees Database to remember your log-in information. Just be sure your web browser settings allow for saved cookies in order for this to work properly.



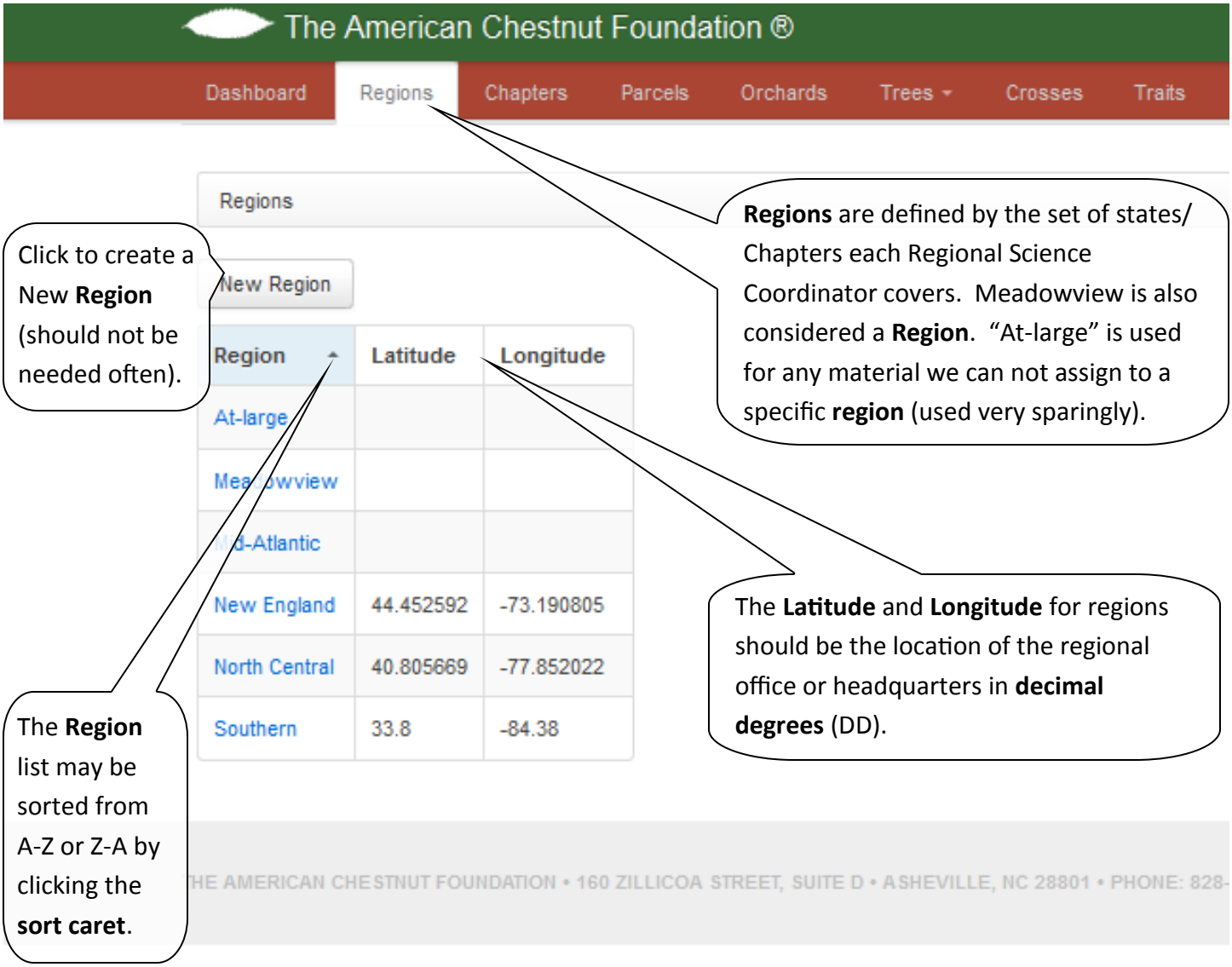
The "Sign in" button will take you back to the Sign-in screen.

Use the email address that your automated invitation was sent to for resetting your password. If you do not receive an email (and it's not in your junk mailbox), contact your Regional Science Coordinator for further assistance.

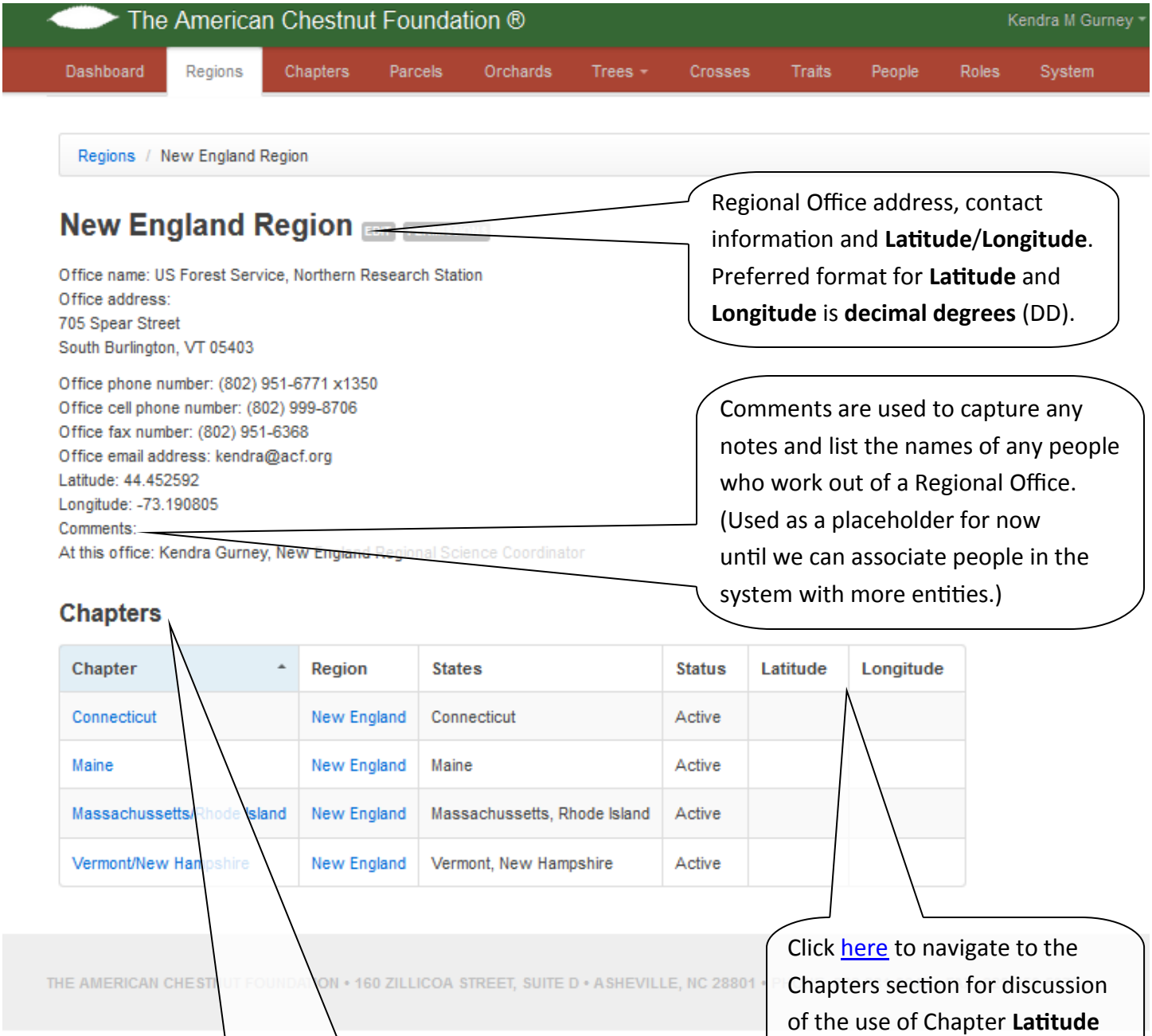
4. Dashboard


The American Chestnut Foundation ®
Kendra M Gurney
Dashboard
Regions
Chapters
Parcels
Orchards
Trees
Crosses
Traits
People
Roles
System
Signed in successfully.
Sign-in confirmation is displayed here.
The Dashboard displays every time the user signs-in and shows some major entities the user has created: Orchards, Plots, Plantings and Crosses. This allows for quicker navigation. We hope to eventually make this a customizable page.
Dashboard
Status of jobs
CLEAR MESSAGES
File Orchards 2014-01-15 0339pm UTC.csv is ready to download.
File Orchards 2014-01-15 0339pm UTC.csv is ready to download.
The status of any jobs and/or system messages are displayed here.
My Orchards
Orchard
Code
Plots
Spaces
Available
Trees
Parcel
Chapter
Region
Ashfield Hawley 2004
MA-AH04
1
300
300
0
Ashfield Hawley
Massachussetts/Rhode Island
New England
My Plots
Plot
Code
Rows
Positions
Spaces
Available
Trees
Orchard
Camp Endo
VT-CE13
21
26
366
50
316 (detailed table)
Camp Endo
Lake St. Catherine
VT-SC13
9
58
520
22
498 (detailed table)
Lake St. Catherine
My Plantings
Planting
Shortcode
Orchard
Parcel
Status
Planted on
Type
Crosses
Trees
Camp Endo 2013
VT-CE13
Camp Endo
Camp Endo
cemented
2013-05-25
6
307 (detailed table)
My Crosses
Cross
Chapter
Year
Seed Lot
Type
Female SC
Male SC
Respar
Total nuts
Remaining nuts
Line
NH-AN178 x MA49
Vermont/New Hampshire
2013
NH-B41304
B4
NH-AN178
MA49
m
14
14
BH2A8G

5. Regions - Overview



5.1 Regions - Region Detail



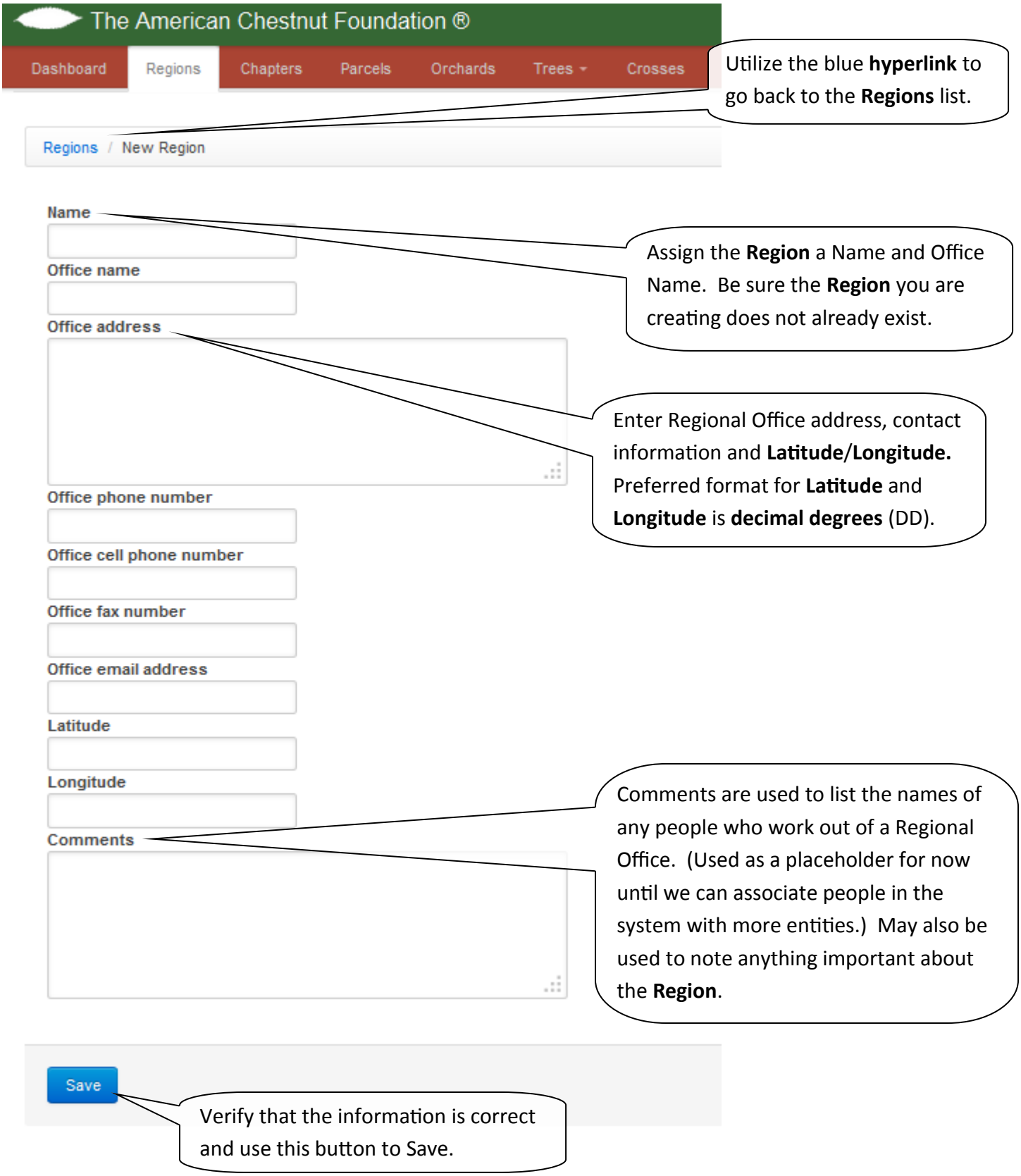
Regional Office address, contact information and **Latitude/Longitude**. Preferred format for **Latitude** and **Longitude** is **decimal degrees** (DD).

Comments are used to capture any notes and list the names of any people who work out of a Regional Office. (Used as a placeholder for now until we can associate people in the system with more entities.)

Click here to navigate to the Chapters section for discussion of the use of Chapter **Latitude** and **Longitude**.

Listing of all Chapters associated with the **Region**. Text in blue are **hyperlinks** to detail pages for those Chapters or the **Region**. Again, the **sort caret** in the table header can be used to sort the list from A-Z or Z-A.

5.2 Regions - Add New or Edit Region



6. Chapters - Overview

Chapters correspond to those currently recognized by TACF and may involve more than one state. Meadowview and "At Large" are also listed as chapters to capture data occurring at the Price Research Farm in Meadowview, VA and data that does not fall under either a chapter or Meadowview.

Click to create a New Chapter (should not be needed often).

This is the **region** that the relative chapter belongs to. Click here to navigate to the **Regions** section of this manual for more information.

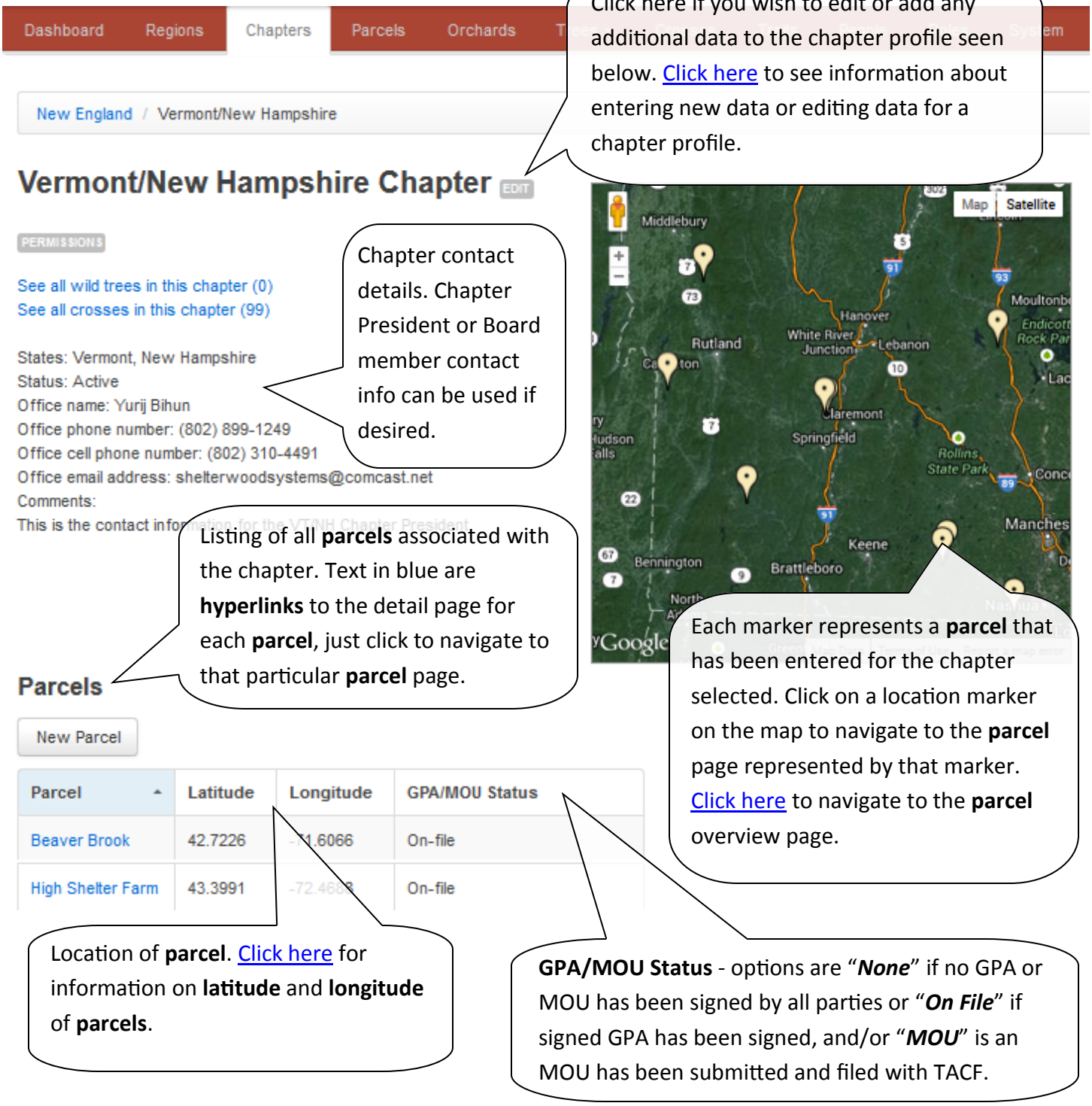
This is a list of the state or states that belong to the corresponding chapter listed on the left.

Latitude and **Longitude** for chapters should be the mailing address for the chapter.

All chapters should be found here. If you are not sure which chapter your data belong to or need to add a chapter and do not have the appropriate site **permissions**, contact your Regional Science Coordinator for assistance.

"Status" refers to **Chapter Status** or the activity level of the chapter. Four choices available are: ***Active, Inactive, Provisional, and Contact***.

6.1 Chapters - Chapter Detail



Click here if you wish to edit or add any additional data to the chapter profile seen below. Click here to see information about entering new data or editing data for a chapter profile.

Chapter contact details. Chapter President or Board member contact info can be used if desired.

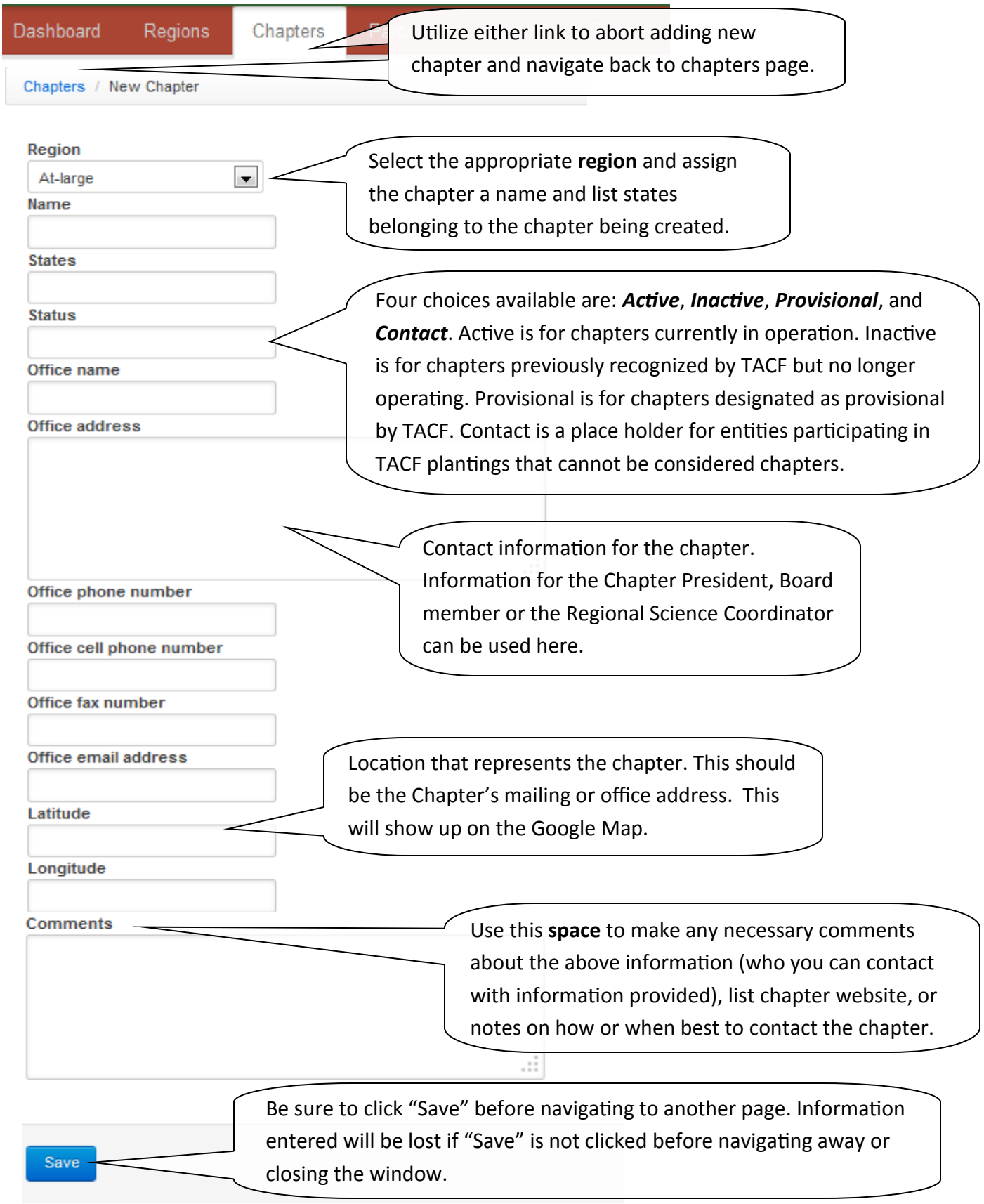
Listing of all **parcels** associated with the chapter. Text in blue are **hyperlinks** to the detail page for each **parcel**, just click to navigate to that particular **parcel** page.

Each marker represents a **parcel** that has been entered for the chapter selected. Click on a location marker on the map to navigate to the **parcel** page represented by that marker. Click here to navigate to the **parcel** overview page.

Location of **parcel**. Click here for information on **latitude** and **longitude** of **parcels**.

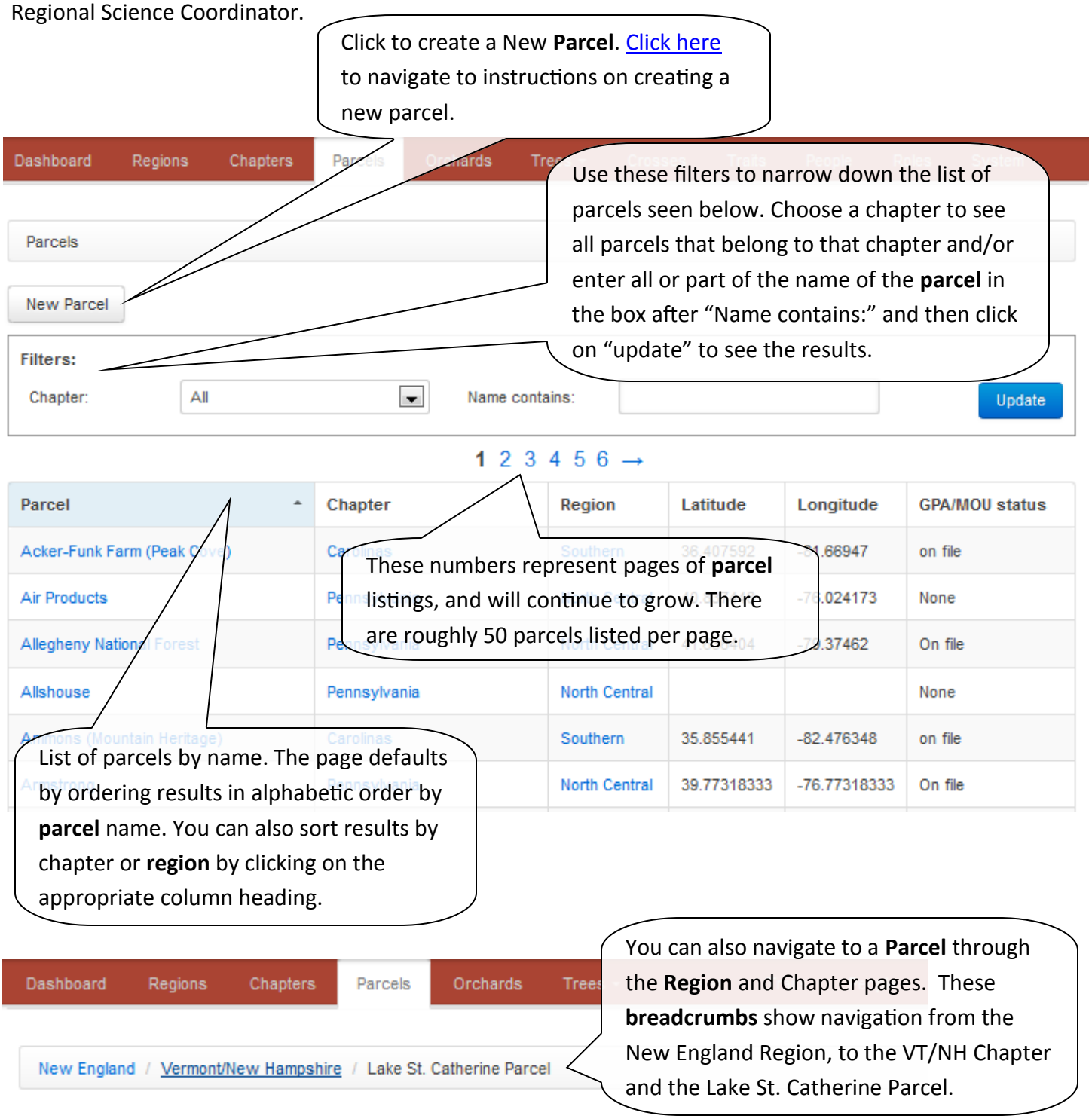
GPA/MOU Status - options are "***None***" if no GPA or MOU has been signed by all parties or "***On File***" if signed GPA has been signed, and/or "***MOU***" is an MOU has been submitted and filed with TACF.

6.2 Chapters - Add New or Edit Chapter

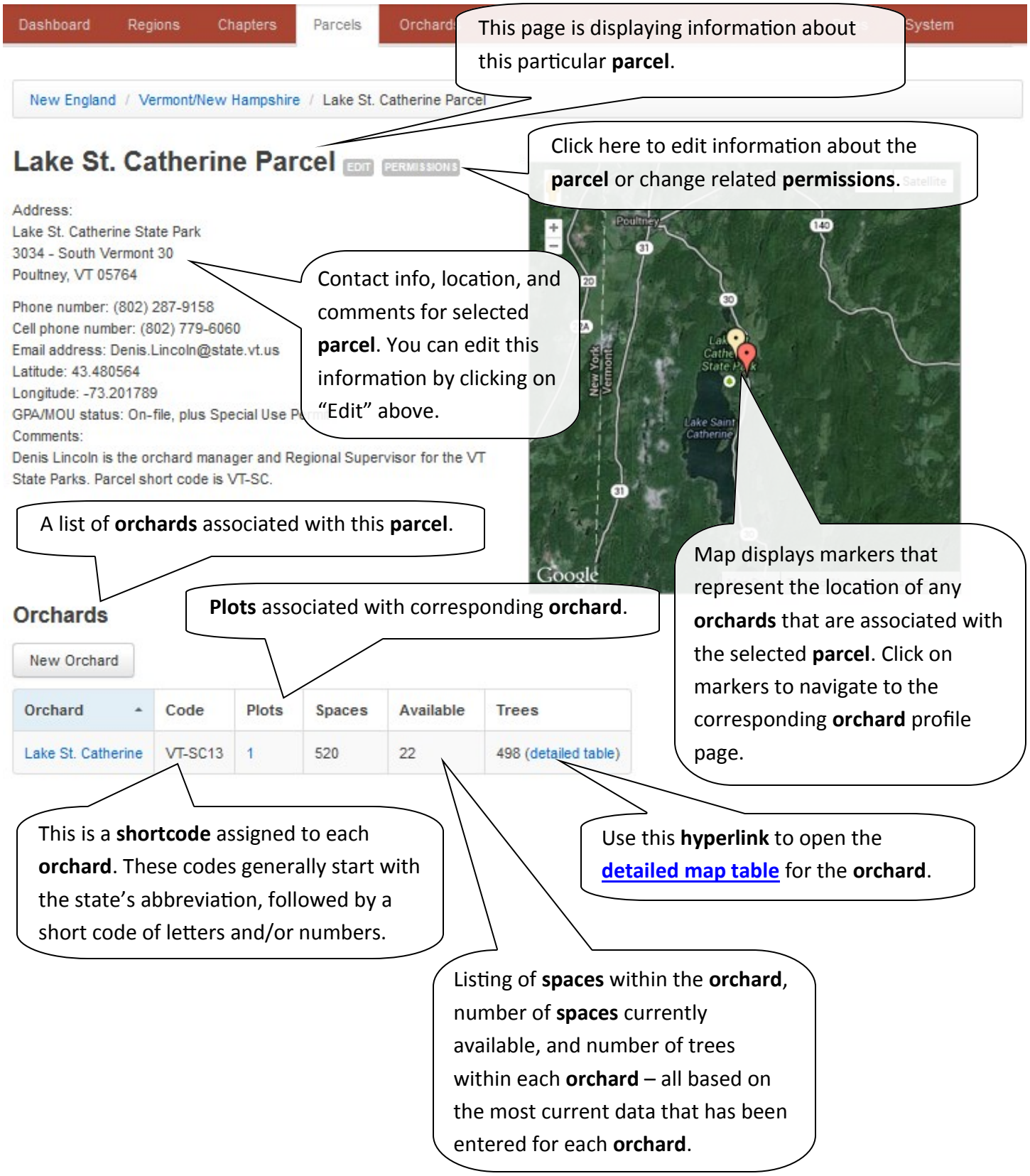


7. Parcels - Overview

A **parcel** is defined as a single property with a single landowner. There may be one or several **orchards** on a **parcel**, but generally the land should be contiguous. **Parcel** is where the landowner contact and agreement information is stored. For many TACF breeding and American germplasm conservation **orchards**, there will be a 1:1:1 relationship between **Parcel**, **Orchard** and **Plot**. If you have any questions, please contact your Regional Science Coordinator.



7.1 Parcels - Parcel Detail



This page is displaying information about this particular **parcel**.

Click here to edit information about the **parcel** or change related **permissions**.

Contact info, location, and comments for selected **parcel**. You can edit this information by clicking on "Edit" above.

A list of **orchards** associated with this **parcel**.

Plots associated with corresponding **orchard**.

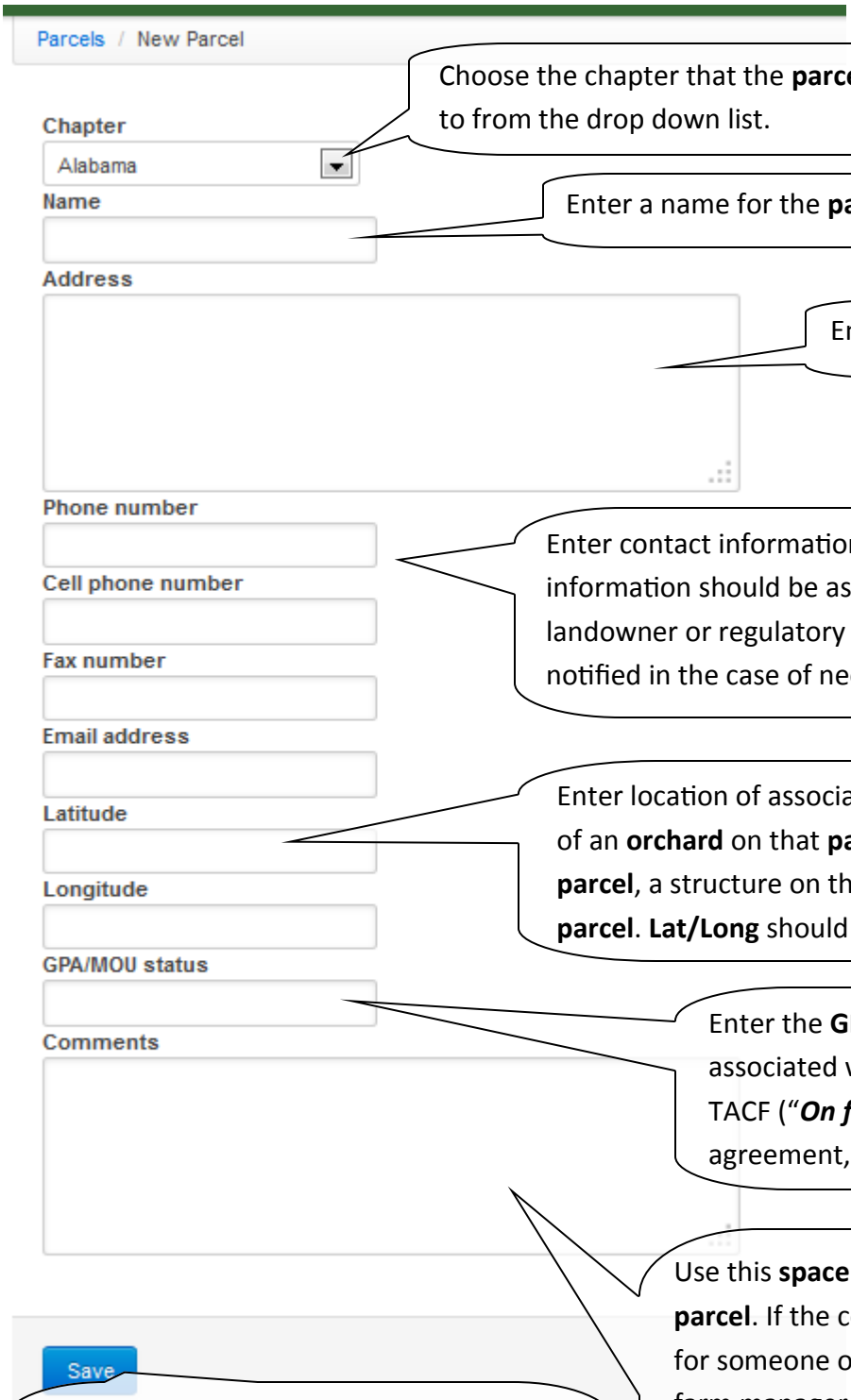
Map displays markers that represent the location of any **orchards** that are associated with the selected **parcel**. Click on markers to navigate to the corresponding **orchard** profile page.

This is a **shortcode** assigned to each **orchard**. These codes generally start with the state's abbreviation, followed by a short code of letters and/or numbers.

Use this **hyperlink** to open the **detailed map table** for the **orchard**.

Listing of **spaces** within the **orchard**, number of **spaces** currently available, and number of trees within each **orchard** – all based on the most current data that has been entered for each **orchard**.

7.2 Parcels - Add New or Edit Parcel



Choose the chapter that the **parcel** belongs to from the drop down list.

Enter a name for the **parcel**.

Enter an address for the **parcel**.

Enter contact information for the **parcel**. This information should be associated with the landowner or regulatory body that would be notified in the case of needed access.

Enter location of associated **parcel**. This can be the location of an **orchard** on that **parcel**, the street entrance to that **parcel**, a structure on that **parcel**, or the center of the **parcel**. **Lat/Long** should be entered in **decimal degrees** (DD).

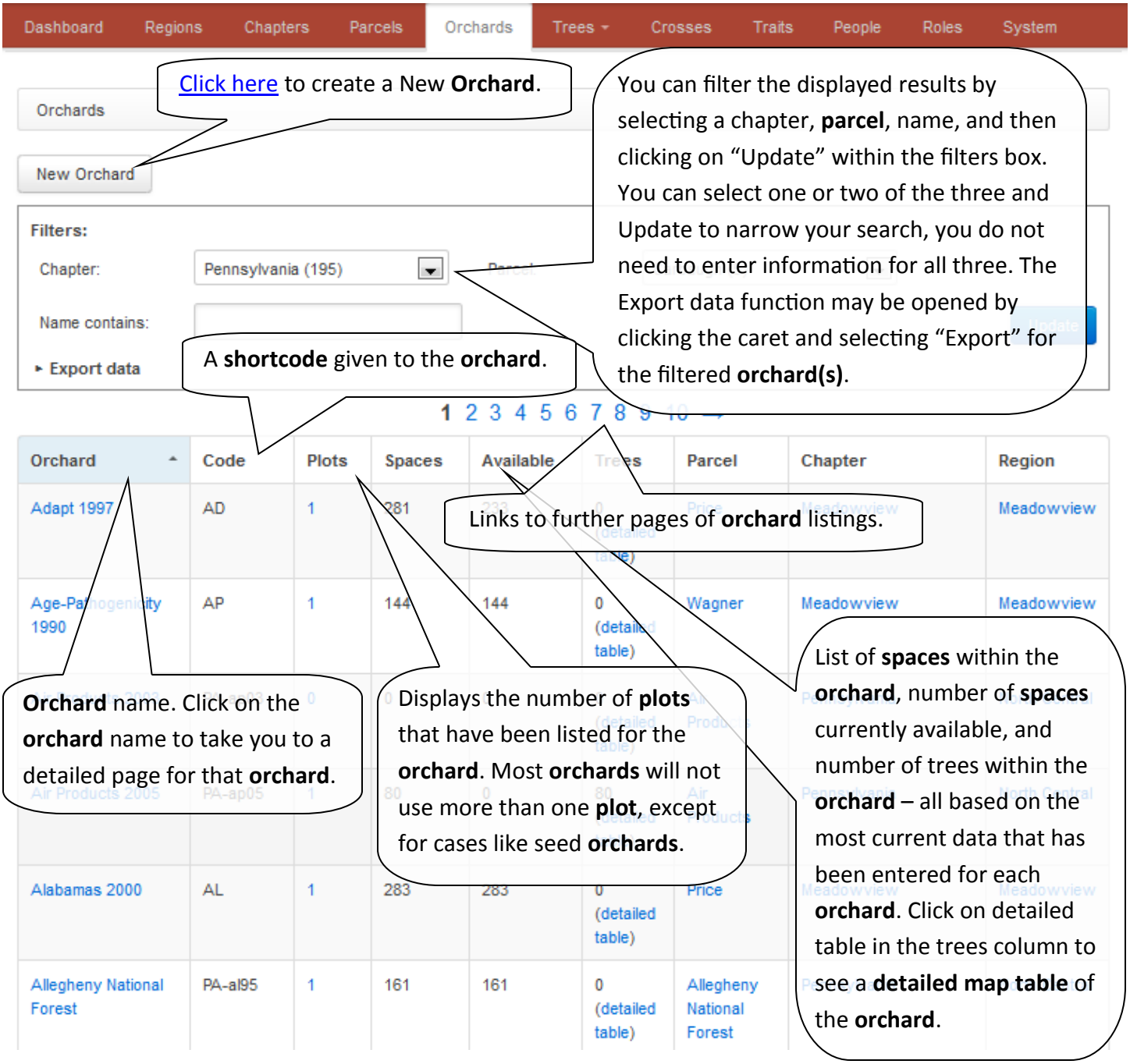
Enter the **GPA/MOU status** of any agreement(s) associated with the **parcel** that is/are on file with TACF (“***On file”*** and/or “***MOU”***). If there is no such agreement, enter “***None***”.

Use this **space** to make any special notes about the **parcel**. If the contact information entered above is for someone other than the landowner, such as the farm manager, indicate this here. Also enter any access restrictions here. If information pertains to one of two or more **orchards** in the **parcel**, you may wish to enter that information in that orchard’s profile comments.

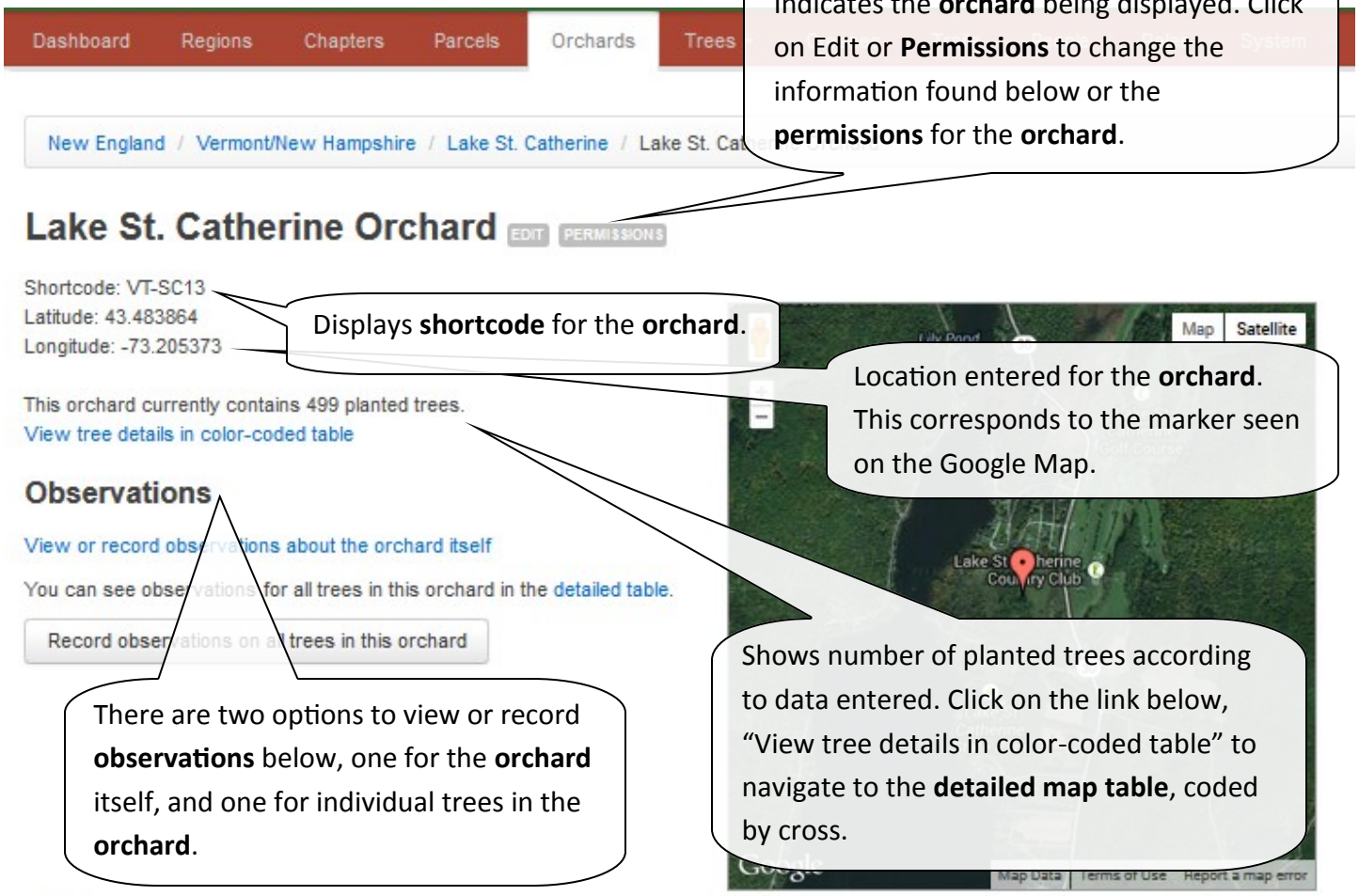
Click “Save” to create (or edit) a **parcel** profile and save the above information. If you navigate away from this page or close it before saving, your entered information will be lost.

8. Orchards - Overview

Orchards are intentional **plantings** of chestnut trees with a common management/experimental objective contained within a contiguous area. There can be several **orchards** within one **parcel**. **Orchards** may be planted over several years, but must meet the above definition.



8.1 Orchards - Orchard Detail



Indicates the **orchard** being displayed. Click on Edit or **Permissions** to change the information found below or the **permissions** for the **orchard**.

Displays **shortcode** for the **orchard**.

Location entered for the **orchard**. This corresponds to the marker seen on the Google Map.

Shows number of planted trees according to data entered. Click on the link below, "View tree details in color-coded table" to navigate to the **detailed map table**, coded by cross.

There are two options to view or record **observations** below, one for the **orchard** itself, and one for individual trees in the **orchard**.

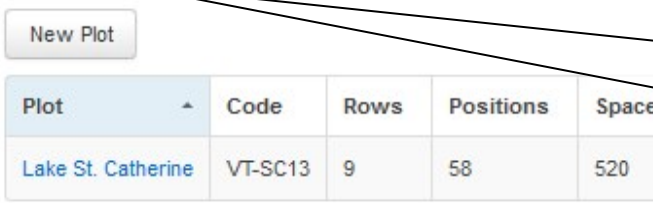


Table displaying any **plots** that have been generated for this **orchard**. Click here to navigate to the section about **plots**. Click "New Plot" to create a new plot in this **orchard**.

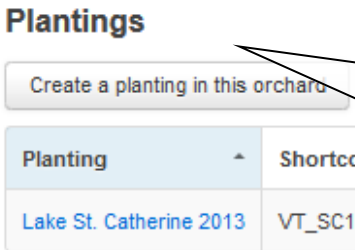
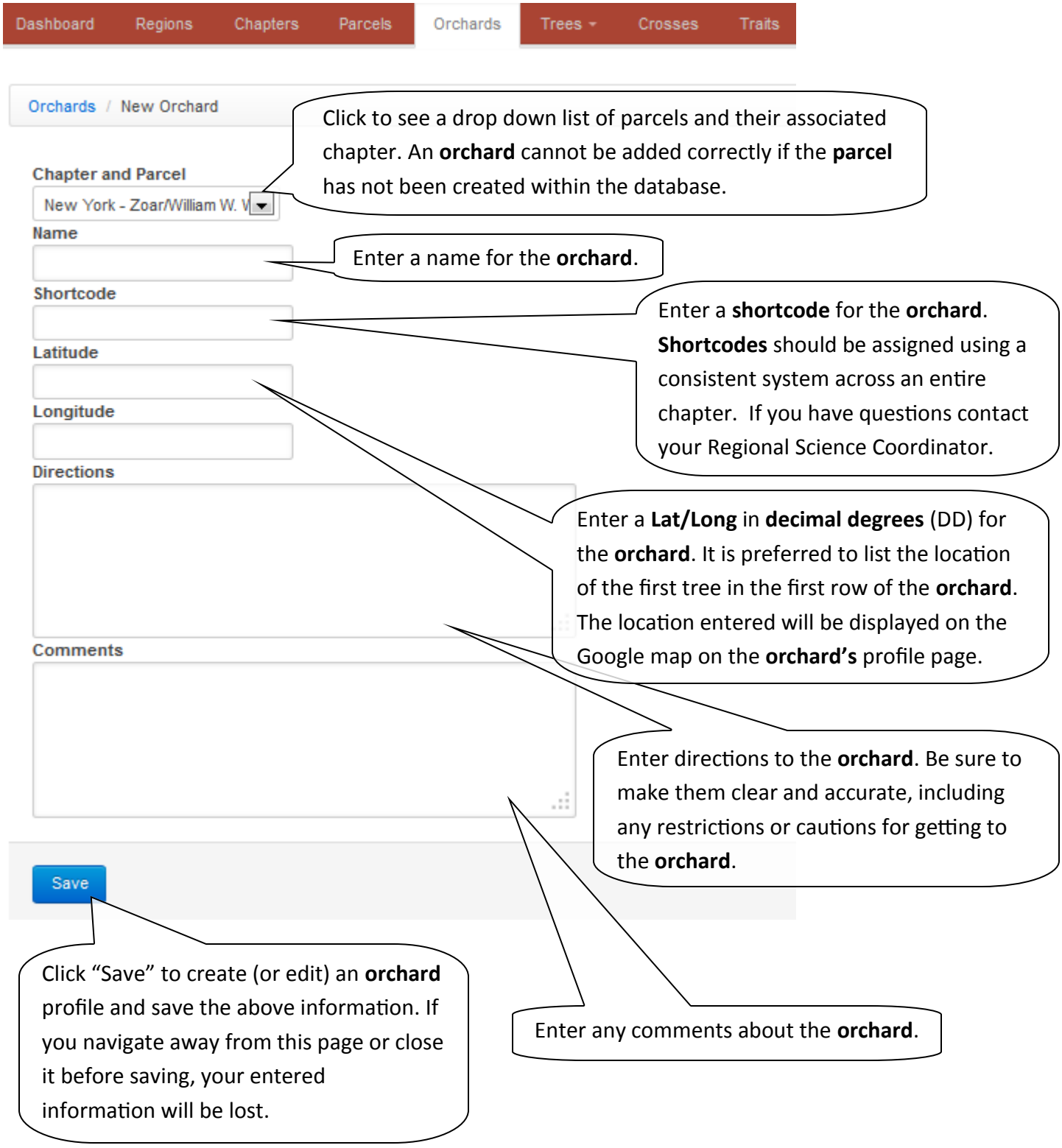


Table displaying any **plantings** that have been entered for this **orchard**. You can click on the **Planting** name in the first column to see the profile page for the **planting** or click on the detailed table link in the Trees column to go directly to the **detailed map table** of the **orchard** or click on the number in the Trees column to see a table of details for each tree planted within that row's **planting**. Click "Create a planting in this orchard" to add a new planting.

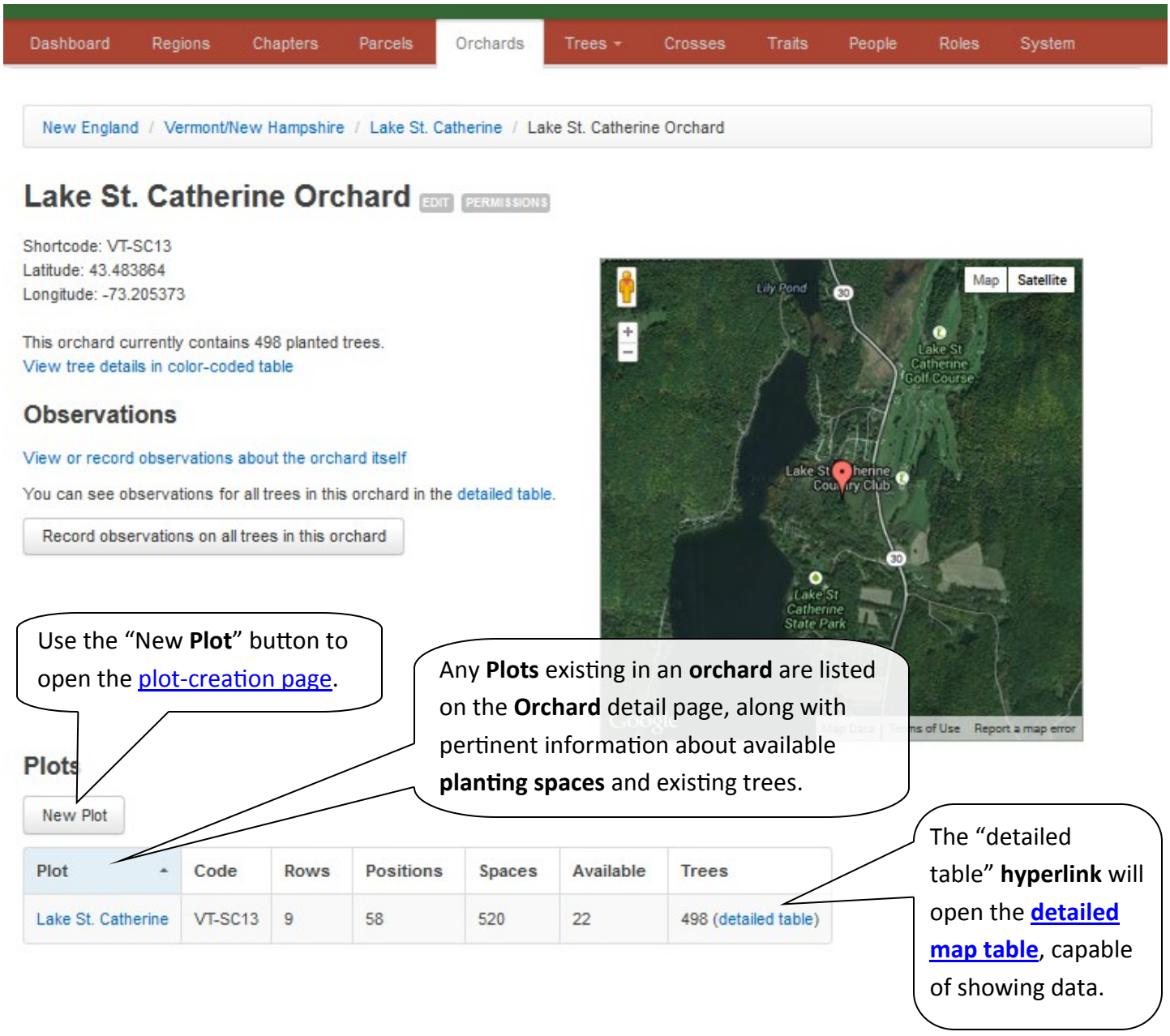
8.2 Orchards - Add New or Edit Orchard



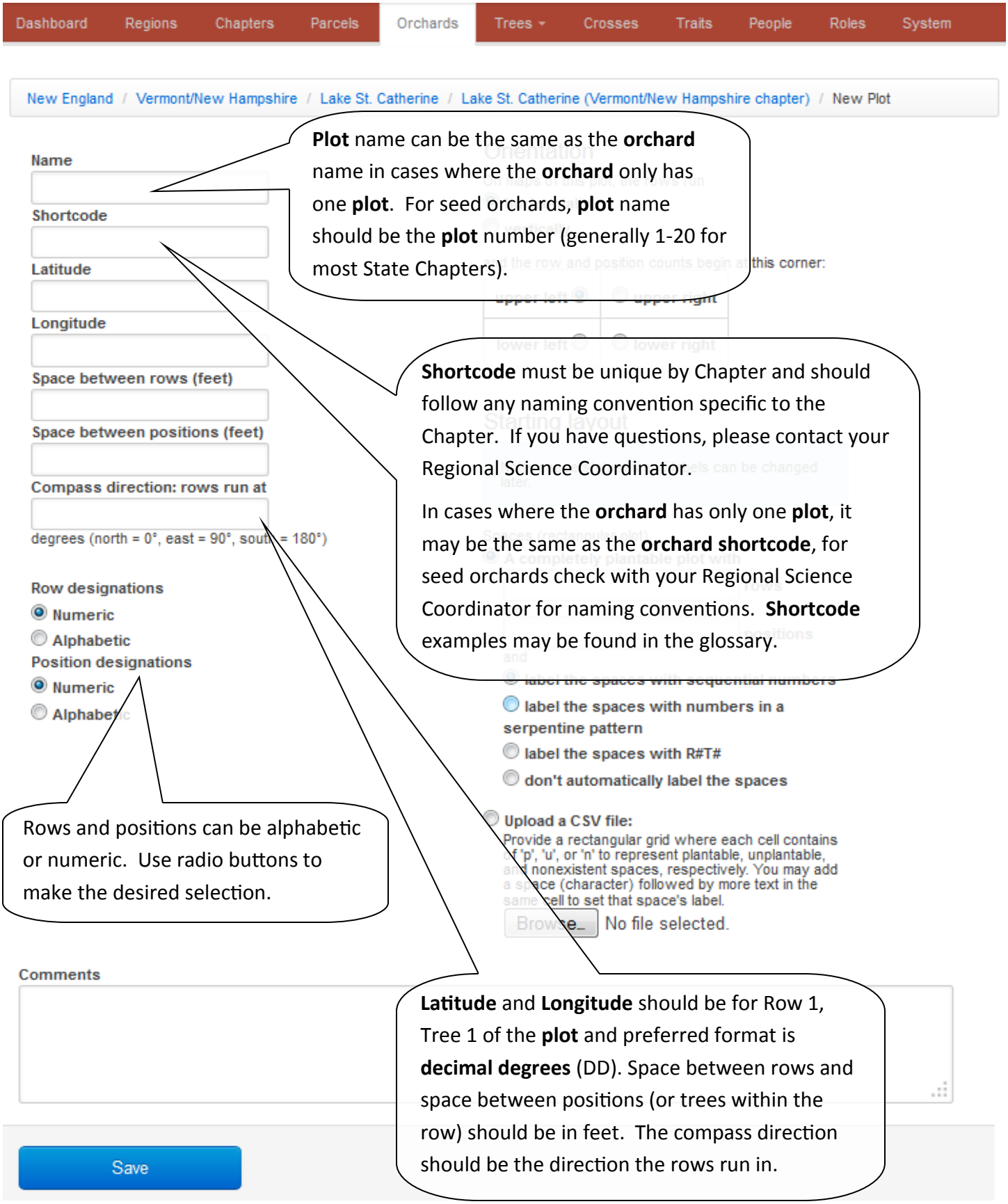
9. Plots - Overview

A **plot** is the physical layout of the **spaces** you will plant. The *dentata*Base only accommodates **plots** laid-out on a grid. There are several options for customization that will be detailed in this section of the User Guide, and the *dentata*Base should be able to accommodate any layout desired.

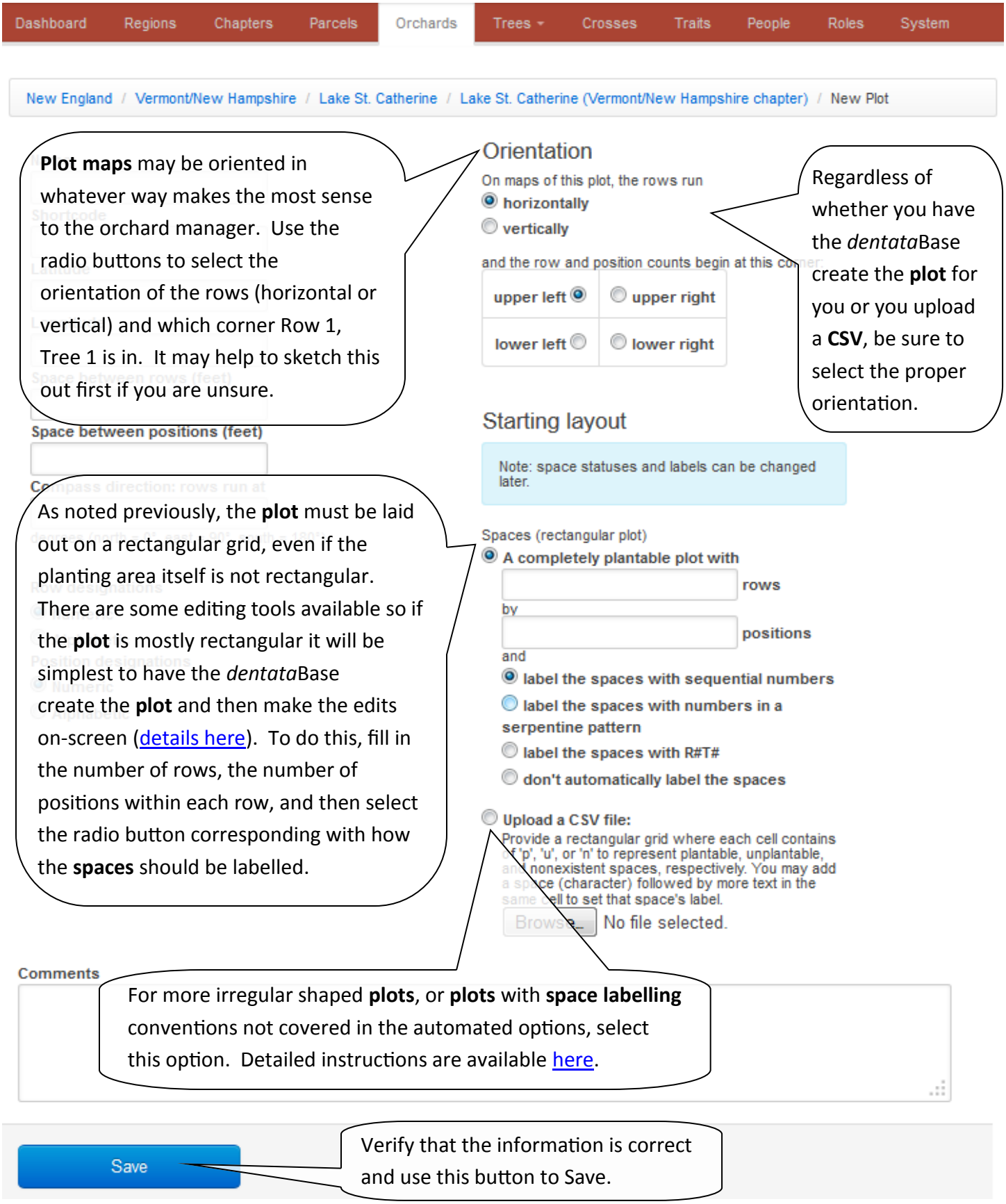
For many TACF breeding and American germplasm conservation **orchards**, there will be a 1:1:1 relationship between **Parcel**, **Orchard** and **Plot**. For seed orchards, the **Plot** functionality is used for tracking trees in different **lines**. *Please note: we cannot yet add **spaces** to a **plot** once it is created and contains planted trees so if you will be planting within the area over several years it is best to create the full **plot** layout up front.*



9.1 Plots - Add New or Edit Plot



9.2 Plots - Add New or Edit Plot (2)



Plot maps may be oriented in whatever way makes the most sense to the orchard manager. Use the radio buttons to select the orientation of the rows (horizontal or vertical) and which corner Row 1, Tree 1 is in. It may help to sketch this out first if you are unsure.

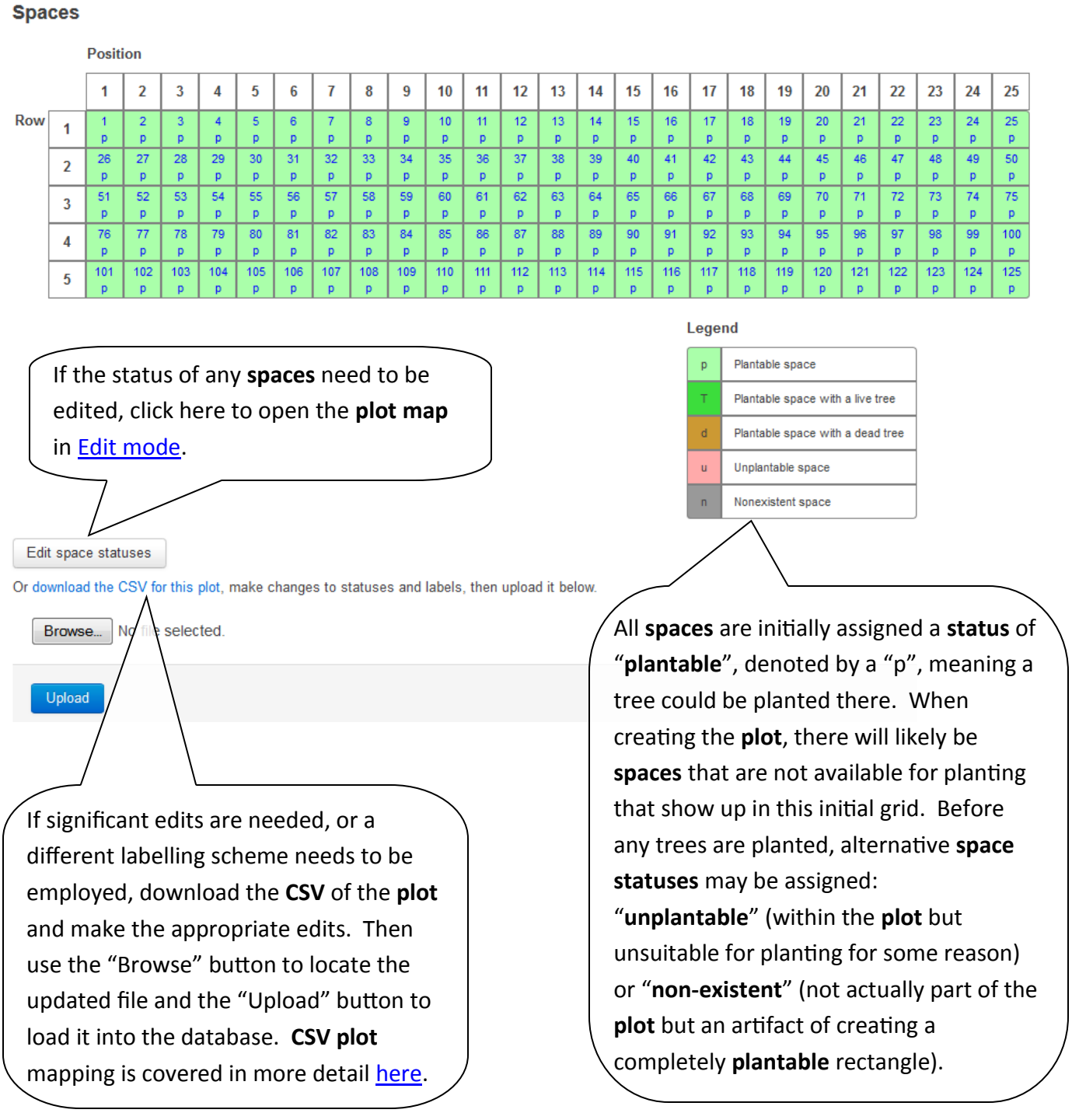
Regardless of whether you have the *dentata*Base create the **plot** for you or you upload a **CSV**, be sure to select the proper orientation.

As noted previously, the **plot** must be laid out on a rectangular grid, even if the planting area itself is not rectangular. There are some editing tools available so if the **plot** is mostly rectangular it will be simplest to have the *dentata*Base create the **plot** and then make the edits on-screen (details here). To do this, fill in the number of rows, the number of positions within each row, and then select the radio button corresponding with how the **spaces** should be labelled.

For more irregular shaped **plots**, or **plots** with **space labelling** conventions not covered in the automated options, select this option. Detailed instructions are available here.

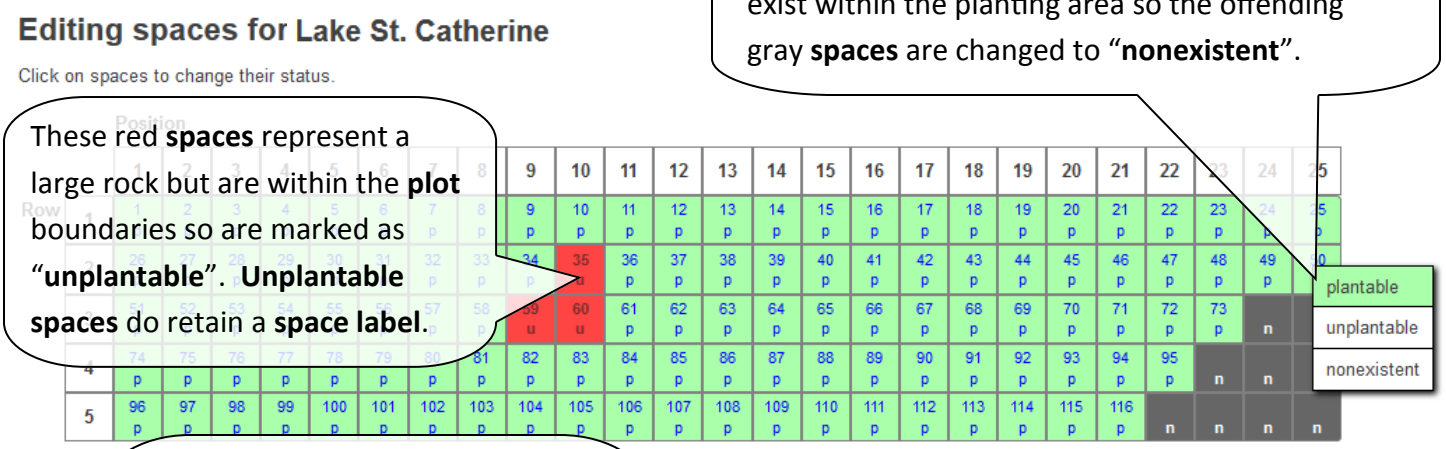
Verify that the information is correct and use this button to Save.

9.3 Plots - Review Plot



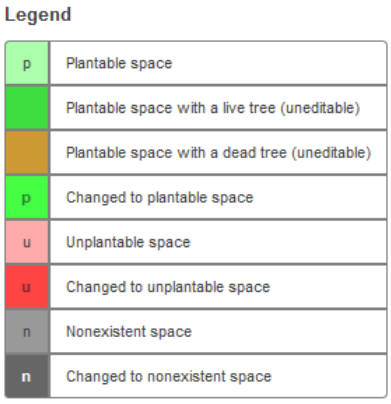
9.4 Plots - Plot Map and Editing Plot Spaces

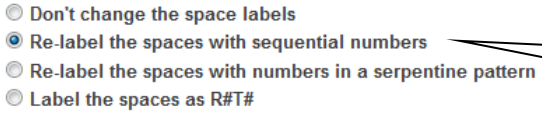
Clicking on a **space** allows you to select an alternate **status**. This corner of the **plot** does not exist within the planting area so the offending gray **spaces** are changed to "**nonexistent**".



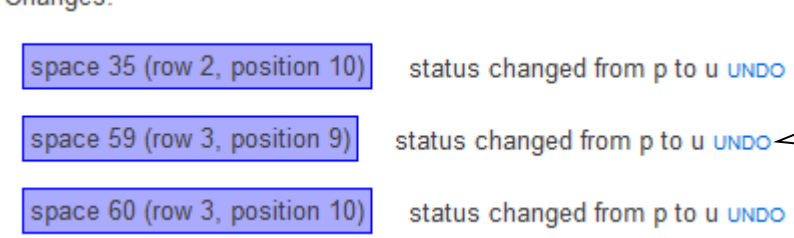
These red **spaces** represent a large rock but are within the **plot** boundaries so are marked as "**unplantable**". **Unplantable spaces** do retain a **space label**.

In Edit mode **plot space statuses** may be changed. Click on any **space** to change it's **status**. "**Unplantable**" **spaces** are part of the **plot** but may be occupied by a rock or located in a wet spot. "**Nonexistent**" **spaces** are not part of the **plot** at all.

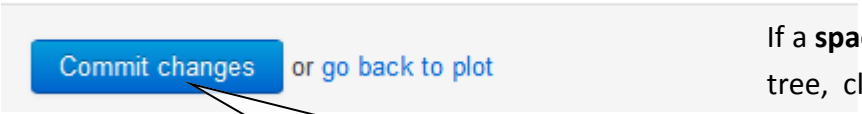




Nonexistent spaces can be removed from the labelling scheme by selecting a radio button to re-label the edited **plot map**.



All changes are listed below the **plot map** and can be undone by clicking the blue "UNDO" **hyperlink**.



If all changes are correct, click the "Commit changes" button.

If a **space** in the **plot** is occupied by a planted tree, clicking on the **space** will take you to the detail page for the planted tree. If the **space** is unoccupied, clicking on the **space** will take you to the detail page for the **space**.

9.5 Plots - CSV Plot Creation or Editing

Basic Plot CSV

In this basic **plot** layout, "p" notes **spaces** that are "**plantable**", "u" notes **spaces** that are "**unplantable**" and "n" notes **spaces** that are "**nonexistent**". This table could be saved in the .csv file format and uploaded as a **plot** layout.

p	p	p	p	p	p	p	p
p	p	p	u	u	p	p	p
p	p	p	u	p	p	n	n
p	p	p	u	p	p	n	n
p	p	p	u	p	p	n	n
p	p	p	u	u	p	n	n

Custom Space-labelling with Plot CSV

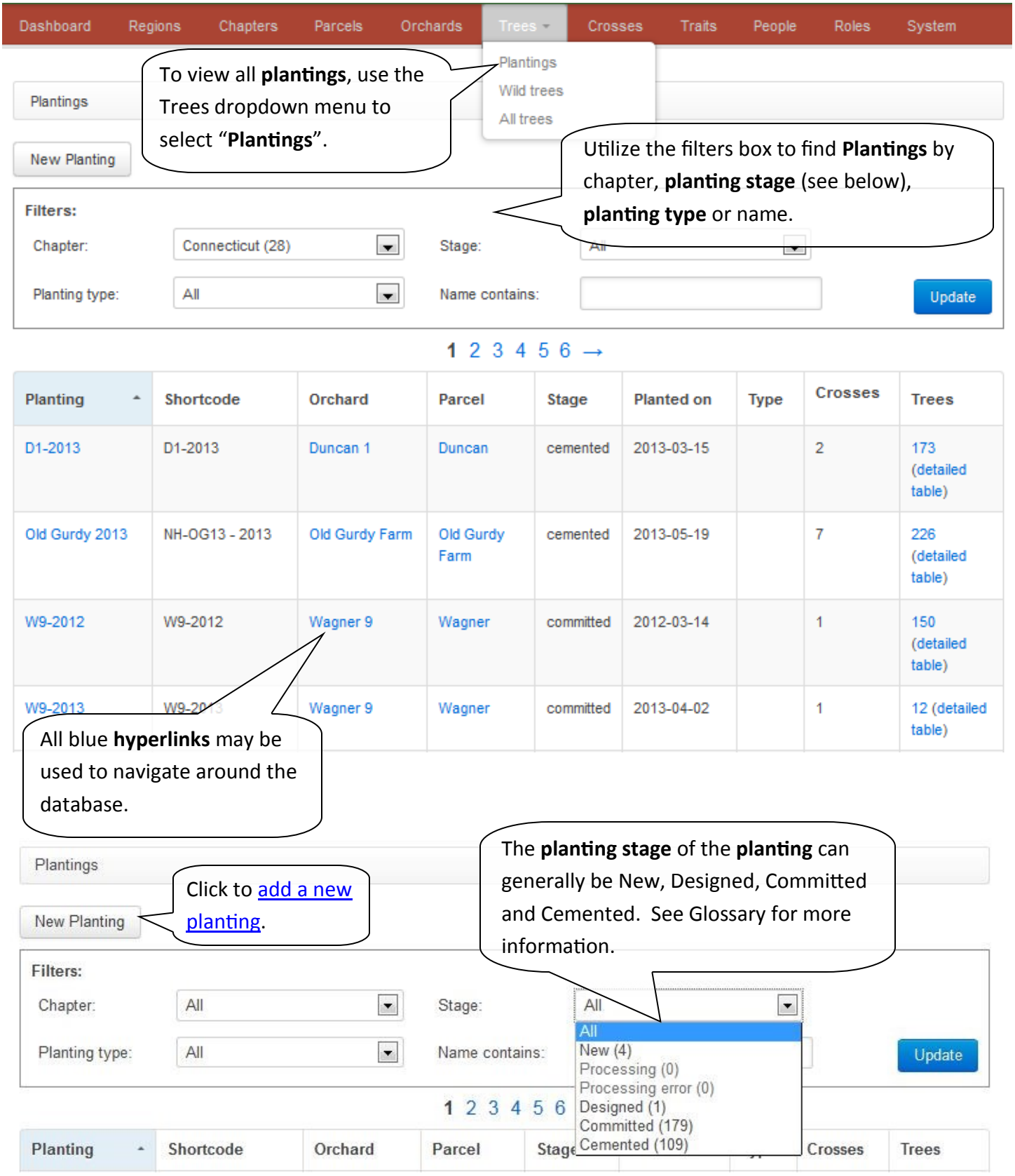
In this example the **spaces** in the **plot** are labelled in a pattern not accommodated by options built into the *dentata*Base. **Space labels** can be added by typing in the **space status** designation ("p", "u" or "n"), followed by a space and the appropriate label (labels can be numeric or alphabetic).

p 516	p 416	p 316	p 216	p 116
p 515	p 415	p 315	p 215	p 115
p 514	p 414	p 314	p 214	p 114
p 513	p 413	p 313	p 213	p 113
p 512	p 412	p 312	p 212	p 112
p 511	p 411	p 311	p 211	p 111
p 510	p 410	p 310	p 210	p 110
p 509	p 409	p 309	p 209	p 109
p 508	p 408	p 308	p 208	p 108
p 507	p 407	p 307	p 207	p 107
p 506	p 406	p 306	p 206	p 106
p 505	p 405	p 305	p 205	p 105
p 504	p 404	p 304	p 204	p 104
p 503	p 403	p 303	p 203	p 103
p 502	p 402	p 302	p 202	p 102
p 501	p 401	p 301	p 201	p 101

This **plot** starts in the *lower right* corner and rows run *vertically*. When uploading this table it would be important to select these orientation options in the "Add New Plot" page.

Remember, the **plot** needs to be a complete rectangle so if you have an irregularly shaped planting area you still need to work within a rectangle by utilizing as many **nonexistent spaces** as needed. Also, if you download a **CSV** from the edit **plot** page, keep the dimensions the same and only change **space statuses** and labels to ensure integrity when uploaded.

10. Plantings - Overview



10.1 Plantings - Overview (2)

New England / Vermont/New Hampshire / Lake St. Catherine / Lake St. Catherine Orchard

Lake St. Catherine Orchard EDIT PERMISSIONS

Shortcode: VT-SC13
Latitude: 43.483864
Longitude: -73.205373

This orchard currently contains 498 planted trees.
View tree details in color-coded table

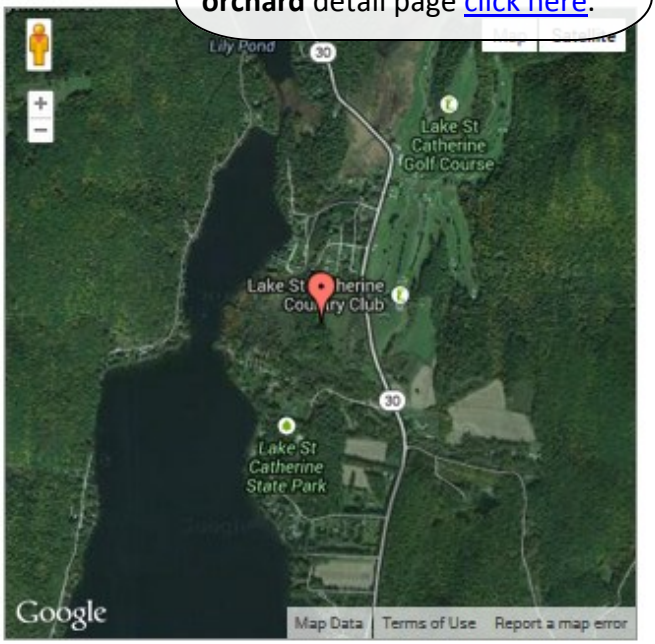
Observations

View or record observations about the orchard itself

You can see observations for all trees in this orchard in the detailed table.

Record observations on all trees in this orchard

Plantings may also be accessed though the **Orchard** detail page for a particular **orchard**. For more information about the **orchard** detail page click here.



Plots

New Plot

Plot	Code	Rows	Positions	Spaces
Lake St. Catherine	VT-SC13	9	58	520

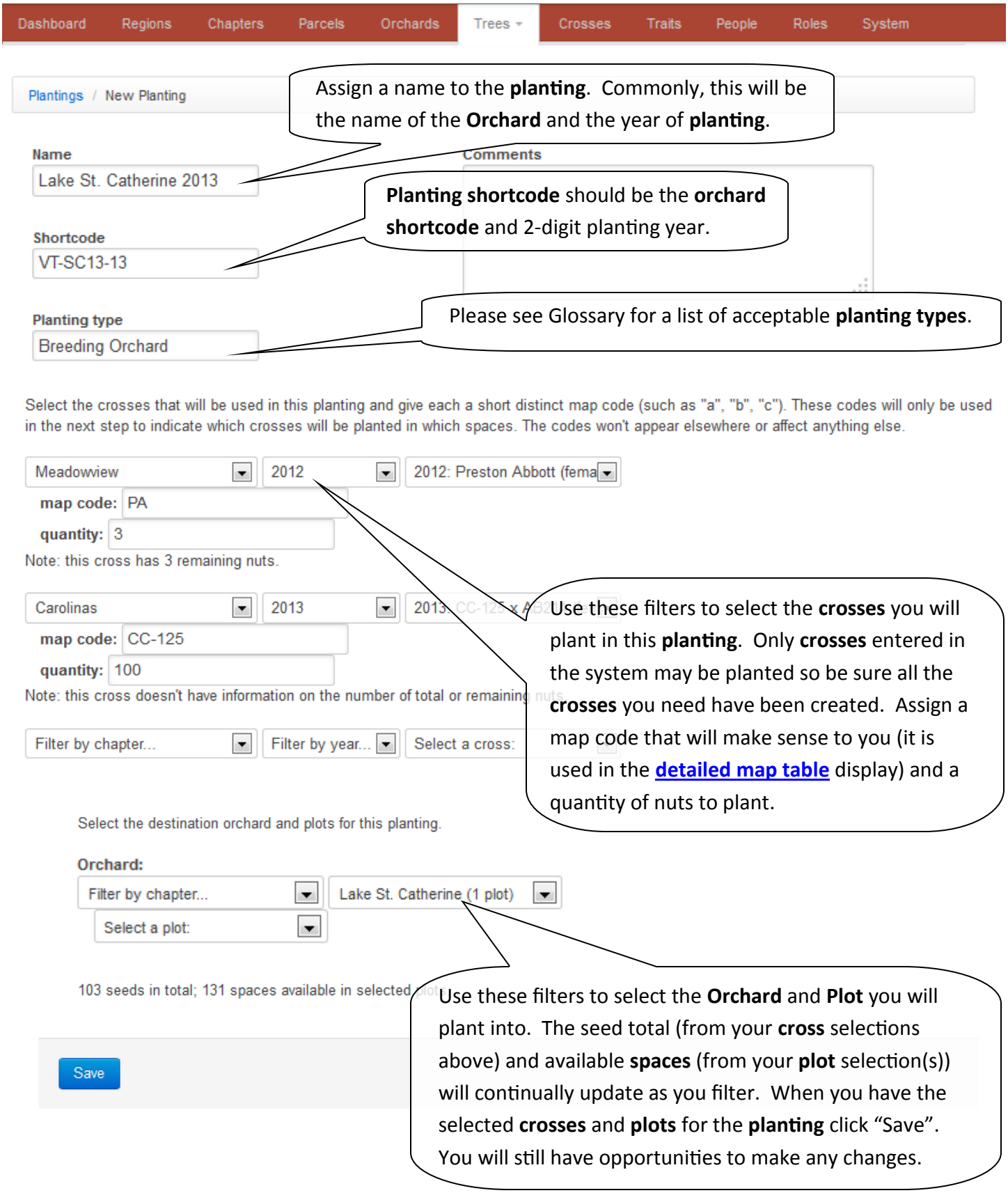
Plantings

Information about all **plantings** in an **orchard** of interest may be found in this table. The **hyperlinked** text will take you to the detail page for the **planting** or open the **detailed map table**. Select the "Create a planting in this orchard" button to open the new planting page.

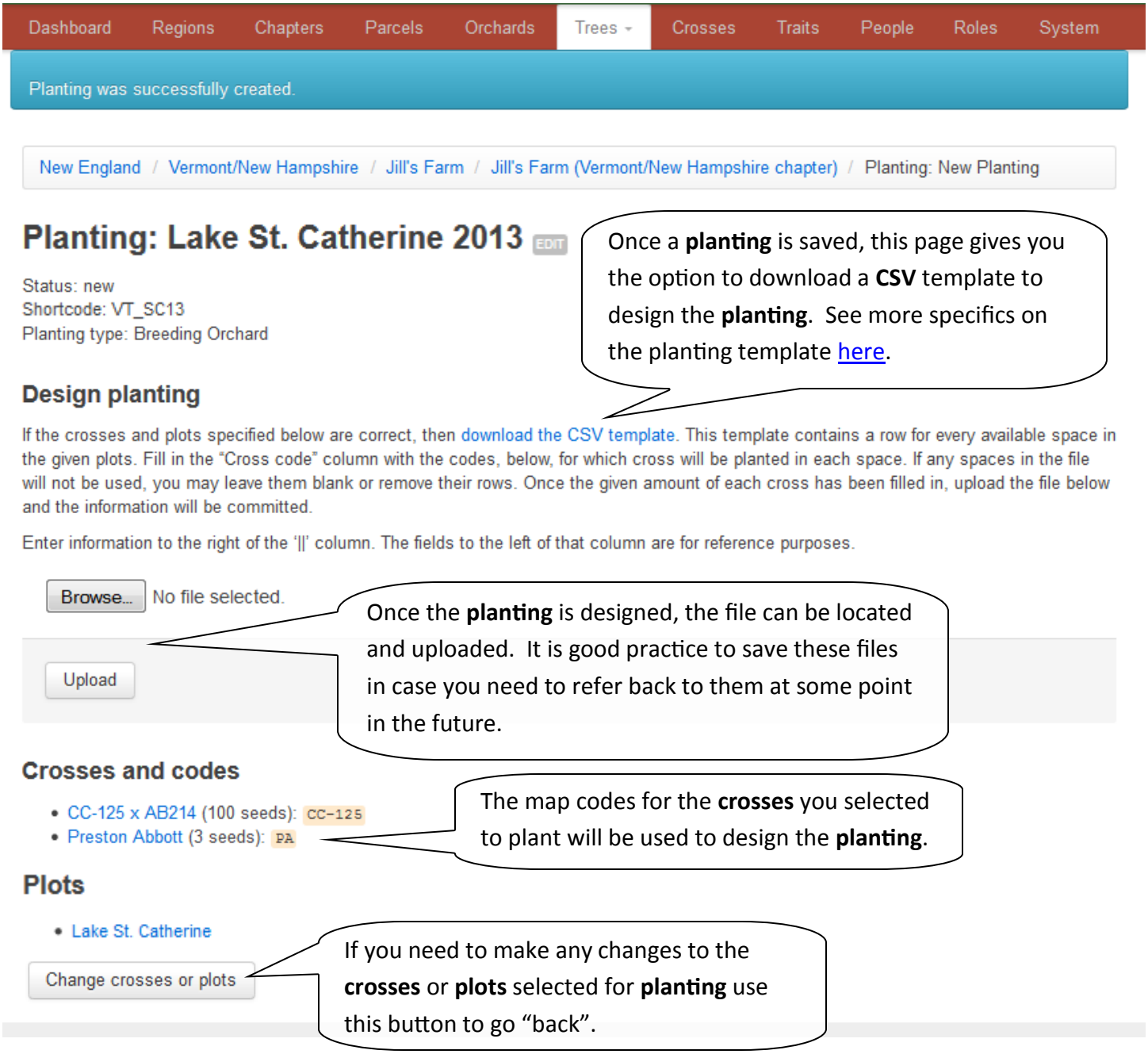
Create a planting in this orchard

Planting	Shortcode	Status	Planted on	Type	Crosses	Trees
Lake St. Catherine 2013	VT_SC13	cemented	2013-05-16		7	498 (detailed table)

10.2 Plantings - Add a New Planting



10.3 Plantings - Add a New Planting (2)



10.4 Plantings - Design Planting CSV Template

Using the map codes assigned to the **crosses** selected, assign a **cross** to each **space**. These map codes **MUST MATCH** the codes used to create the **planting** and the number of trees planted for each **cross** **MUST MATCH** the number selected to plant.

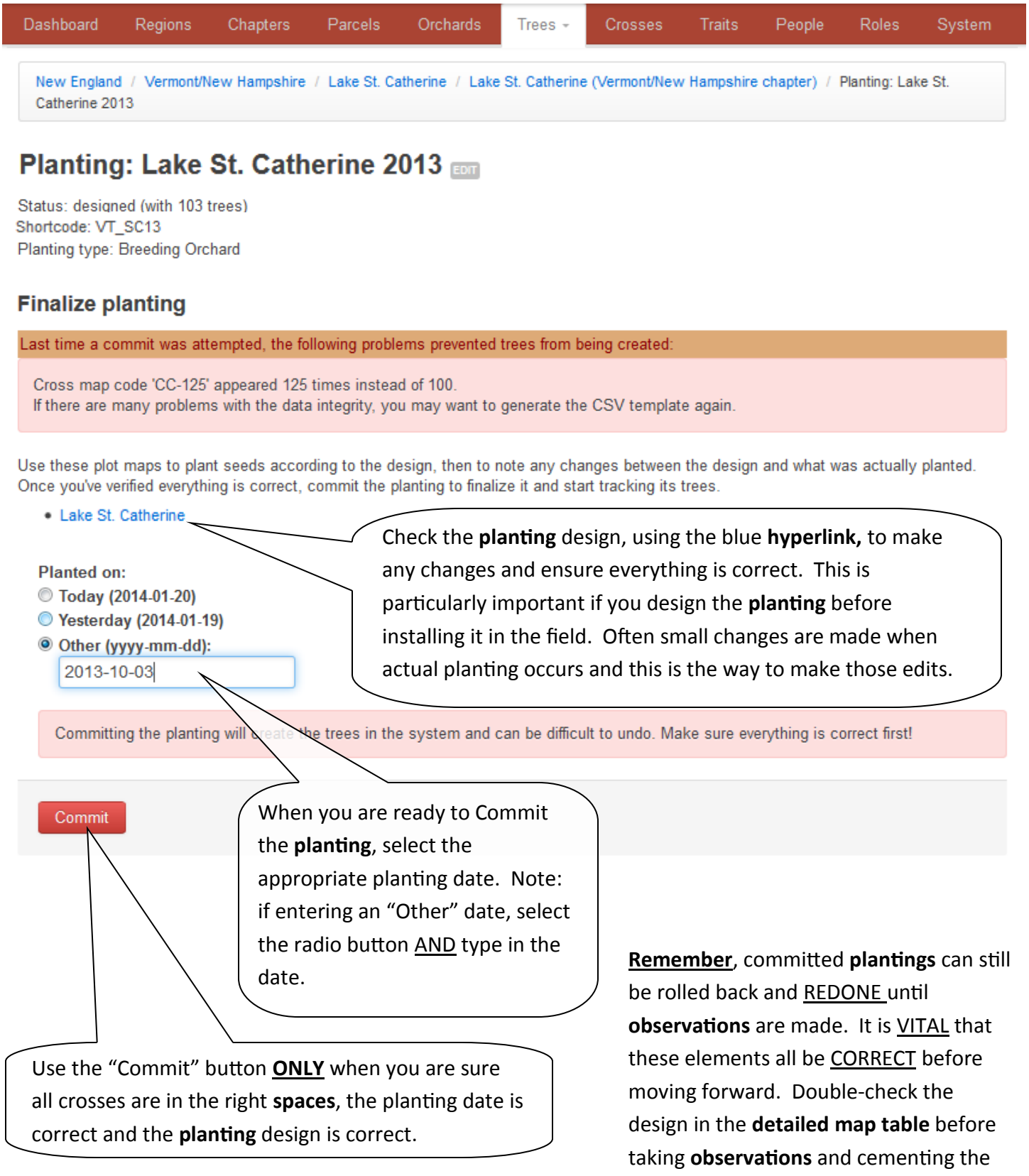
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Space ID (internal)	Orchard name	Plot name	Plot ID	Space label	Row	Position	||	Cross map code	Tree shortcode (leave blank for default)	Tree name (leave blank to use shortcode)	Tree tag (optional)	Planted as (seed or seedling; default seed)
2	34712	Lake St. Ca	Lake St. Ca	104	4	1	4	||	CC-125			4	
3	34713	Lake St. Ca	Lake St. Ca	104	5	1	5	||	CC-125			5	
4	34714	Lake St. Ca	Lake St. Ca	104	6	1	6	||	CC-125			6	
5	34715	Lake St. Ca	Lake St. Ca	104	7	1	7	||	CC-125			7	
6	34716	Lake St. Ca	Lake St. Ca	104	8	1	8	||	CC-125			8	
7	34717	Lake St. Ca	Lake St. Ca	104	9	1	9	||	PA			9	seedling
8	34718	Lake St. Ca	Lake St. Ca	104	10	1	10	||	CC-125			10	
9	34719	Lake St. Ca	Lake St. Ca	104	11	1	11	||	CC-125			11	
10	34720	Lake St. Ca	Lake St. Ca	104	12	1	12	||	CC-125			12	
11	34721	Lake St. Ca	Lake St. Ca	104	13	1	13	||	CC-125			13	
12	34722	Lake St. Ca	Lake St. Ca	104	14	1	14	||	CC-125			14	
13	34723	Lake St. Ca	Lake St. Ca	104	15	1	15	||	CC-125			15	
14	34724	Lake St. Ca	Lake St. Ca	104	16	1	16	||	CC-125			16	
15	34725	Lake St. Ca	Lake St. Ca	104	17	1	17	||	CC-125			17	
16	34726	Lake St. Ca	Lake St. Ca	104	18	1	18	||	CC-125			18	
17	34730	Lake St. Ca	Lake St. Ca	104	19	2	2	||	PA			19	seedling
18	34731	Lake St. Ca	Lake St. Ca	104	20	2	3	||	CC-125			20	
19	34732	Lake St. Ca	Lake St. Ca	104	21	2	4	||	CC-125			21	
20	34733	Lake St. Ca	Lake St. Ca	104	22	2	5	||	CC-125			22	
21	34734	Lake St. Ca	Lake St. Ca	104	23	2	6	||	CC-125			23	

Check the order of the rows and positions (or **space labels**) to ensure you are **planting** trees in the **spaces** you intend. You can always re-sort this spreadsheet to facilitate your **planting** design.

Tree shortcode, name and tag are all optional. Defaults exist for **tree shortcode** and name, default for a tag (which is a physical tag on the tree) is null.

Default type of material planted is seed, but "seedling" may be entered when appropriate. Spreadsheet filtering tools can help you make sure you have the correct designation associated with all trees in that **cross**.

10.5 Plantings - Finalize a Planting



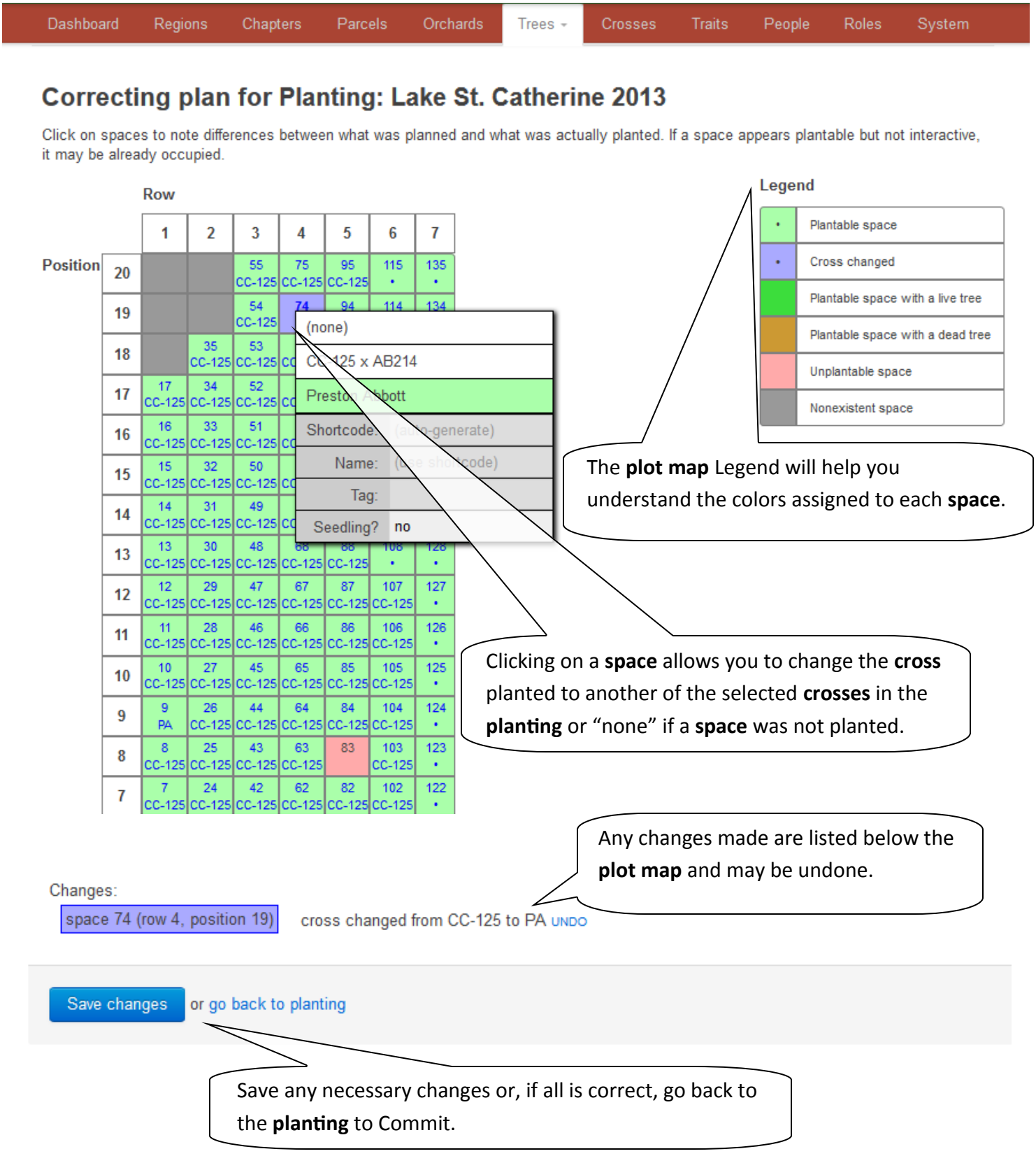
Check the **planting** design, using the blue **hyperlink,** to make any changes and ensure everything is correct. This is particularly important if you design the **planting** before installing it in the field. Often small changes are made when actual planting occurs and this is the way to make those edits.

When you are ready to Commit the **planting**, select the appropriate planting date. Note: if entering an "Other" date, select the radio button AND type in the date.

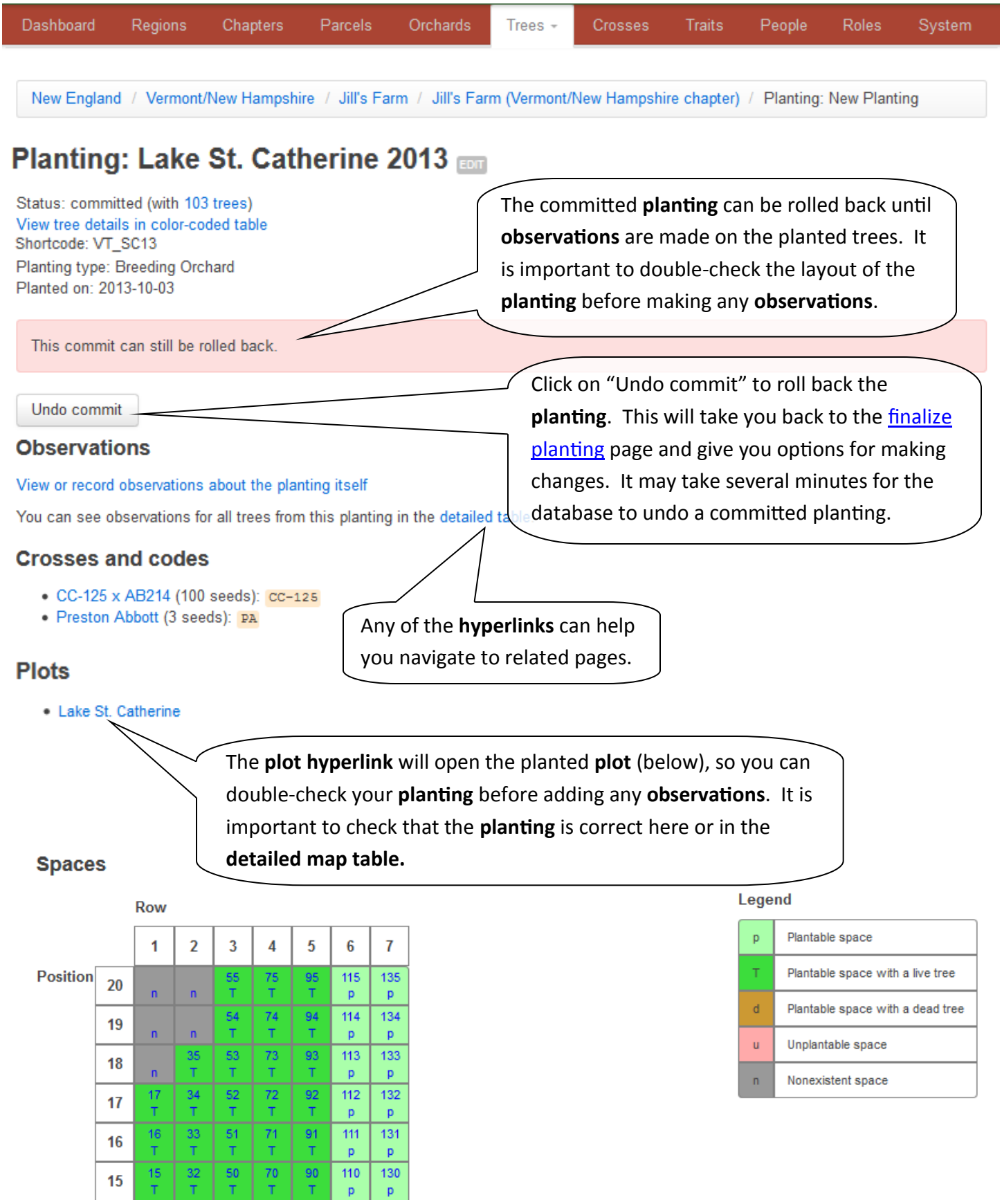
Use the "Commit" button **ONLY** when you are sure all crosses are in the right **spaces**, the planting date is correct and the **planting** design is correct.

Remember, committed **plantings** can still be rolled back and REDONE until **observations** are made. It is VITAL that these elements all be CORRECT before moving forward. Double-check the design in the **detailed map table** before taking **observations** and cementing the **planting(s)**.

10.6 Plantings - Correcting a Planting



10.7 Plantings - Commit a Planting



The committed **planting** can be rolled back until **observations** are made on the planted trees. It is important to double-check the layout of the **planting** before making any **observations**.

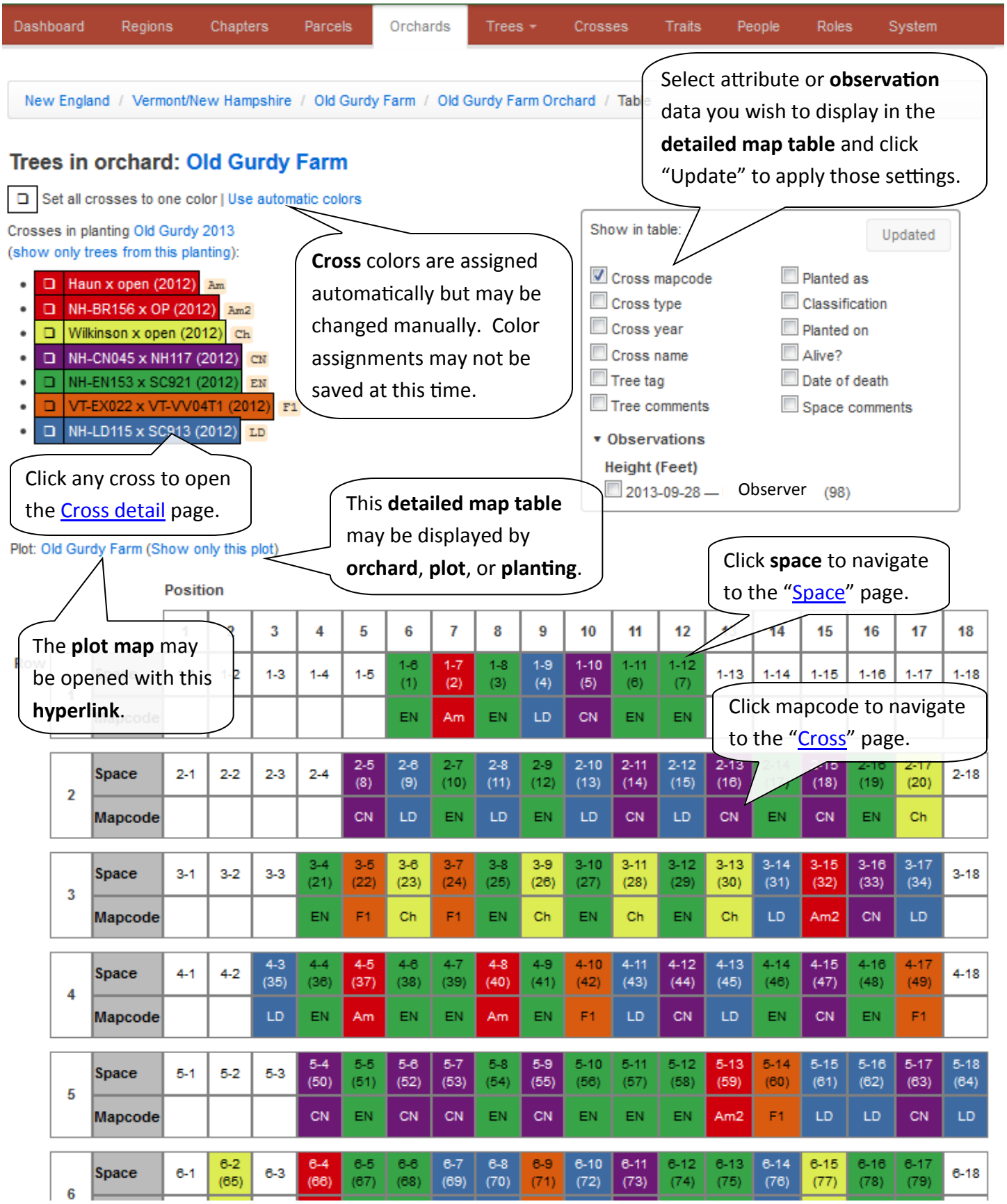
Click on "Undo commit" to roll back the **planting**. This will take you back to the finalize planting page and give you options for making changes. It may take several minutes for the database to undo a committed planting.

Any of the **hyperlinks** can help you navigate to related pages.

The **plot hyperlink** will open the planted **plot** (below), so you can double-check your **planting** before adding any **observations**. It is important to check that the **planting** is correct here or in the **detailed map table.**

Position	1	2	3	4	5	6	7
20	n	n	55 T	75 T	95 T	115 p	135 p
19	n	n	54 T	74 T	94 T	114 p	134 p
18	n	35 T	53 T	73 T	93 T	113 p	133 p
17	17 T	34 T	52 T	72 T	92 T	112 p	132 p
16	16 T	33 T	51 T	71 T	91 T	111 p	131 p
15	15 T	32 T	50 T	70 T	90 T	110 p	130 p

11. Detailed Map Table



Cross colors are assigned automatically but may be changed manually. Color assignments may not be saved at this time.

Select attribute or **observation** data you wish to display in the **detailed map table** and click "Update" to apply those settings.

Click any cross to open the Cross detail page.

This **detailed map table** may be displayed by **orchard**, **plot**, or **planting**.

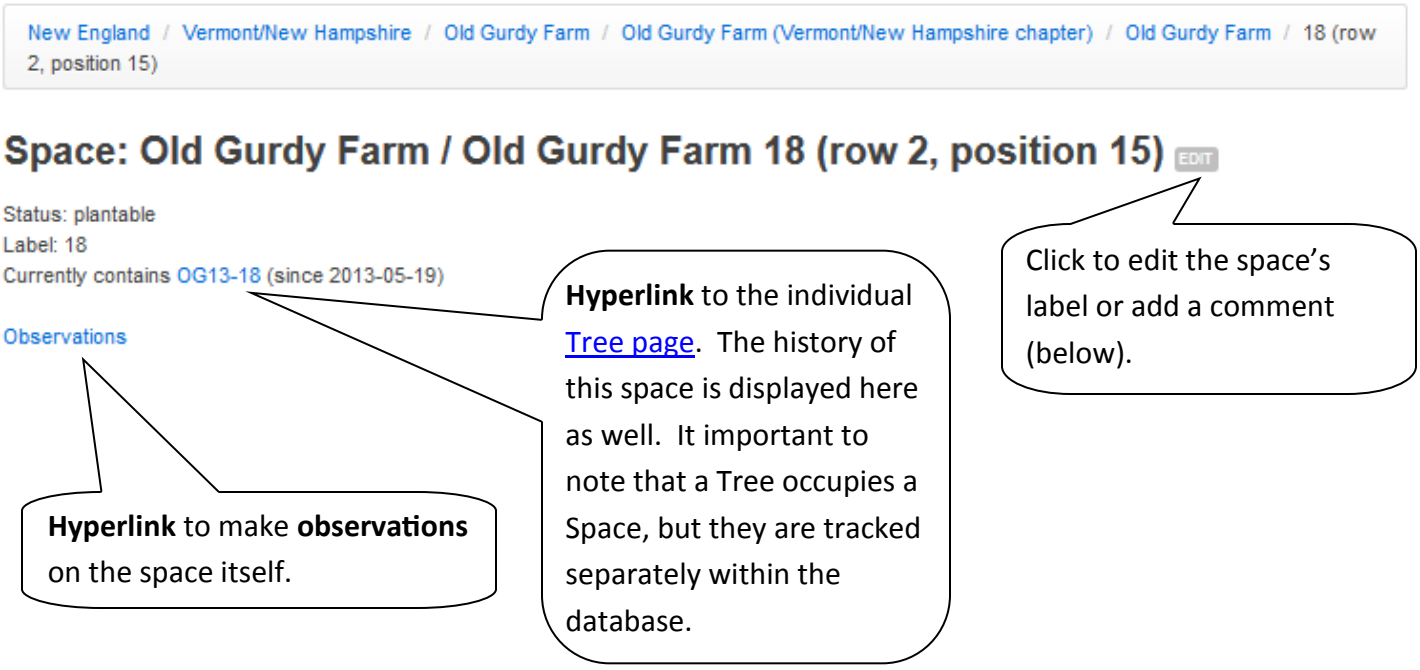
Click **space** to navigate to the "Space" page.

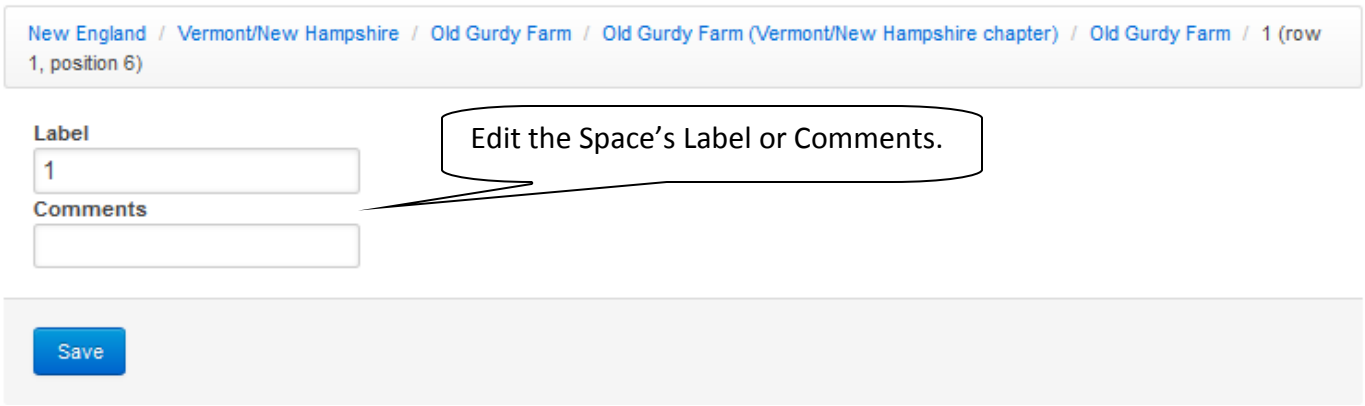
The **plot map** may be opened with this **hyperlink**.

Click mapcode to navigate to the "Cross" page.

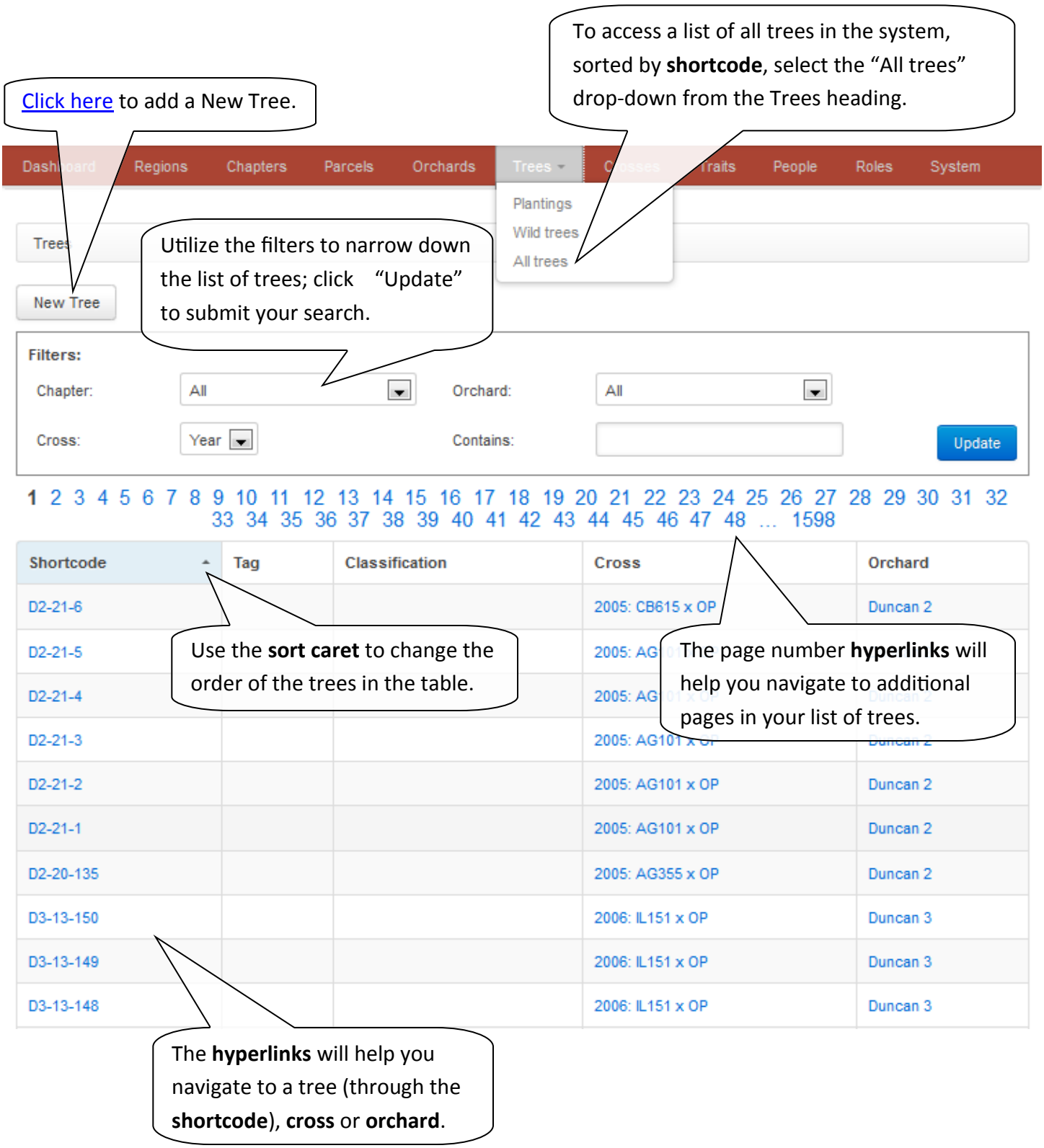
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Row	Space	1-1	1-2	1-3	1-4	1-5	1-6 (1)	1-7 (2)	1-8 (3)	1-9 (4)	1-10 (5)	1-11 (6)	1-12 (7)	1-13	1-14	1-15	1-16	1-17	1-18
	Mapcode						EN	Am	EN	LD	CN	EN	EN						
2	Space	2-1	2-2	2-3	2-4	2-5 (8)	2-6 (9)	2-7 (10)	2-8 (11)	2-9 (12)	2-10 (13)	2-11 (14)	2-12 (15)	2-13 (16)	2-14 (17)	2-15 (18)	2-16 (19)	2-17 (20)	2-18
	Mapcode					CN	LD	EN	LD	EN	LD	CN	LD	CN	EN	CN	EN	Ch	
3	Space	3-1	3-2	3-3	3-4 (21)	3-5 (22)	3-6 (23)	3-7 (24)	3-8 (25)	3-9 (26)	3-10 (27)	3-11 (28)	3-12 (29)	3-13 (30)	3-14 (31)	3-15 (32)	3-16 (33)	3-17 (34)	3-18
	Mapcode				EN	F1	Ch	F1	EN	Ch	EN	Ch	EN	Ch	LD	Am2	CN	LD	
4	Space	4-1	4-2	4-3 (35)	4-4 (36)	4-5 (37)	4-6 (38)	4-7 (39)	4-8 (40)	4-9 (41)	4-10 (42)	4-11 (43)	4-12 (44)	4-13 (45)	4-14 (46)	4-15 (47)	4-16 (48)	4-17 (49)	4-18
	Mapcode			LD	EN	Am	EN	EN	Am	EN	F1	LD	CN	LD	EN	CN	EN	F1	
5	Space	5-1	5-2	5-3	5-4 (50)	5-5 (51)	5-6 (52)	5-7 (53)	5-8 (54)	5-9 (55)	5-10 (56)	5-11 (57)	5-12 (58)	5-13 (59)	5-14 (60)	5-15 (61)	5-16 (62)	5-17 (63)	5-18 (64)
	Mapcode				CN	EN	CN	CN	EN	CN	EN	EN	EN	Am2	F1	LD	LD	CN	LD
6	Space	6-1	6-2 (65)	6-3	6-4 (66)	6-5 (67)	6-6 (68)	6-7 (69)	6-8 (70)	6-9 (71)	6-10 (72)	6-11 (73)	6-12 (74)	6-13 (75)	6-14 (76)	6-15 (77)	6-16 (78)	6-17 (79)	6-18

11.1 Space or Edit Space



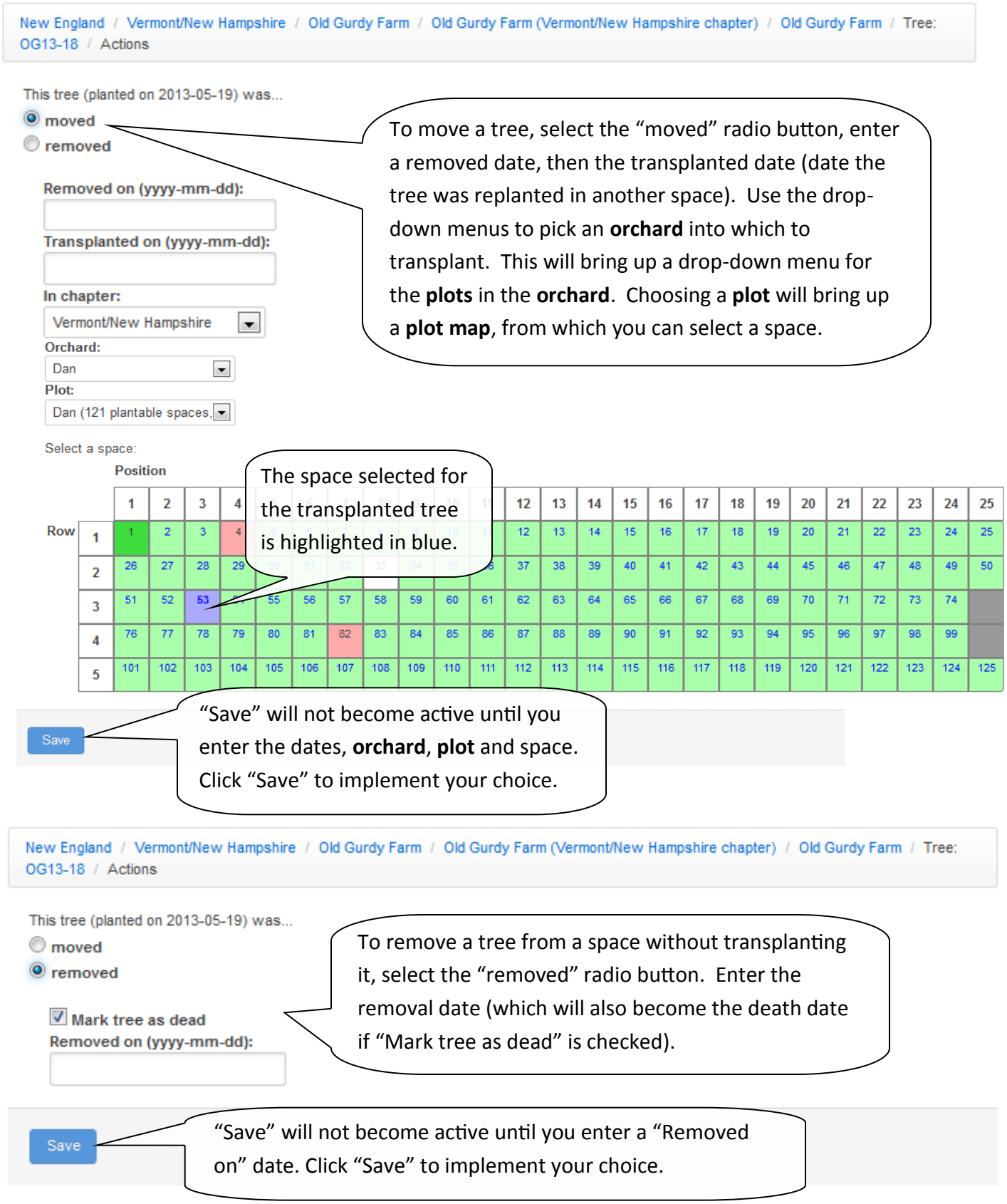


12. Trees - All Trees



12.1 Trees - Tree and Edit Tree

12.2 Trees - Move or Remove a Tree



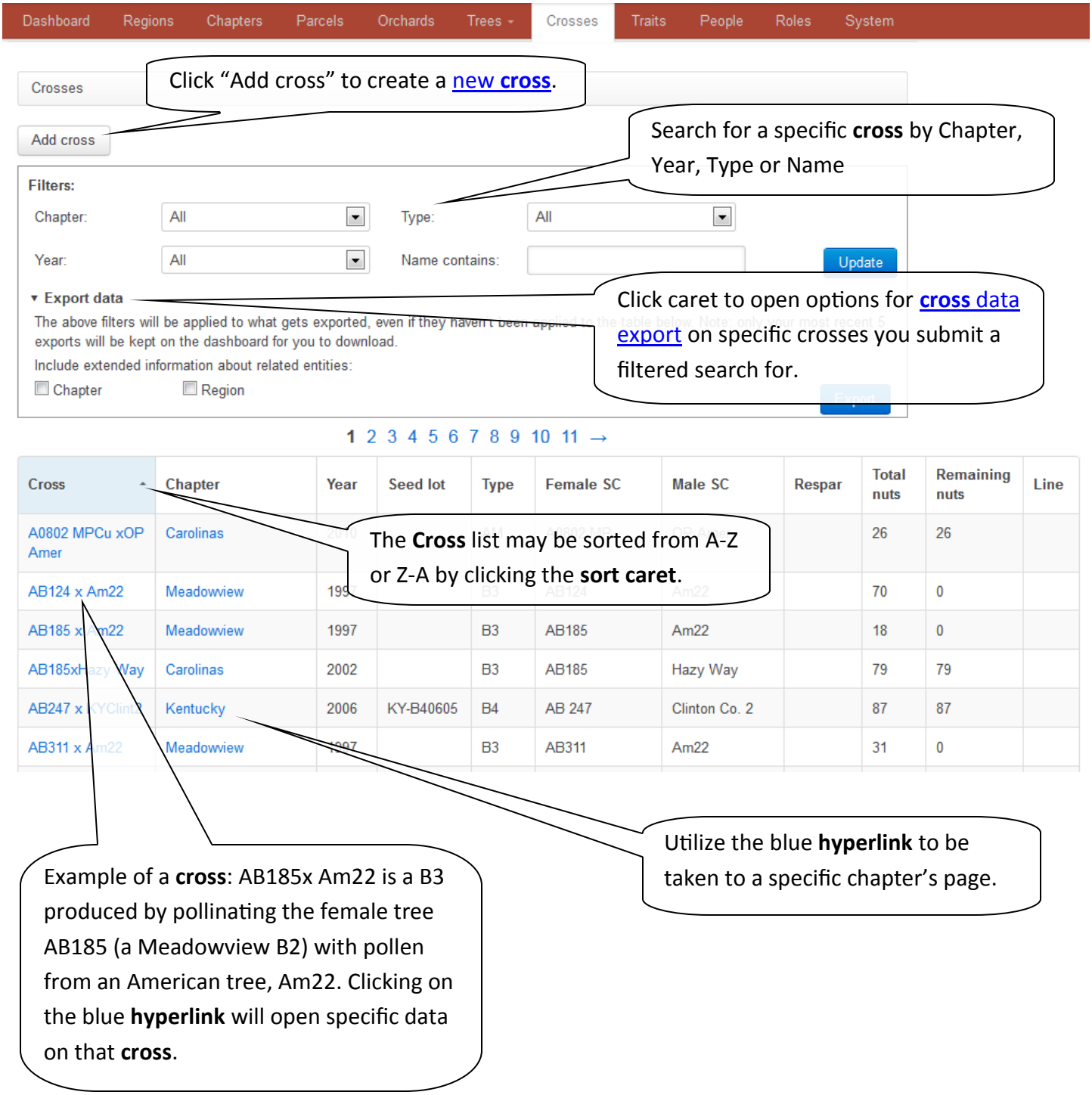
13. Trees - Wild Trees

Wild trees are going to be significantly changed very soon. Eventually, the page will look very much like our Tree Locator Form.

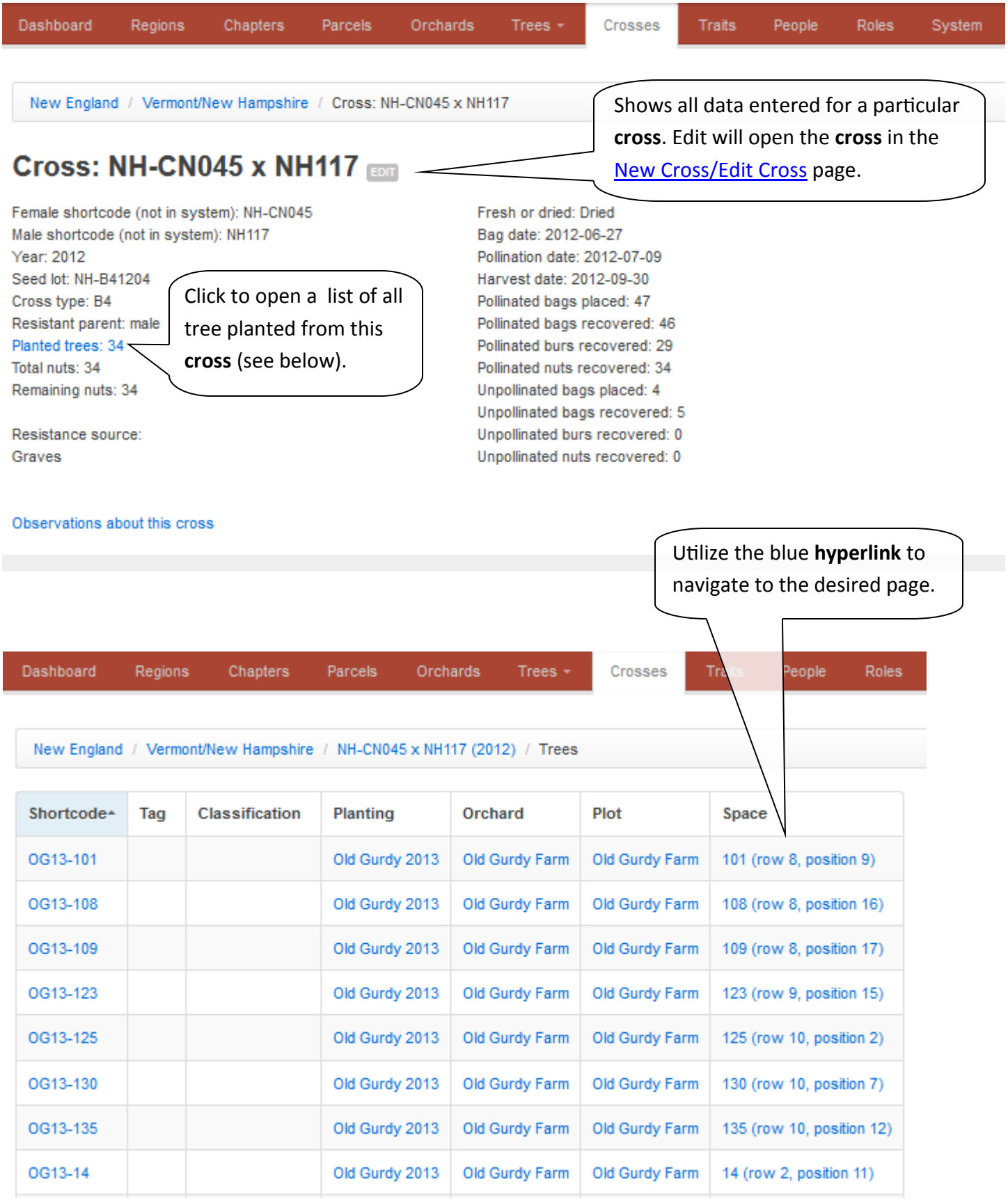
Until then, we recommend **not entering or uploading wild trees**. For any **CROSSES** that are uploaded, ensure that the name given to the parent tree in the **CROSS** will match to whatever name is given to the tree to be uploaded as a **Wild Tree**.

14. Crosses - Overview

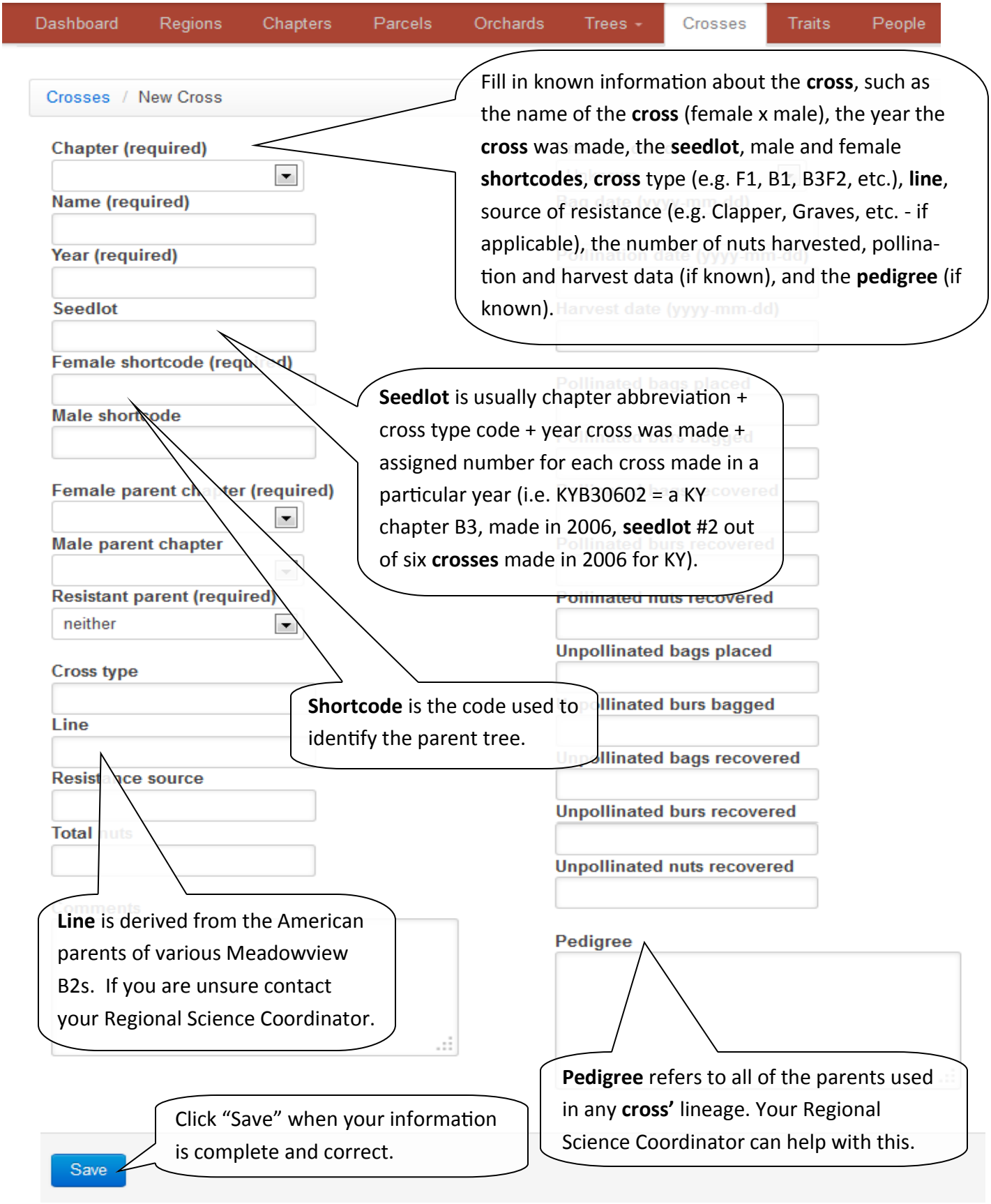
Crosses are defined as the progeny resulting from the crossing of two trees. The process of crossing involves open pollinations or controlled pollinations between a mother tree (producing burs) and a father tree (providing the pollen for the **cross**). **Crosses** can be F1s, B1s, B3F3s, pure Americans, etc. The **cross** is identified by the two parents used and the year the **cross** was made and requires listing the mother (female flower) times the father (pollen) - female x male.



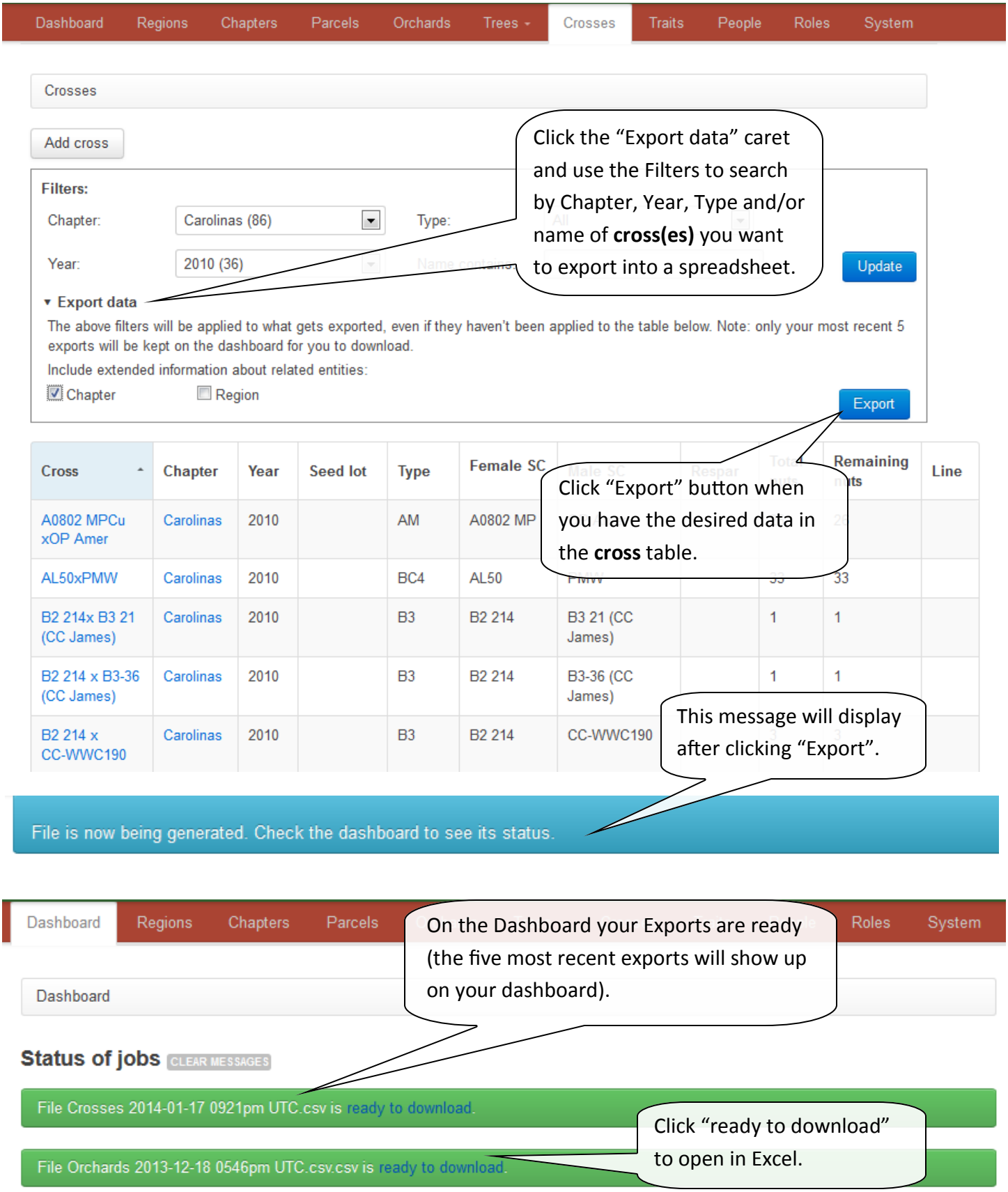
14.1 Crosses - Detail



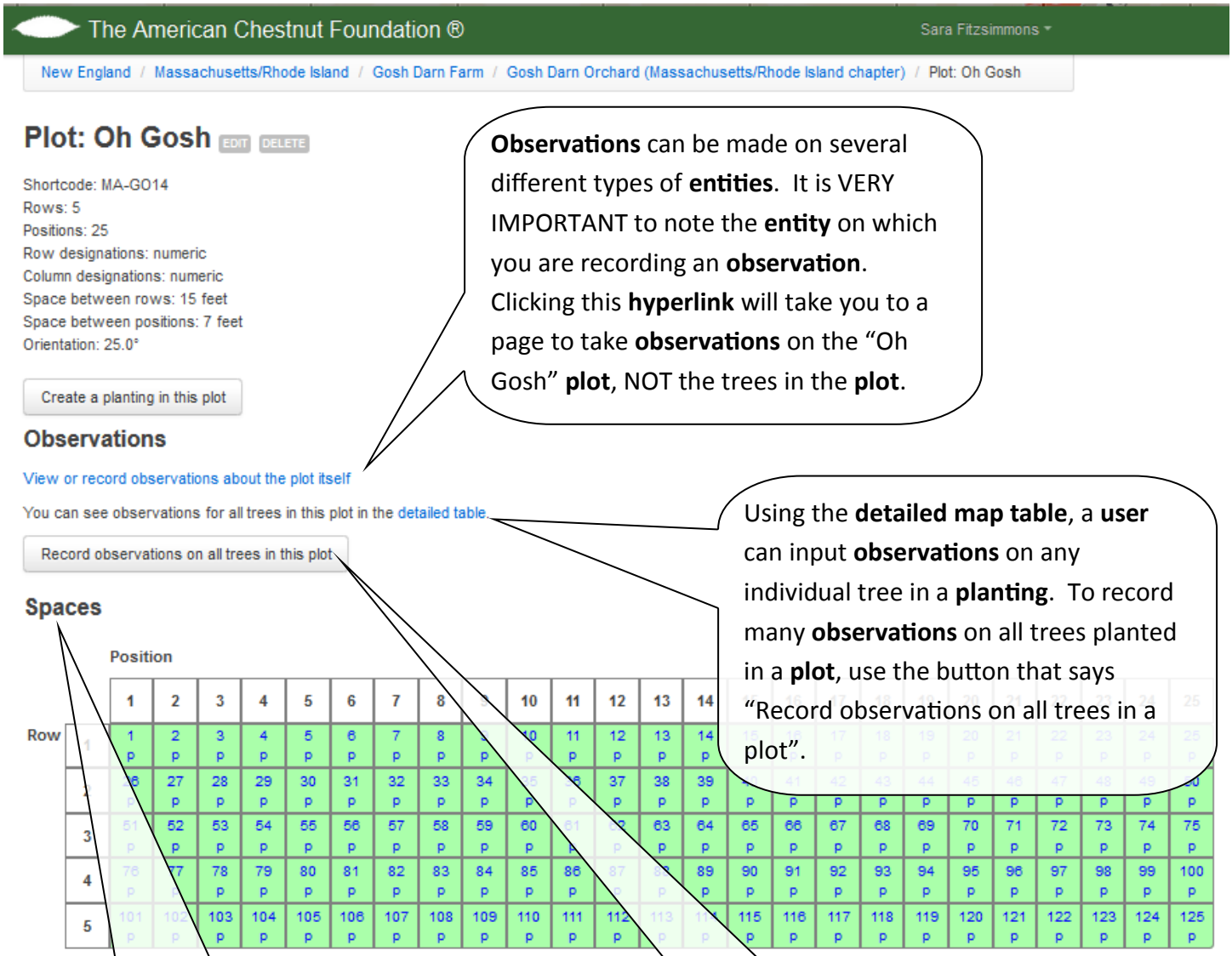
14.2 Crosses - Add or Edit Cross



14.3 Crosses - Export Cross Data



15. Observations - Overview



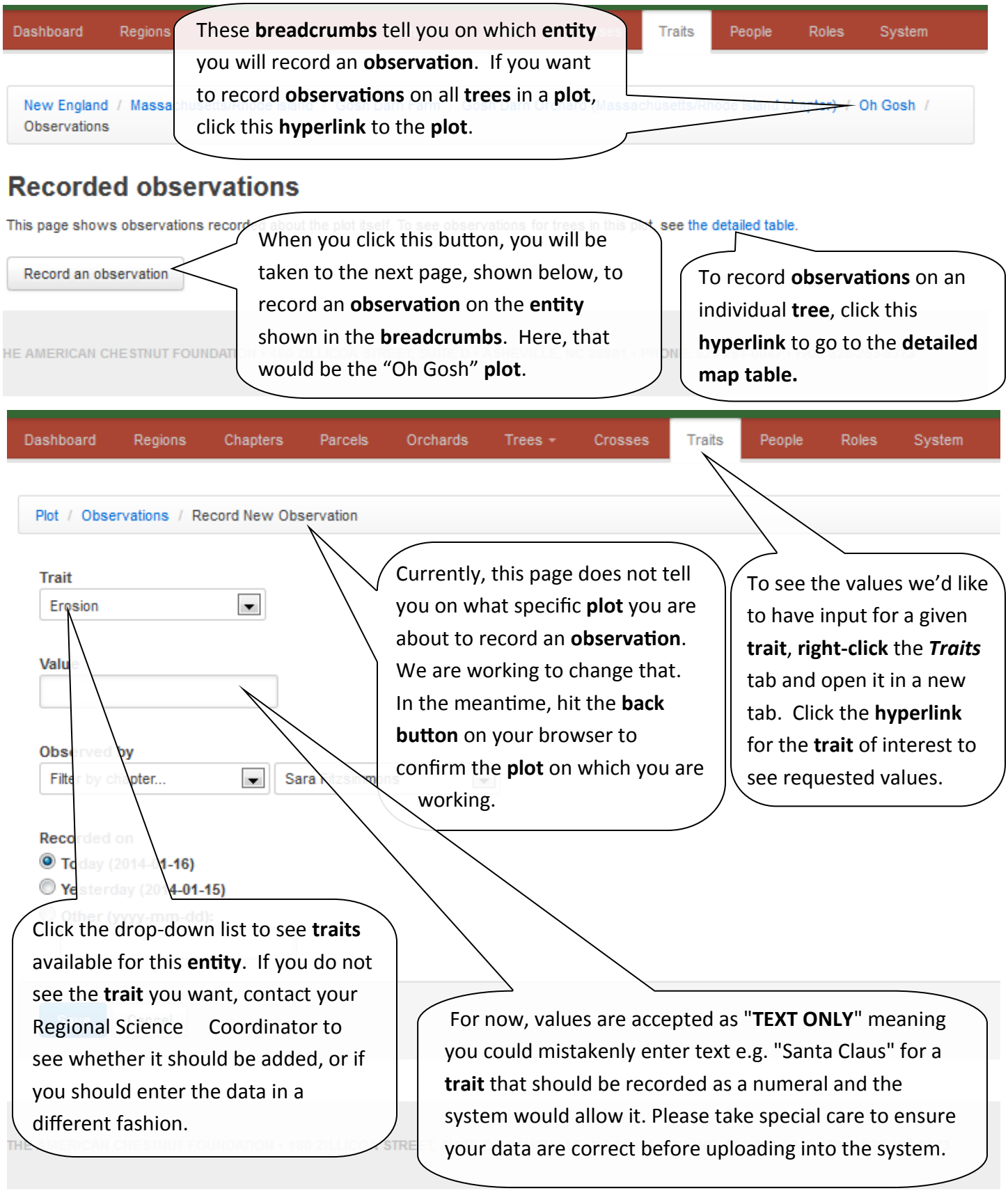
Observations can be made on several different types of **entities**. It is VERY IMPORTANT to note the **entity** on which you are recording an **observation**. Clicking this **hyperlink** will take you to a page to take **observations** on the "Oh Gosh" **plot**, NOT the trees in the **plot**.

Using the **detailed map table**, a **user** can input **observations** on any individual tree in a **planting**. To record many **observations** on all trees planted in a **plot**, use the button that says "Record observations on all trees in a plot".

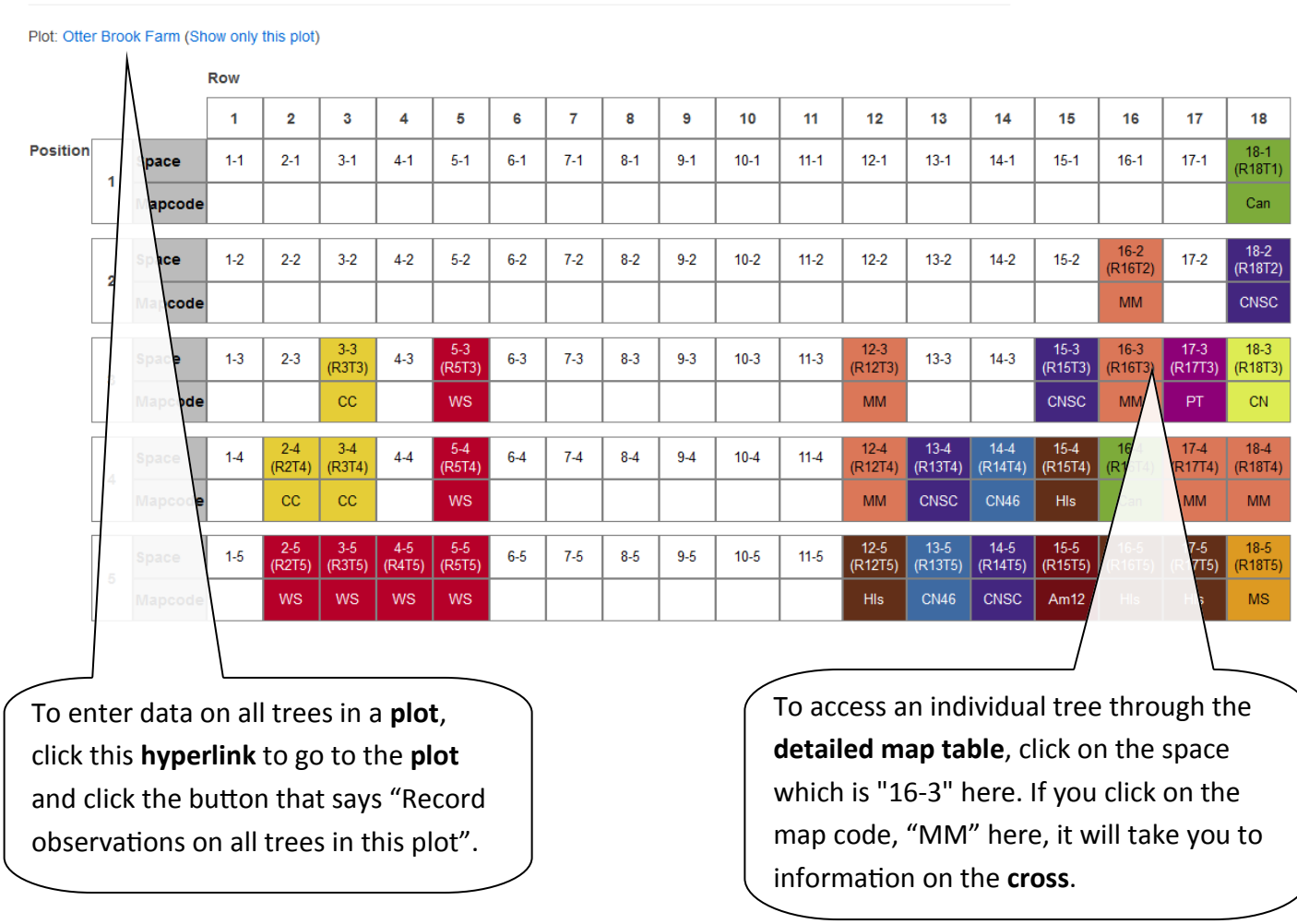
The **plot map** below displays all rows and positions that have been created for this **plot**. Click here to navigate to the section on creating **plots** and their associated **spaces**.

To record **observations** on all the trees in a **plot**, click this button to be taken to a page where you will generate a **CSV** worksheet of all trees currently planted in the **plot**. Note that this will show all trees, dead and alive, which have not been formally removed.

15.1 Observations - Record Observations



15.2 Observations - Using the Detailed Map Table



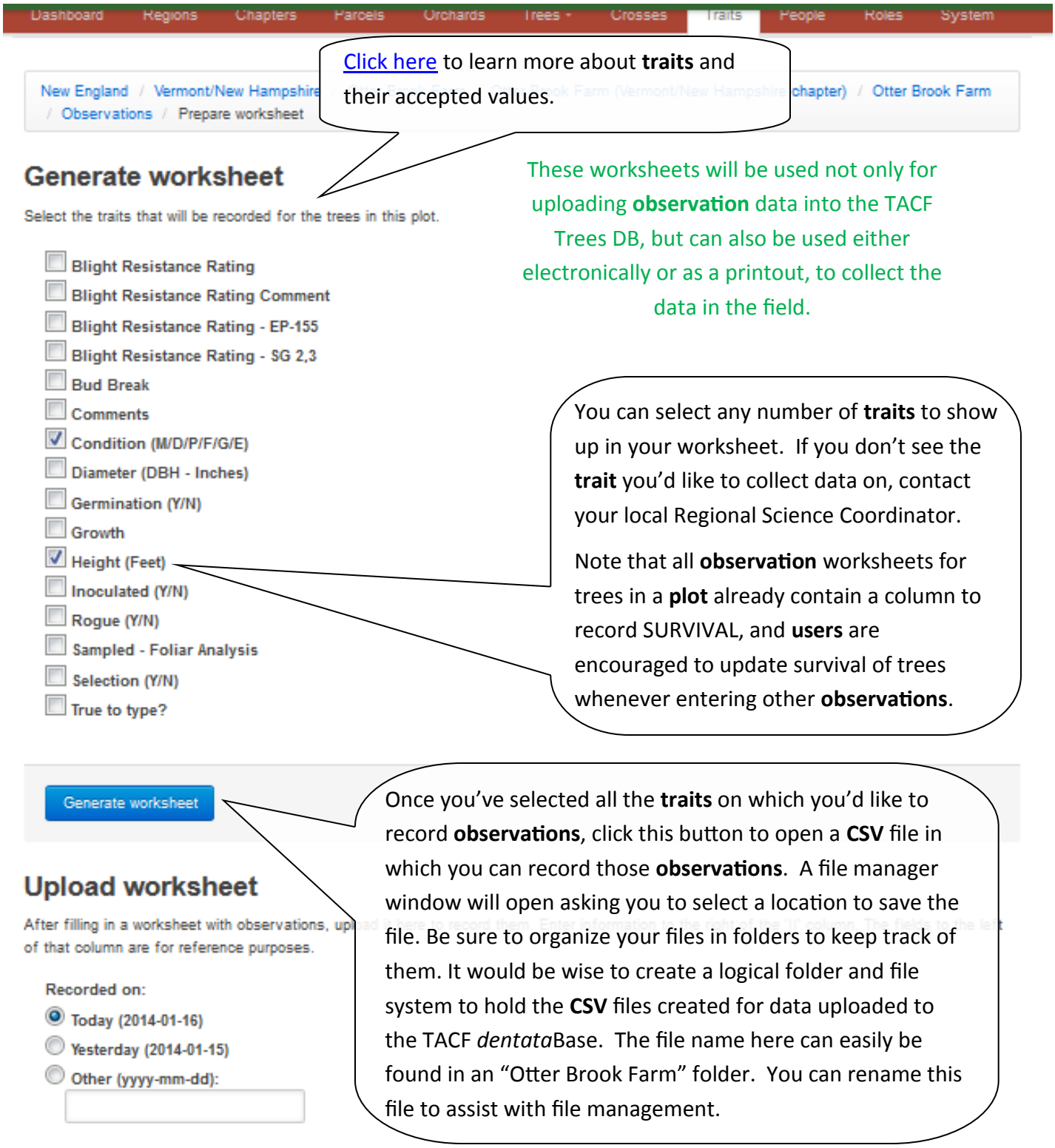
To enter data on all trees in a **plot**, click this **hyperlink** to go to the **plot** and click the button that says “Record observations on all trees in this plot”.

To access an individual tree through the **detailed map table**, click on the space which is "16-3" here. If you click on the map code, “MM” here, it will take you to information on the **cross**.

This page shows ALL the trees EVER planted in this **space**. Here, only one tree has been planted. Click on this tree to enter **observations** on this tree only.

Clicking this **hyperlink** will show you **observations** on this space, not the trees in this space. To see or record **observations** on a tree in this space, click the **hyperlinked** tree name.

15.3 Observations - Generating a Worksheet for Data Collection and/or Entry



Click here to learn more about **traits** and their accepted values.

These worksheets will be used not only for uploading **observation** data into the TACF Trees DB, but can also be used either electronically or as a printout, to collect the data in the field.

You can select any number of **traits** to show up in your worksheet. If you don't see the **trait** you'd like to collect data on, contact your local Regional Science Coordinator.

Note that all **observation** worksheets for trees in a **plot** already contain a column to record SURVIVAL, and **users** are encouraged to update survival of trees whenever entering other **observations**.

Once you've selected all the **traits** on which you'd like to record **observations**, click this button to open a **CSV** file in which you can record those **observations**. A file manager window will open asking you to select a location to save the file. Be sure to organize your files in folders to keep track of them. It would be wise to create a logical folder and file system to hold the **CSV** files created for data uploaded to the TACF *dentata*Base. The file name here can easily be found in an "Otter Brook Farm" folder. You can rename this file to assist with file management.

15.4 Observations - Data Entry CSV

DO NOT edit any data to the left of the "||" column. The data on the left side of the "||" column are used by the system to match up the current data to the new data you are entering. They must not be edited.

To the right of the "||" column are the **traits** you selected to generate the worksheet, followed by an automatically included column for SURVIVAL.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Plot name	Space ID (	Space labe	Row	Position	Tree ID (ir	Tree name	Cross nam	Cross year	||	Condition (M/D/P/F/G/E)	Height (Feet)	Tree alive/dead	
2	Otter Brook Farm	5697	R1T8	1	8	5686	VT_OB10-	NH-WS02(	2010	||	E	3.5	alive	
3	Otter Brook Farm	5715	R1T9	1	9	5685	VT_OB10-	NH-WS02(	2010	||	E	4.2	alive	
4	Otter Brook Farm	5733	R1T10	1	10	5702	VT_OB10-	VT-EX022	2010	||	E	6.5	alive	
5	Otter Brook Farm	5751	R1T11	1	11	5684	VT_OB10-	NH-WS02(	2010	||	G	3.5	alive	
6	Otter Brook Farm	5769	R1T12	1	12	5683	VT_OB10-	NH-WS02(	2010	||	G	3.7	alive	
7	Otter Brook Farm	5787	R1T13	1	13	5682	VT_OB10-	NH-WS02(	2010	||	G	2.5	alive	
8	Otter Brook Farm	5805	R1T14	1	14	5681	VT_OB10-	NH-WS02(	2010	||	F	9.8	alive	
9	Otter Brook Farm	5823	R1T15	1	15	5680	VT_OB10-	NH-WS02(	2010	||	F	4	alive	
10	Otter Brook Farm	5841	R1T16	1	16	5696	VT_OB10-	VT-EX022	2010	||	E	5	alive	
11	Otter Brook Farm	5859	R1T17	1	17	5679	VT_OB10-	NH-WS02(	2010	||	D	2.4	alive	
12	Otter Brook Farm	5877	R1T18	1	18	5678	VT_OB10-	NH-WS02(	2010	||	D	10039	alive	
13	Otter Brook Farm	5895	R1T19	1	19	5577	VT_OB10-	NH-WS02(	2009	||	D	5.8	alive	
14	Otter Brook Farm	5626	R2T4	2	4	5450	VT_OB10-	VT-CC006	2008	||	M	Santa Claus	dead	
15	Otter Brook Farm	5644	R2T5	2	5	5677	VT_OB10-	NH-WS02(	2010	||	M		dead	
16	Otter Brook Farm	5662	R2T6	2	6	5676	VT_OB10-	NH-WS02(	2010	||	M		dead	
17	Otter Brook Farm	5680	R2T7	2	7	5574	VT_OB10-	NH-WS02(	2009	||	P	6.7	alive	
18	Otter Brook Farm	5698	R2T8	2	8	5446	VT_OB10-	VT-CC006	2008	||	F	8.4	alive	
19	Otter Brook Farm	5716	R2T9	2	9	5445	VT_OB10-	VT-CC006	2008	||	G	9	alive	
20	Otter Brook Farm	5734	R2T10	2	10	5444	VT_OB10-	VT-CC006	2008	||	E	5.4	alive	
21	Otter Brook Farm	5752	R2T11	2	11	5675	VT_OB10-	NH-WS02(	2010	||	G	3.5	alive	
22	Otter Brook Farm	5770	R2T12	2	12	5701	VT_OB10-	VT-EX022	2010	||	E	6.7	alive	
23	Otter Brook Farm	5788	R2T13	2	13	5441	VT_OB10-	VT-CC006	2008	||	E	1.5	alive	
24	Otter Brook Farm	5806	R2T14	2	14	5674	VT_OB10-	NH-WS02(	2010	||	E	2.4	alive	
25	Otter Brook Farm	5824	R2T15	2	15	5673	VT_OB10-	NH-WS02(	2010	||	E	8.5	alive	
26	Otter Brook Farm	5842	R2T16	2	16	5672	VT_OB10-	NH-WS02(	2010	||	E	8.9	alive	
27	Otter Brook Farm	5860	R2T17	2	17	5671	VT_OB10-	NH-WS02(	2010	||	M		dead	
28	Otter Brook Farm	5878	R2T18	2	18	5695	VT_OB10-	VT-EX022	2010	||	M		dead	
29	Otter Brook Farm	5896	R2T19	2	19	5670	VT_OB10-	NH-WS02(	2010	||	E	10.3	alive	

plots-14-worksheet

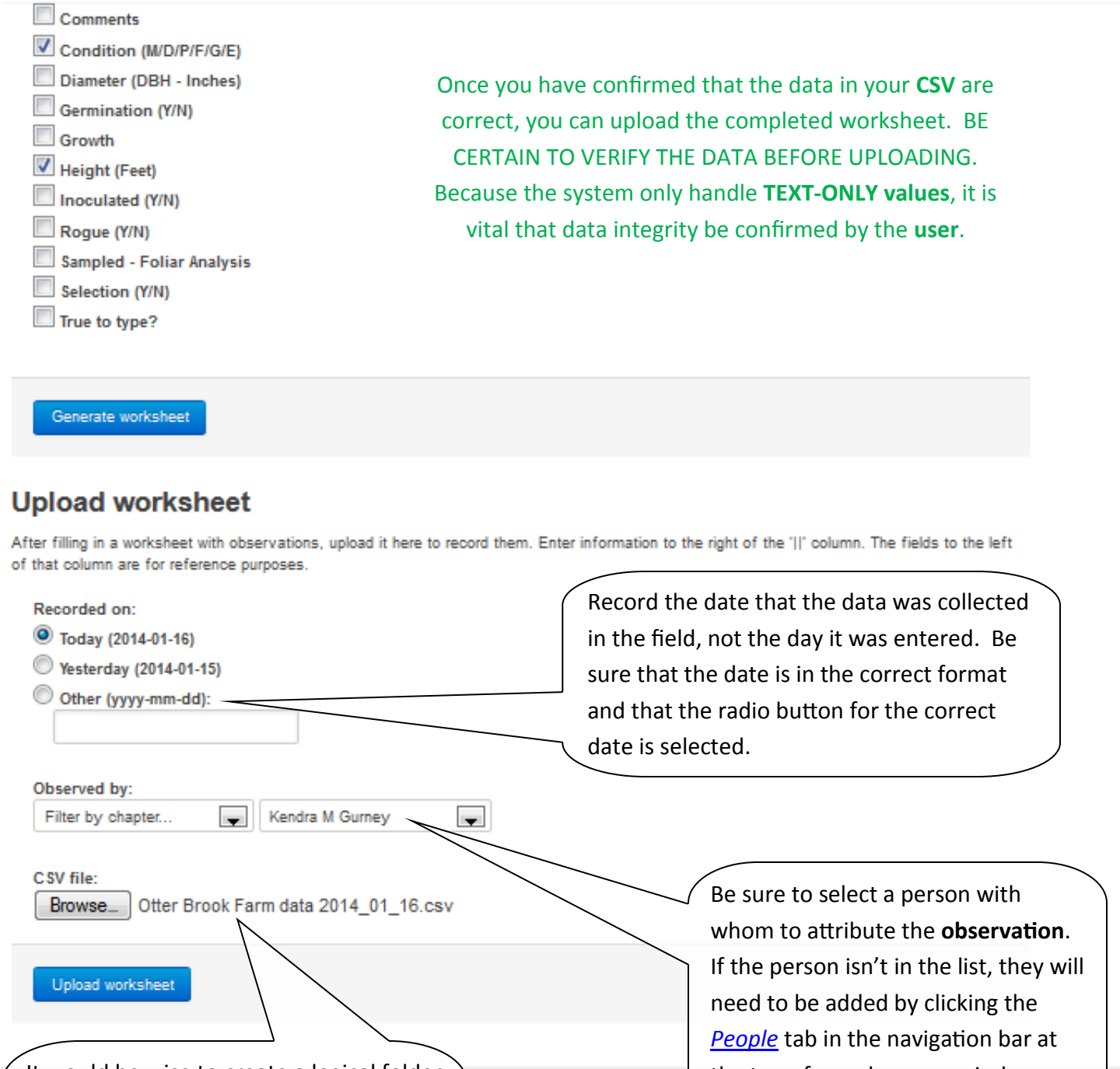
Once you have completed filling out the data for the **observations**, be sure to re-save to update the file before uploading.

Then, in the TACF *dentata*Base, navigate to the **plot** and click on the button to "Record observations on all trees in this plot". Scroll to the "Upload Worksheet" section of the page.

Note that it can be easy to make mistakes in data entry. There are currently no data controls in place and these two rather ludicrous values will be accepted by the system. Be sure to double-check your data BEFORE uploading in to the system. A good trick is to sort each column of data before entering to see if there are any outliers.

It is easy to edit values for one tree once uploaded, but it is not so easy to edit multiple values at this time. Be extra sure that the correct values are assigned to the correct trees.

15.5 Observations - Uploading Observations



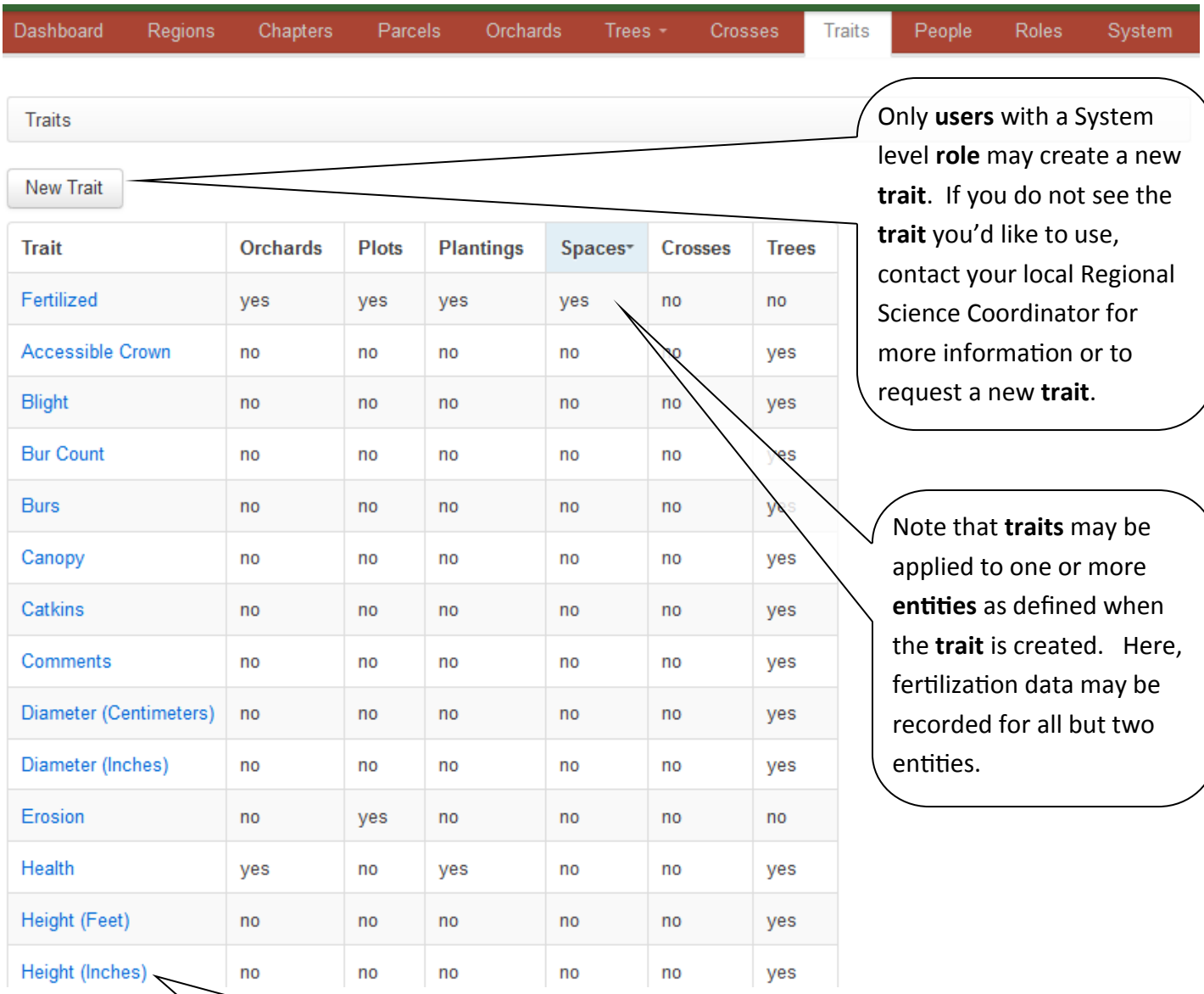
Once you have confirmed that the data in your **CSV** are correct, you can upload the completed worksheet. BE CERTAIN TO VERIFY THE DATA BEFORE UPLOADING. Because the system only handle **TEXT-ONLY values**, it is vital that data integrity be confirmed by the **user**.

Record the date that the data was collected in the field, not the day it was entered. Be sure that the date is in the correct format and that the radio button for the correct date is selected.

Be sure to select a person with whom to attribute the **observation**. If the person isn't in the list, they will need to be added by clicking the *People* tab in the navigation bar at the top of your browser window.

It would be wise to create a logical folder and file system to hold the **CSV** files created for data uploaded to the TACF *dentata*Base. The file name here can easily be found in an "Otter Brook Farm" folder.

16. Traits - Overview

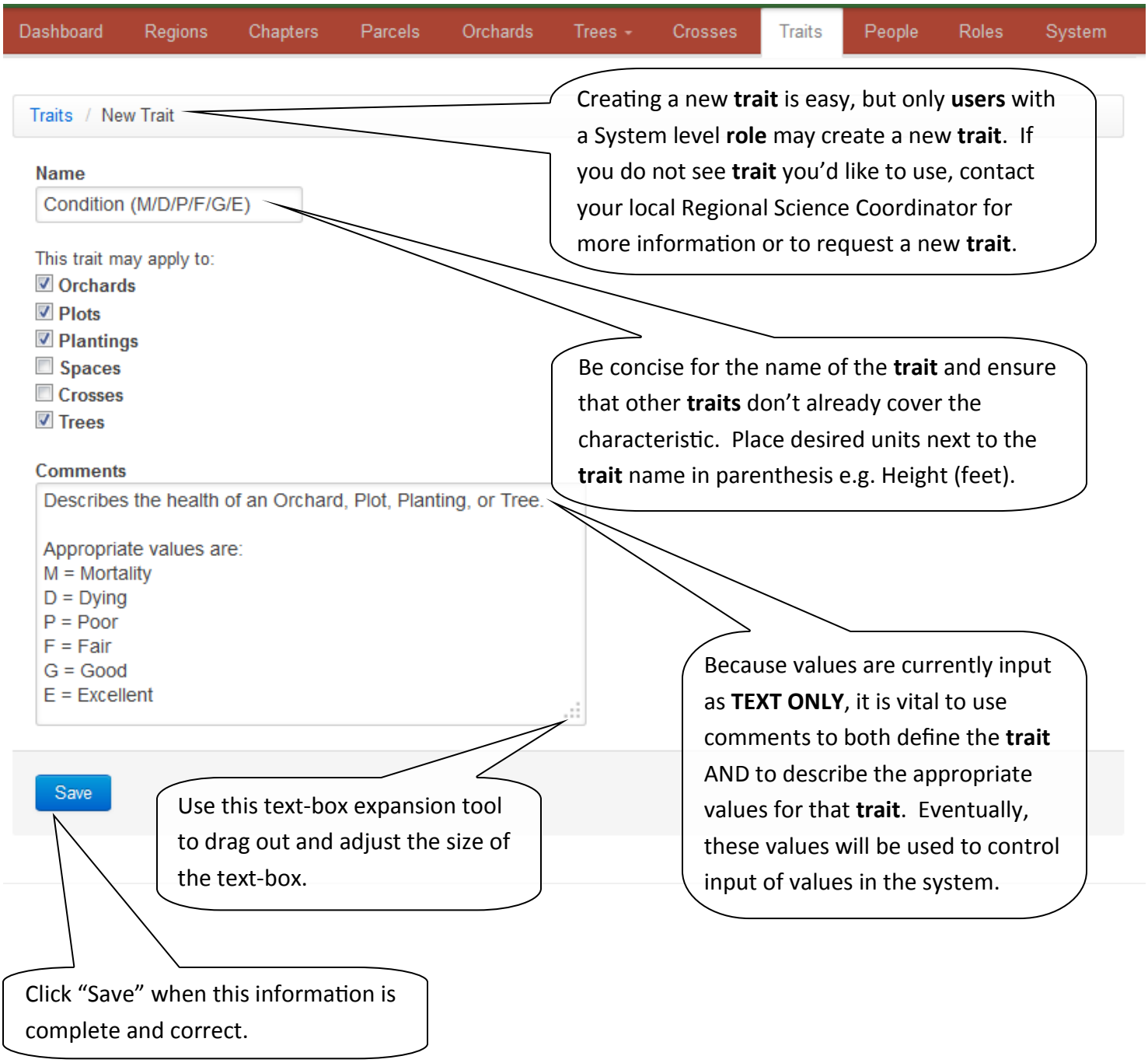


Only **users** with a System level **role** may create a new **trait**. If you do not see the **trait** you'd like to use, contact your local Regional Science Coordinator for more information or to request a new **trait**.

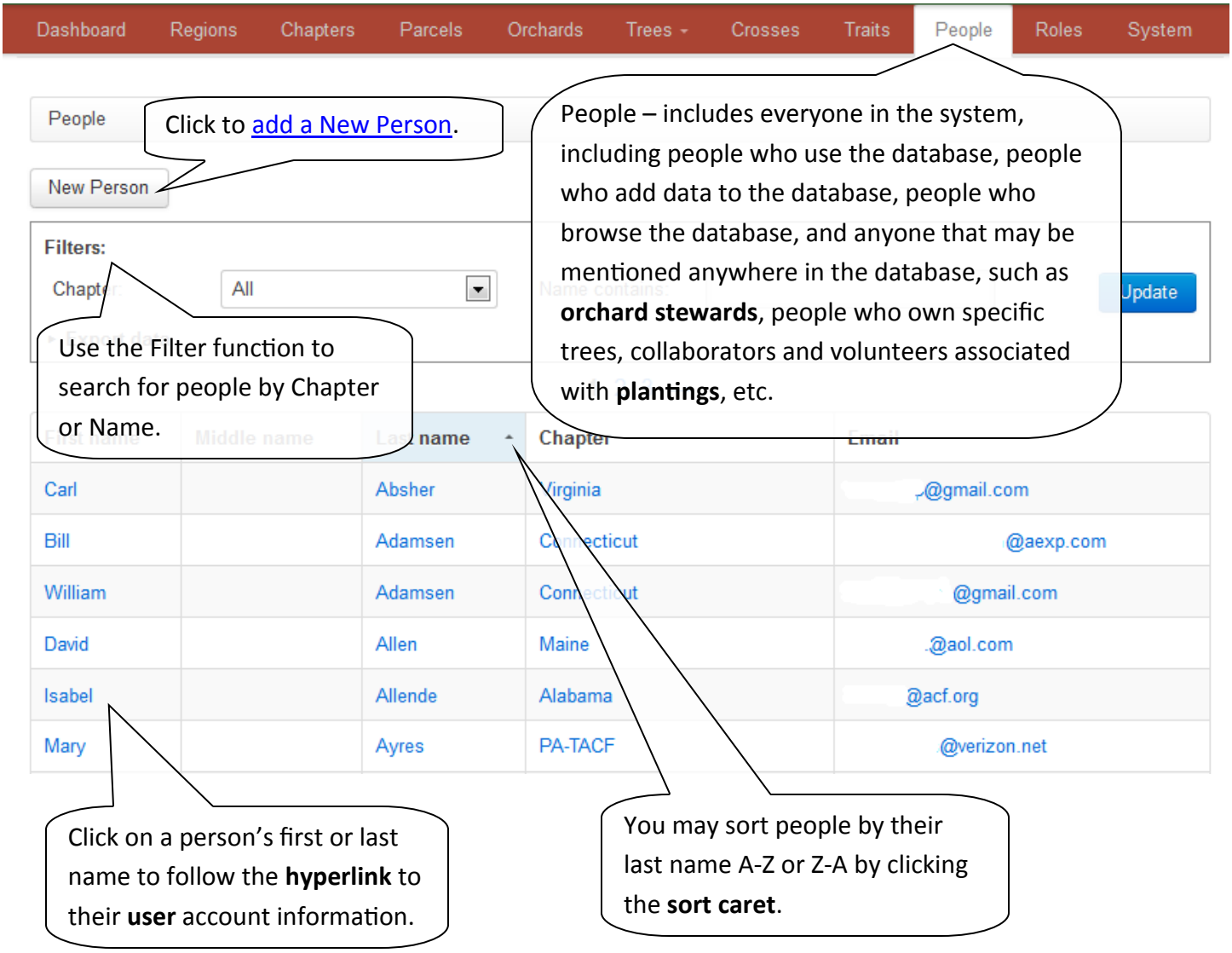
Note that **traits** may be applied to one or more **entities** as defined when the **trait** is created. Here, fertilization data may be recorded for all but two entities.

As more funds are raised for development, we hope to create tools such as conversions for data collected in different units. Until that time, be sure to either collect data in preferred units, or convert the data prior to entering into the TACF Trees DB. Often the preferred unit is listed in parenthesis beside the **trait** name here and within generated worksheets.

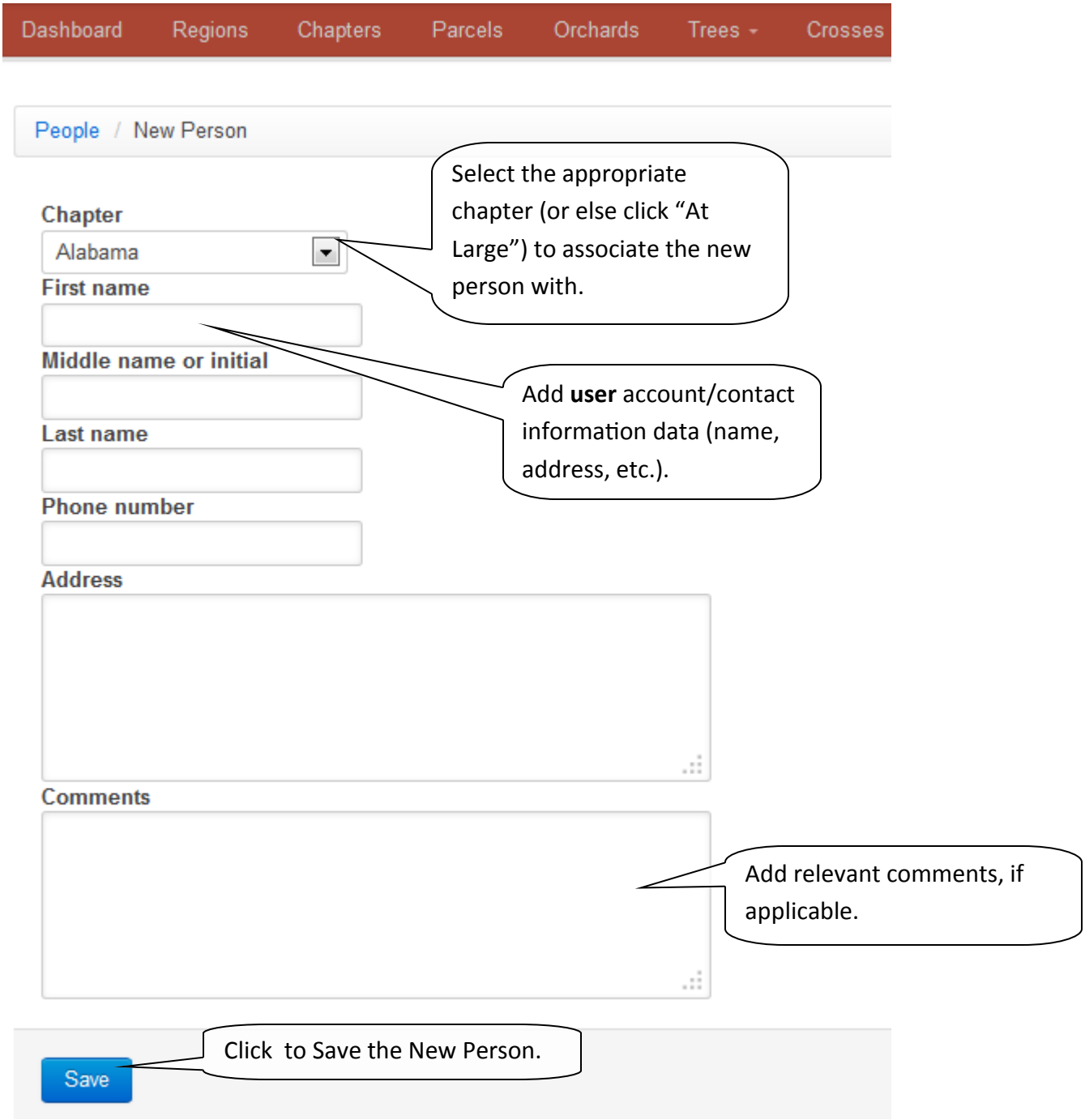
16.1 Traits - Add New or Edit Trait



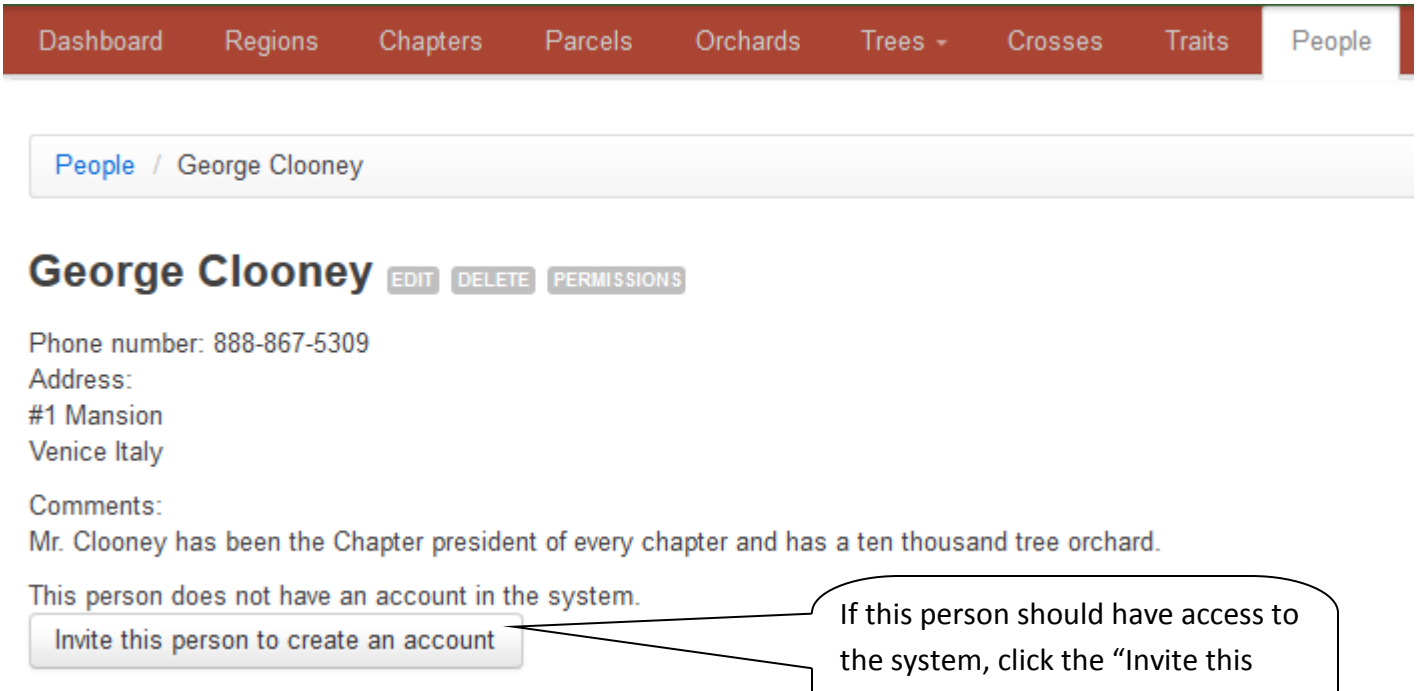
17. People - Overview

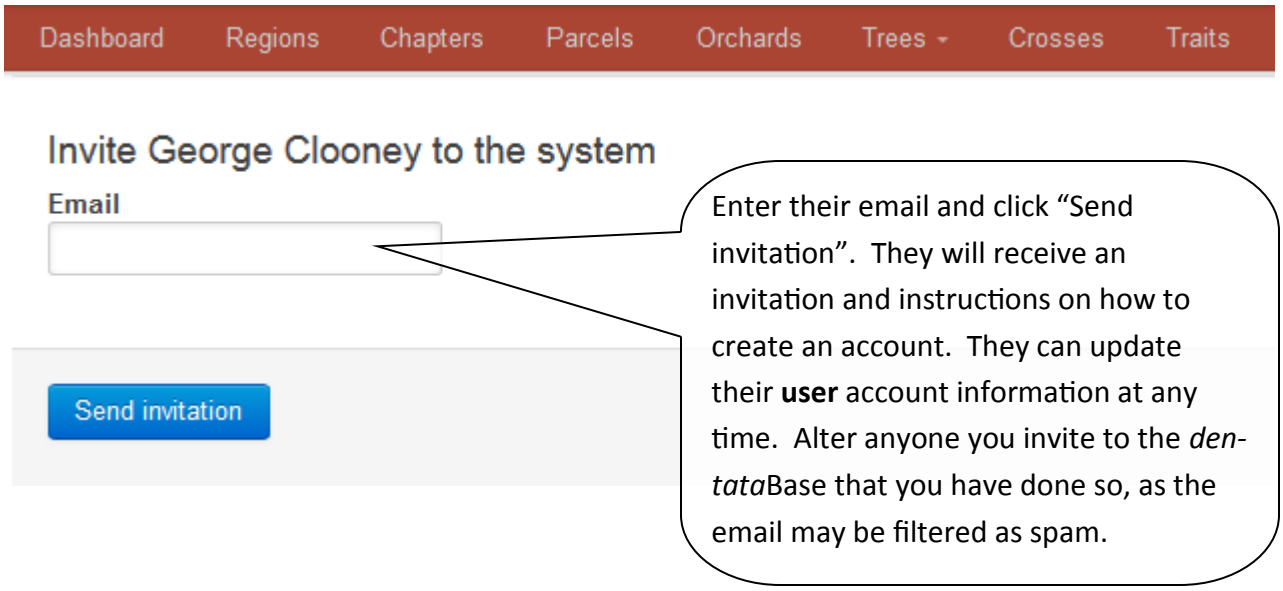


17.1 People - Add New or Edit Person



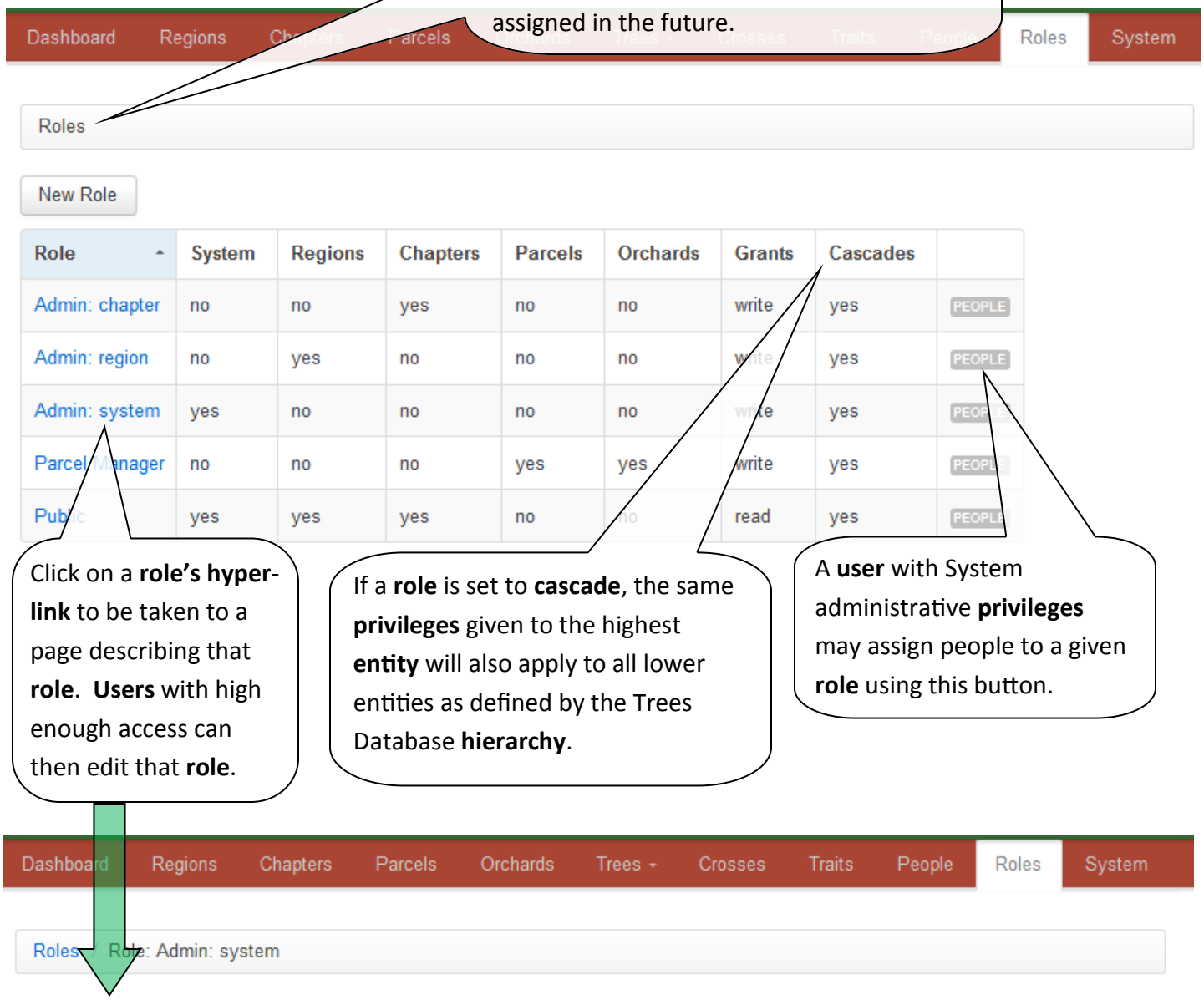
17.2 People - Invite Person to Create an Account





18. Roles - Overview

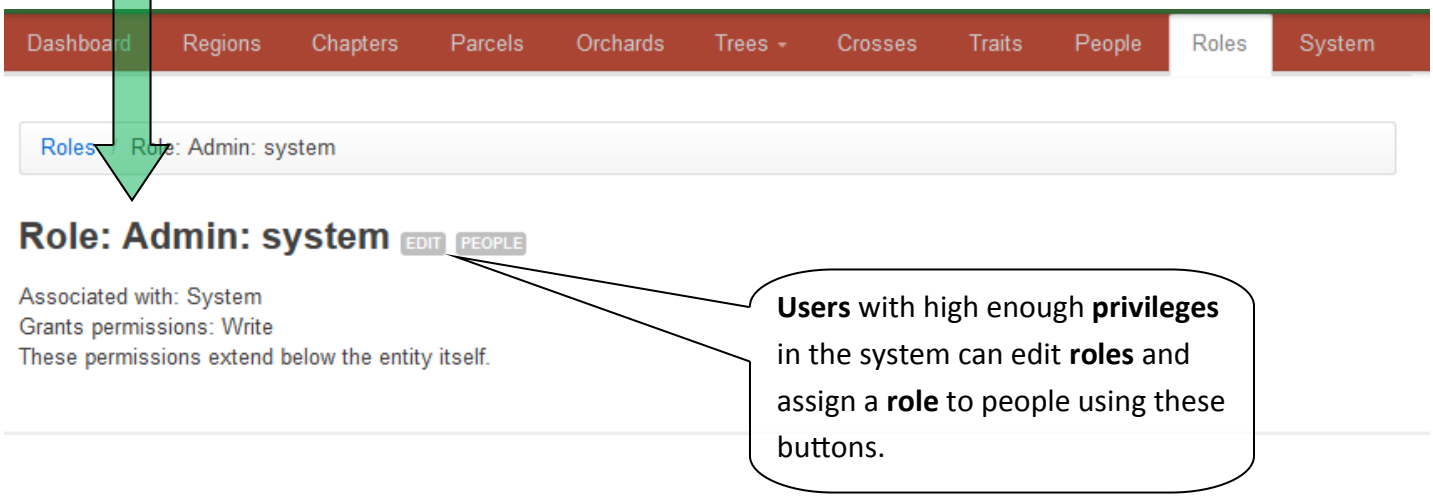
A **role** defines the access **privileges** a **user** has to the TACF *dentata*Base system. Currently, **roles** may be assigned to one or more **entities**. Additional entities may be assigned in the future.



Click on a **role's hyperlink** to be taken to a page describing that **role**. **Users** with high enough access can then edit that **role**.

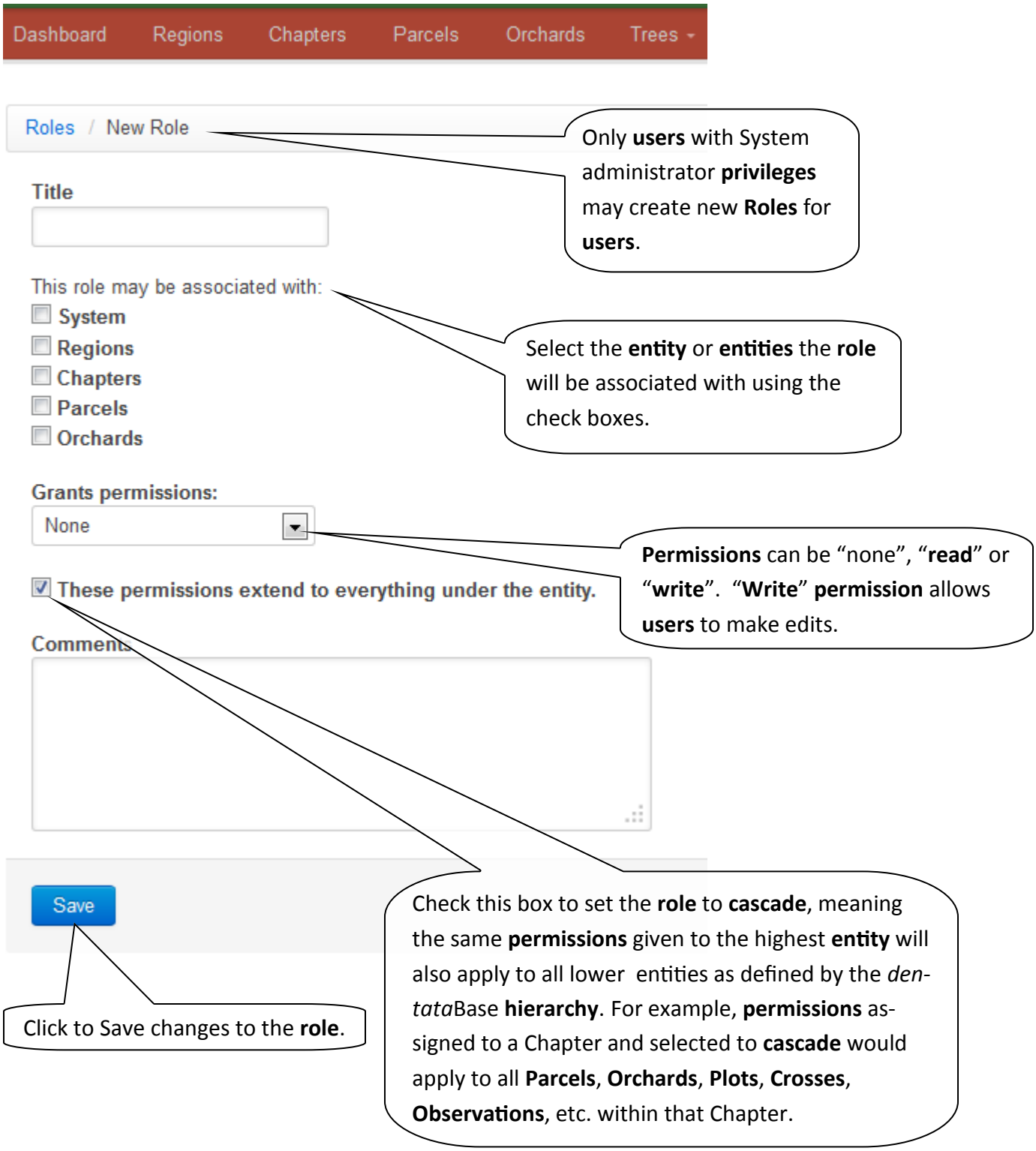
If a **role** is set to **cascade**, the same **privileges** given to the highest **entity** will also apply to all lower entities as defined by the Trees Database **hierarchy**.

A **user** with System administrative **privileges** may assign people to a given **role** using this button.

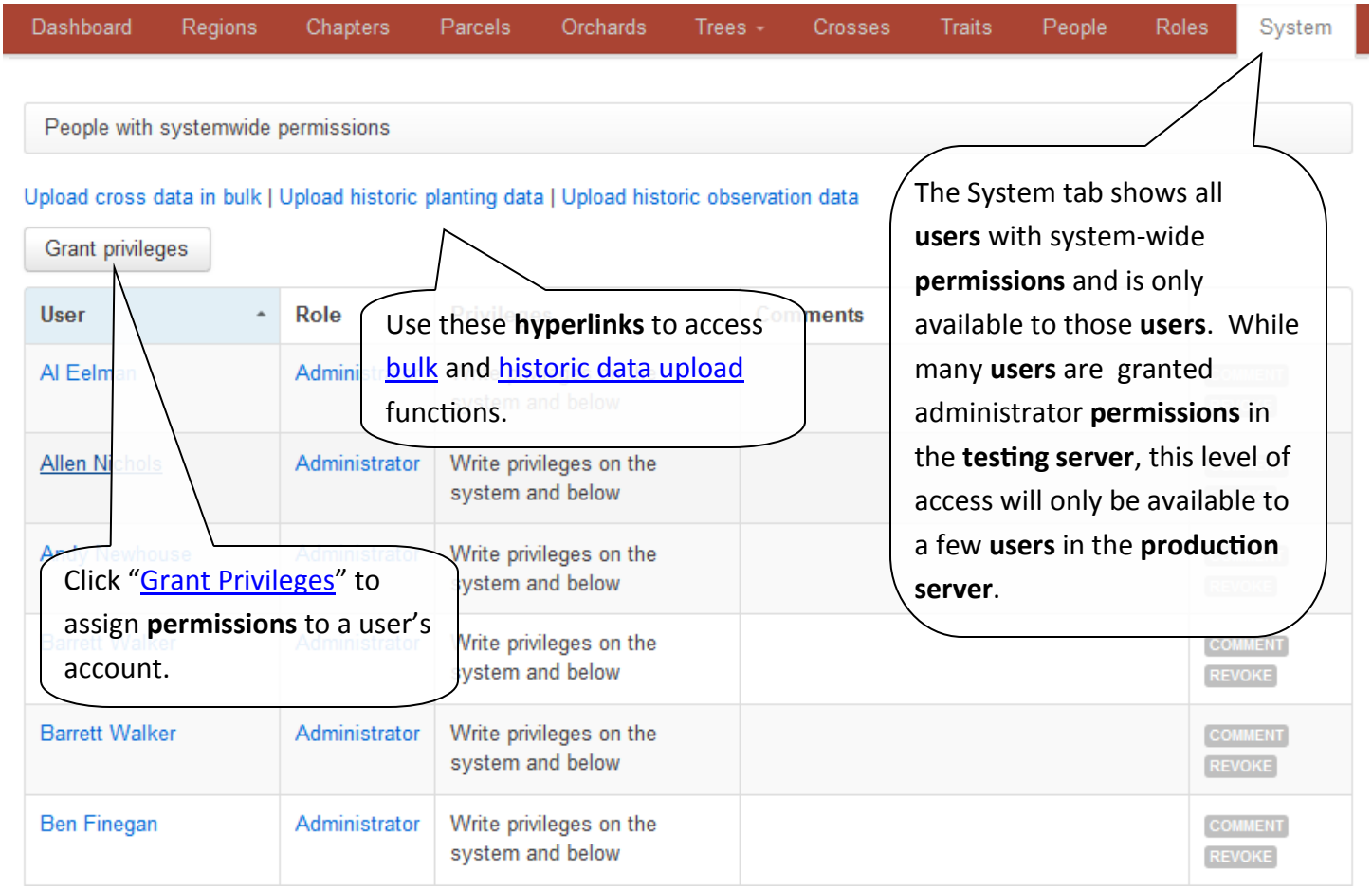


Users with high enough **privileges** in the system can edit **roles** and assign a **role** to people using these buttons.

18.1 Roles - Add New or Edit Role

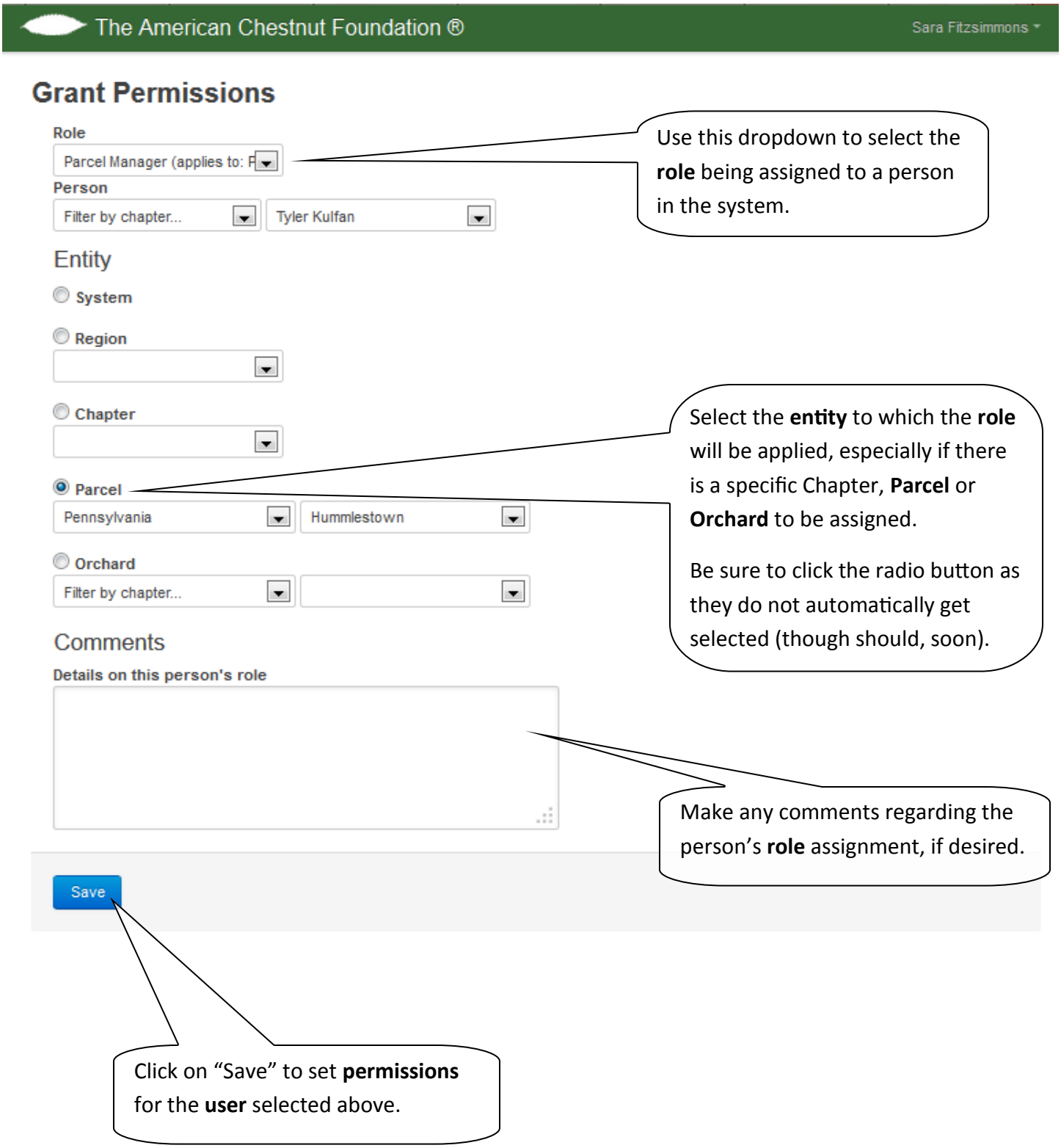


19. System - Overview

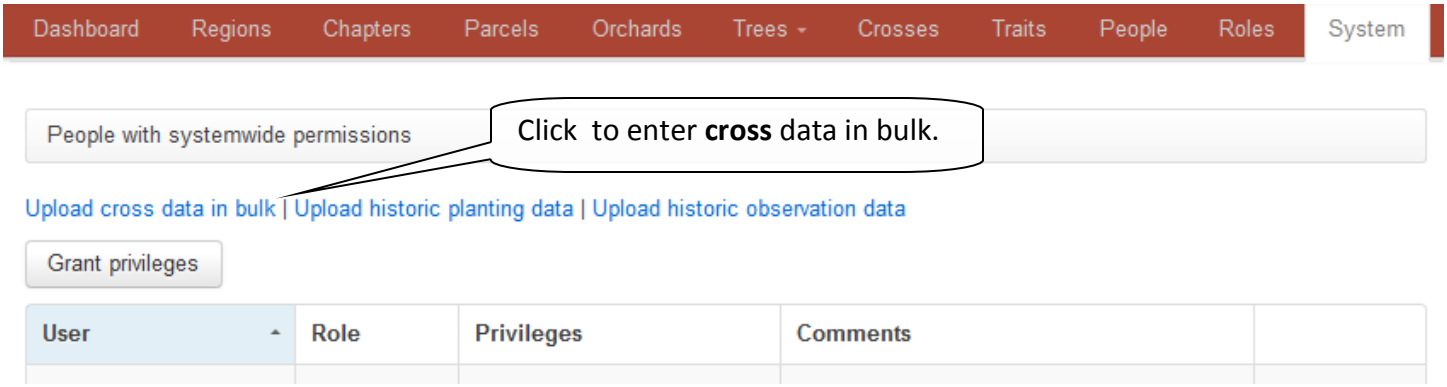


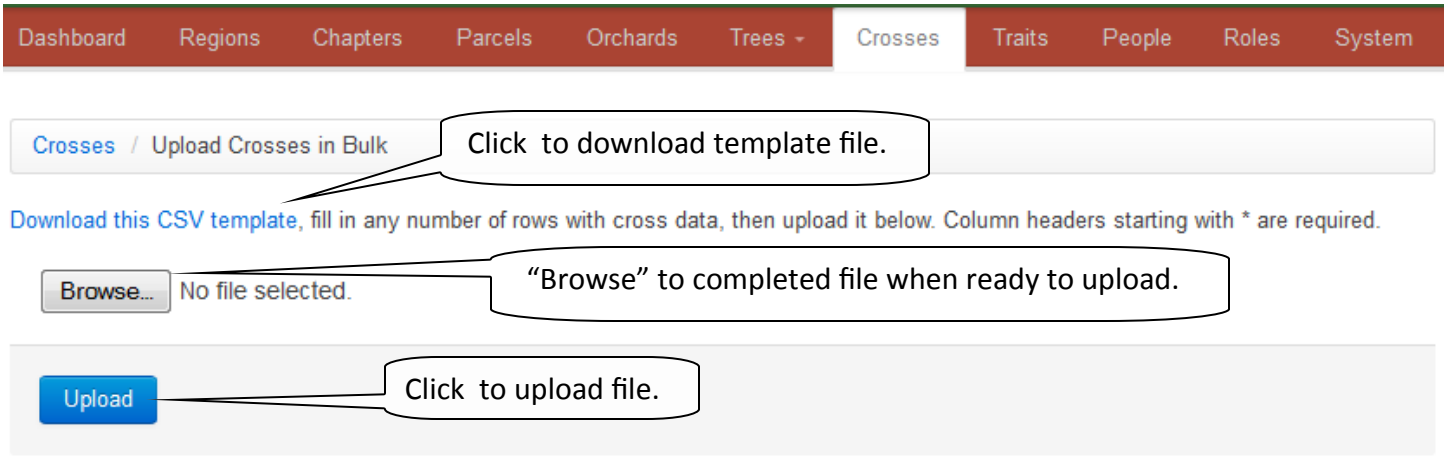
Access to the bulk and historic data upload is currently restricted to **users** with systemwide **permissions**. Most **users** will not have this level of access. If you need to use these bulk or historic templates but do not have access through your **user role**, contact your Regional Science Coordinator. Your RSC can send you the appropriate template and then upload it for you after it has been completed and checked for errors.

19.1 System - Grant Permissions



19.2 System - Upload Cross Data in Bulk





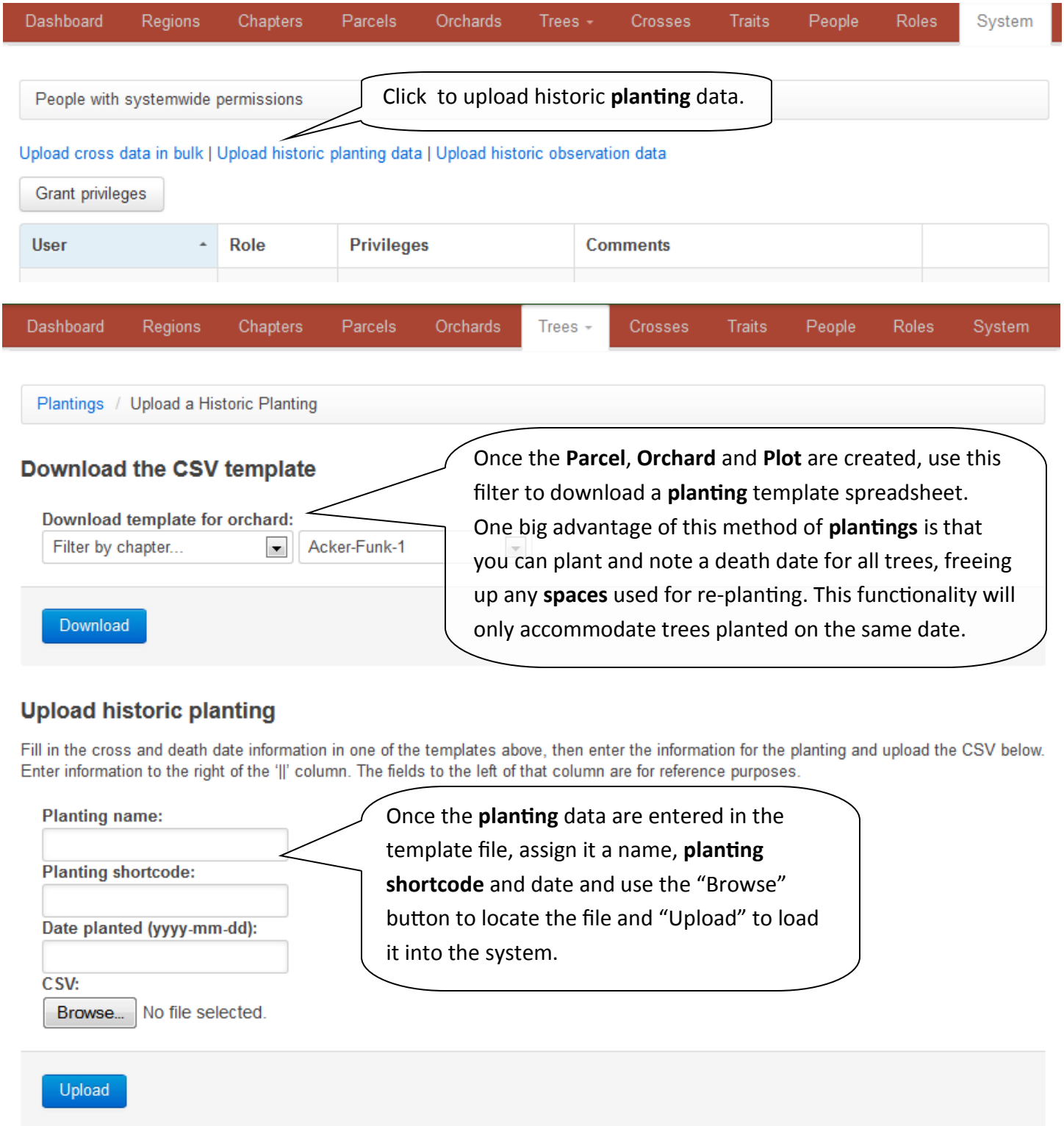
	A	B	C	D	E	F	G	H	I	J
1	*Cross name	*Year	*Chapter name	*Female parent's shortcode	Female parent's chapter (same as cross's chapter by default)	Male parent's shortcode (or 'OP' for open pollination)	Male parent's chapter (if applicable, same as cross's chapter by default)	*Resistant parent (female, male, neither, or both)	Line	Resistance source
2	VT-SB001 x AB247	2004	Vermont/New Hampshire	VT-SB001	Vermont/New Hampshire	AB247	Meadowview	male		Graves
3	VT-WD002 x AB419	2004	Vermont/New Hampshire	VT-WD002	Vermont/New Hampshire	AB419	Meadowview	male		Graves
4	VT-WD002 x BG531	2005	Vermont/New Hampshire	VT-WD002	Vermont/New Hampshire	BG531	Meadowview	male	PaulGalloway	Graves
5	VT-BL003 x AB419	2005	Vermont/New Hampshire	VT-BL003	Vermont/New Hampshire	AB419	Meadowview	male		Graves
6	VT-CC004 x AB248	2005	Vermont/New Hampshire	VT-CC004	Vermont/New Hampshire	AB248	Meadowview	male		Graves
7	VT-WD002 x AB419	2006	Vermont/New Hampshire	VT-WD002	Vermont/New Hampshire	AB419	Meadowview	male		Graves
8	VT-CC004 x AL50	2006	Vermont/New Hampshire	VT-CC004	Vermont/New Hampshire	AL50	Meadowview	male	BH2T2G	Graves
9	VT-BL003 x DV189	2006	Vermont/New Hampshire	VT-BL003	Vermont/New Hampshire	DV189	Meadowview	male	HBW1G	Graves
10	NH-FT001 x SC444	2007	Vermont/New Hampshire	NH-FT001	Vermont/New Hampshire	SC444	Meadowview	male	BH2Tr1G	Graves

	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	Seed lot	Cross type	Total nuts	Fresh or dried (leave blank for unknown)	Bag date (yyyy-mm-dd)	Pollination date (yyyy-mm-dd)	Harvest date (yyyy-mm-dd)	Pollinated bags placed	Pollinated burs bagged	Pollinated bags recovered	Pollinated burs recovered	Pollinated nuts recovered	Unpollinated bags placed	Unpollinated burs bagged	Unpollinated bags recovered
2	VT-B30401	B3	198	dried								198			
3	VT-B30402	B3	28	dried								28			
4	VT-B40501	B4	20	dried								20			
5	VT-B30501	B3	1	dried		6/27/2005						1			
6	VT-B30502	B3	12	dried								12			
7	VT-B30601	B3	16	dried		7/19/2006	10/2/2006	96		96	528	16	10		10
8	VT-B40601	B4	38	dried	7/11/2006	7/17/2006	10/2/2006	32		32	33	38	22		
9	VT-B40602	B4	127	dried	7/10/2006	7/18/2006	9/28/2006	36		32	75	127	4		4
10	NH-B40701	B4	154	dried	7/6/2007	7/17/2007	10/4/2007	75		74	135	154	10		9

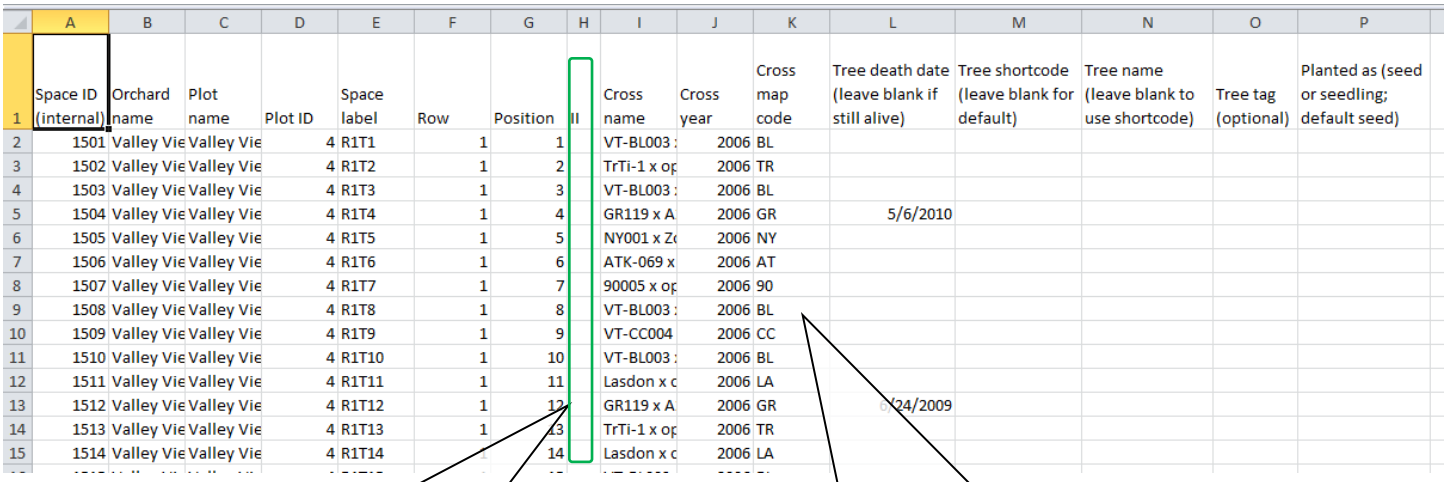
	W	X	Y	Z	AA
1	Unpollinated bags placed	Unpollinated burs bagged	Unpollinated bags recovered	Unpollinated burs recovered	Unpollinated nuts recovered
2					
3					
4					
5					
6					
7	10		10	48	3
8	22			25	3
9	4		4	7	0
10	10		9	14	0

Enter data into the spreadsheet template. Columns marked with an asterisk (*) are required. Spell chapter names out completely. Be sure that any **tree shortcodes** used will match the appropriate **orchard** or **wild tree shortcodes** entered with **plantings** or as **wild trees**.

19.3 System - Upload Historic Planting Data



19.4 System - Upload Historic Planting Data Template



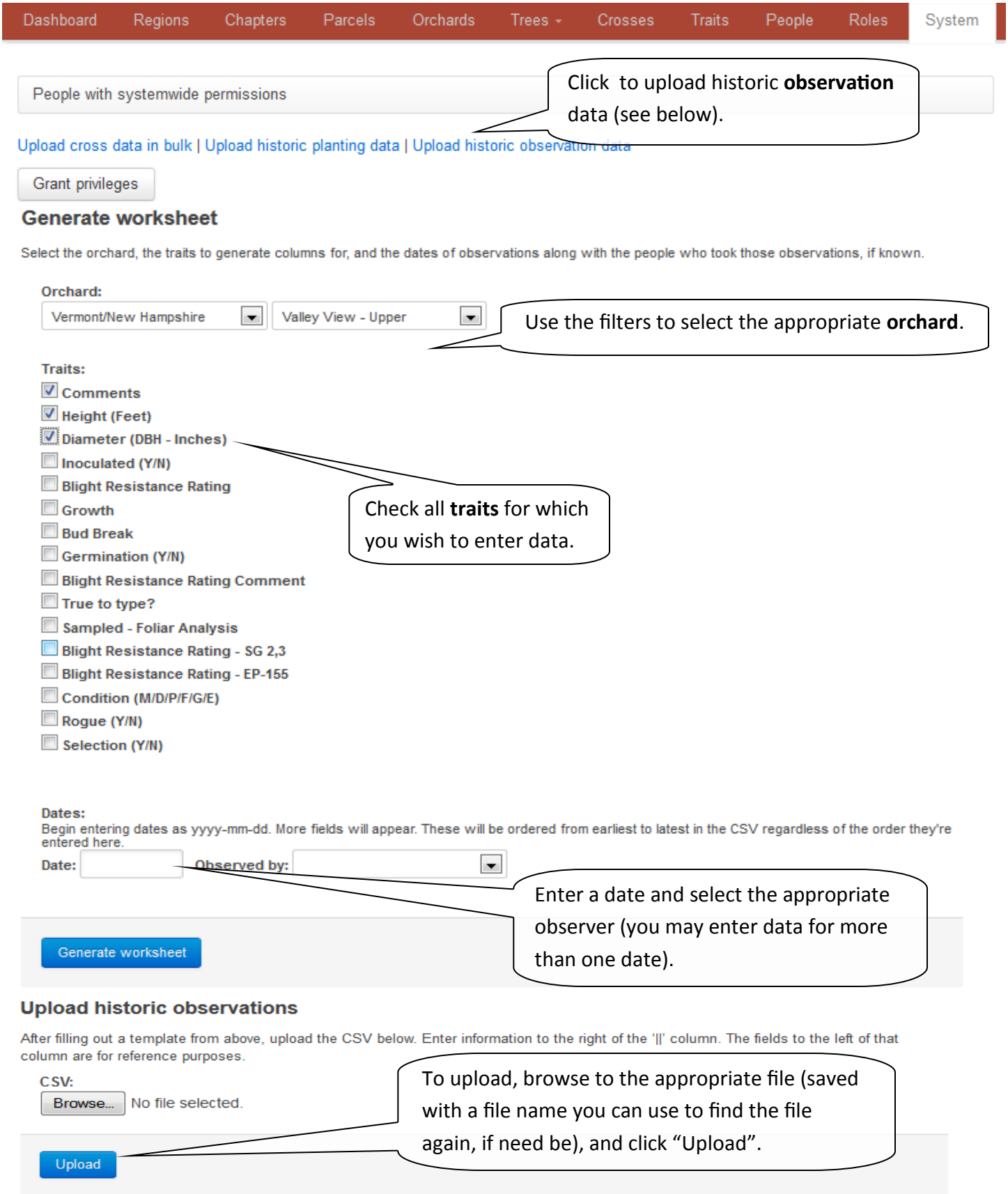
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Space ID (internal)	Orchard name	Plot name	Plot ID	Space label	Row	Position	II	Cross name	Cross year	Cross map code	Tree death date (leave blank if still alive)	Tree shortcode (leave blank for default)	Tree name (leave blank to use shortcode)	Tree tag (optional)	Planted as (seed or seedling; default seed)
2	1501	Valley Vie	Valley Vie	4	R1T1	1	1		VT-BL003 :	2006	BL					
3	1502	Valley Vie	Valley Vie	4	R1T2	1	2		TrTi-1 x op	2006	TR					
4	1503	Valley Vie	Valley Vie	4	R1T3	1	3		VT-BL003 :	2006	BL					
5	1504	Valley Vie	Valley Vie	4	R1T4	1	4		GR119 x A	2006	GR	5/6/2010				
6	1505	Valley Vie	Valley Vie	4	R1T5	1	5		NY001 x Z	2006	NY					
7	1506	Valley Vie	Valley Vie	4	R1T6	1	6		ATK-069 x	2006	AT					
8	1507	Valley Vie	Valley Vie	4	R1T7	1	7		90005 x op	2006	90					
9	1508	Valley Vie	Valley Vie	4	R1T8	1	8		VT-BL003 :	2006	BL					
10	1509	Valley Vie	Valley Vie	4	R1T9	1	9		VT-CC004	2006	CC					
11	1510	Valley Vie	Valley Vie	4	R1T10	1	10		VT-BL003 :	2006	BL					
12	1511	Valley Vie	Valley Vie	4	R1T11	1	11		Lasdon x c	2006	LA					
13	1512	Valley Vie	Valley Vie	4	R1T12	1	12		GR119 x A	2006	GR	6/24/2009				
14	1513	Valley Vie	Valley Vie	4	R1T13	1	13		TrTi-1 x op	2006	TR					
15	1514	Valley Vie	Valley Vie	4	R1T14	1	14		Lasdon x c	2006	LA					

All data to the left of the "II" column comes pre-loaded from the system. In this example, DO NOT EDIT columns A-H, including and to the left of the "II" column.

Enter **cross** names and year exactly as entered as **crosses** in the database. Assign a Cross Map Code to identify the cross quickly in the detailed map table. A death date may be entereed if the death date is known, which is likely for historic data. If you have any questions about using this template, contact your Regional Science Coordinator.

Save this data file with a file name that will make it easy to find, should it be needed for reference. For Example, "ValleyView_Planting_2007" .

19.5 System - Upload Historic Observation Data



19.6 System - Upload Historic Observation Data Template

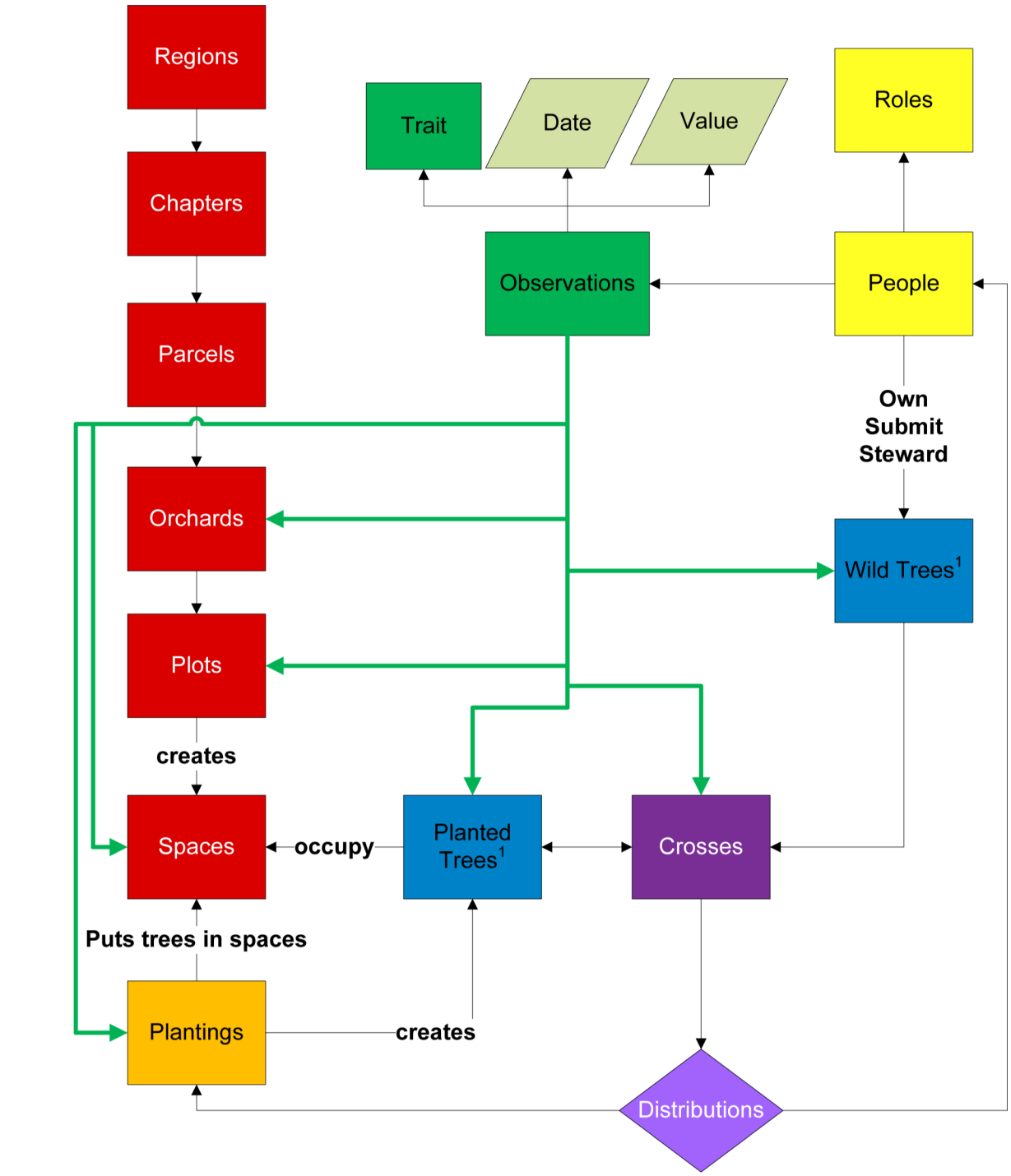
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1												Kendra M Gu	Kendra M Gur	Kendra M Gur	Kendra M Gur	Kendra M Gur
2												5/22/2008	5/22/2008	5/6/2010	5/6/2010	11/22/2010
3	Plot name	Space label	Row	Position	Tree ID (internal)	Tree cross	Tree name	Planted on	Died on	Removed on	II	Comments	Height (Feet)	Comments	Height (Feet)	Comments
4	Valley Vie	R1T1	1	1	453	VT-BL003 x DV189	VT_VV07-VT_\	10/10/2007	---	---			0.26		2.75	
5	Valley Vie	R1T2	1	2	320	TrTi-1 x open	VT_VV07-VT_\	10/10/2007	---	---			1.41		6.17	
6	Valley Vie	R1T3	1	3	454	VT-BL003 x DV189	VT_VV07-VT_\	10/10/2007	---	---			0.23		3.33	
7	Valley Vie	R1T4	1	4	463	GR119 x A2155	VT_VV07-VT_\	10/10/2007	5/6/2010	6/7/2010			1.18			
8	Valley Vie	R1T4	1	4	493	VT-EX022 x open	VT_VV07-VT_\	6/7/2010	---	---						
9	Valley Vie	R1T5	1	5	474	NY001 x ZoWSA	VT_VV07-VT_\	10/10/2007	---	---			2.07		5.17	
10	Valley Vie	R1T6	1	6	400	ATK-069 x open	VT_VV07-VT_\	10/10/2007	---	---			0.66		2.5	
11	Valley Vie	R1T7	1	7	338	90005 x open	VT_VV07-VT_\	10/10/2007	---	---			1.38		4.5	
12	Valley Vie	R1T8	1	8	455	VT-BL003 x DV189	VT_VV07-VT_\	10/10/2007	---	---			0.52		4.58	
13	Valley Vie	R1T9	1	9	387	VT-CC004 x AL50	VT_VV07-VT_\	10/10/2007	---	---			0.75		5.75	
14	Valley Vie	R1T10	1	10	456	VT-BL003 x DV189	VT_VV07-VT_\	10/10/2007	---	---			0.59		3	
15	Valley Vie	R1T11	1	11	371	Lasdon x open	VT_VV07-VT_\	10/10/2007	---	---			0.85		4.83	
16	Valley Vie	R1T12	1	12	464	GR119 x A2155	VT_VV07-VT_\	10/10/2007	6/24/2009	6/7/2010			1.18			
17	Valley Vie	R1T12	1	12	476	VT-EX022 x VT-CC0	VT_VV07-VT_\	6/7/2010	11/22/2010	---						no sprout
18	Valley Vie	R1T13	1	13	321	TrTi-1 x open	VT_VV07-VT_\	10/10/2007	---	---			0.66		2.92	
19	Valley Vie	R1T14	1	14	372	Lasdon x open	VT_VV07-VT_\	10/10/2007	---	---			0.43		4.5	
20	Valley Vie	R1T15	1	15	457	VT-BL003 x DV189	VT_VV07-VT_\	10/10/2007	---	---			0.36		1.5	
21	Valley Vie	R1T16	1	16	373	Lasdon x open	VT_VV07-VT_\	10/10/2007	---	---			0.49		2.17	
22	Valley Vie	R1T17	1	17	458	VT-BL003 x DV189	VT_VV07-VT_\	10/10/2007	---	---			0.72		3.42	
23	Valley Vie	R1T18	1	18	388	VT-CC004 x AL50	VT_VV07-VT_\	10/10/2007	5/22/2008	6/7/2010						
24	Valley Vie	R1T18	1	18	492	VT-EX022 x open	VT_VV07-VT_\	6/7/2010	11/22/2010	---						no sprout
25	Valley Vie	R1T19	1	19	374	Lasdon x open	VT_VV07-VT_\	10/10/2007	---	-			0.62		4.42	

All data to the left of the "II" column comes pre-loaded from the system. In this example, DO NOT EDIT columns A - K.

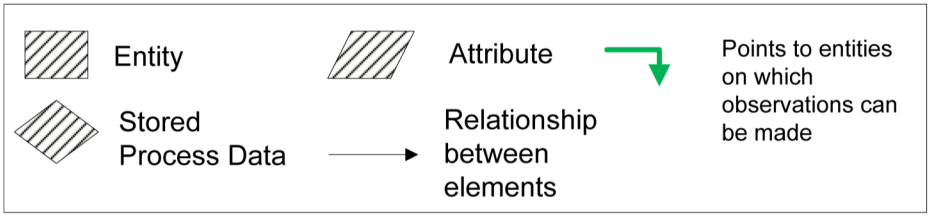
Enter data for each **trait** in the appropriate date column. You may skip or delete columns that are not needed (all selected **traits** will be available for all dates). If you have any questions about using this template, contact your Regional Science Coordinator.

Save this data file with a file name that will make it easy to find, should it be needed for reference. For Example, "ValleyView_HistoricObservations_2007" .

Appendix A - Data Model Diagram



LEGEND



[1]In the database, both planted and wild trees are handled in the same table. They are split here for ease of explaining the design and relationships to other entities.

Appendix A - Description of the Data Model

The *dentata*Base is **hierarchical**, following to some degree the organization of TACF itself. The **hierarchy** is depicted graphically by the red boxes in Data Model Diagram, which depicts the major **entities** in the Database and their relationships. Starting from the top of the **hierarchy**, there are **Regions**, corresponding to our four Regional Science Coordinators. Chapters are located within **Regions**. Chapter **orchards** are located on Parcels of land (which can contain more than one **orchard**, but often don't). Usually there is only one **plot** within an **orchard**, but not always. For instance, seed orchards often contain multiple **plots**. Finally, **spaces** are locations within **plots**, into which trees are planted. There is one **space** per tree.

Usually, you will start out your experience by planting some trees. This is a multistep process. First, if they don't exist, Parcels, **orchards** and **plots** will need to be created, in that order. Additionally, if they don't exist, **crosses** from which nuts are obtained for **planting** will have to be created. Finally, an **orchard** with a **plot** can be planted to some trees who have **crosses**.

After you have successfully created a **planting**, you can attach **observations** to the trees. However, **observations** also can be made on an **orchard**, **plot**, **space** or **cross**. For instance, while we might **observe** whether or not hairs are present on the leaves of a tree, we also might **observe** that a **space** is located in swampy ground (or even an entire **plot** or **orchard**). We also might **observe** that we fertilized an **orchard** with 1000 pounds per acre of 20-6-6 as ammonium nitrate, diammonium phosphate and potash on May 15, 2006. Or the fertilization may have been restricted to only one **plot** or a **space** or two.

Observations (in green in the Data Model Diagram) consist of a **trait**, such as leaf hairiness, it's **value**, such as hairy, the date the **observation** was made and the person who made the **observation**.

People (in yellow) are a central part of TACF and of the database. Their ability to access various parts of the database are set by their **roles**. People make the **observations**, plant the trees, make the **crosses**, tend the trees, own the land on which **plantings** are made, etc. They have been a central part of the design and development of this database.

Appendix B - Glossary of Terms

Breadcrumbs – Also called a "breadcrumb trail", this is a tool that aids in **user** navigation of a website or online application. The "crumbs" help the **user** keep track of their location within the application and are displayed in our database in the white bar just below the red navigation header.

Bred Tree – A tree produced from either an uncontrolled or a controlled **cross** that has been planted.

Cascade – In the TACF *dentata*Base security model, a **role** may cascade for a given **entity**, meaning that the same **privileges** given to that **entity** will also apply to all lower **entities** as defined by the database **hierarchy**.

Chapter Status – The activity level of the chapter – Active, Inactive, Provisional or Contact. Active is for chapters currently in operation. Inactive is for chapters previously recognized by TACF but no longer operating. Provisional is for chapters designated as provisional by TACF. Contact is a place holder for **entities** participating in TACF plantings that cannot be considered chapters.

Classification (tree) – The species or other similar category, i.e. BC1, F1, etc., of a **wild tree** in the *dentata*Base. The classification **entity** is used to categorize only **wild trees**, not **bred trees**. **Bred trees** are categorized by their **cross** type. Accepted **cross** type values TBD.

Cross - A set of progeny resulting from the crossing of two trees. A cross is identified by the two parents used to make it. The same cross can be made in more than one year; those are indexed separately and the database uses the combination of the two parents and year to differentiate each cross as unique. In the name of a cross, the mother (female flower) is listed first followed by the father (pollen) – female x male. In controlled crosses, the male parent is known, in uncontrolled crosses, the male parent is unknown and usually designated "OP" for "open pollination."

CSV – This stands for "comma-separated value" and is a file format that stores tabular data in plain-text form. This file type is the format by which bulk data are imported into or exported from the *dentata*Base. There are several places where the Database will create and export a CSV file into which the **user** will enter data and then upload the file back into the database. Make sure when saving files for upload that they are saved in the .csv format. Otherwise, the database will not be able to process them.

Decimal Degrees (DD) –A format for recording the **latitude** and **longitude** of geographic coordinates as decimal fractions. This format is commonly used by web mapping applications such as Google Maps, and available on GPS devices. Decimal degrees are an alternative to using degrees, minutes, and seconds (DMS). For our locations in North American, positive **latitudes** and negative **longitudes** should be used for proper mapping. **Latitude** and **longitude** are usually expressed in that sequence, **latitude** before **longitude**, which is how they are displayed in the *dentata*Base.

Appendix B - Glossary of Terms (continued)

Detailed map table – This table shows all trees planted in an **Orchard**, **Plot** or **Planting**, along with the option to display attribute and observation data of interest. The detailed map table is designed to show data associated with **plot spaces** and the trees that occupy those **spaces**.

Dead – A tree may be marked dead any time it is observed as such. Chestnut trees commonly re-sprout so it is possible to change the **observation** to "alive" at any time as well. To mark a tree dead and re-use the planting **space**, it must be marked dead and removed. Only do this when the tree is truly gone from the **space**. Resurrecting a tree once it has been removed is not something even System Administrators currently have the ability to do.

Entity – In data modeling, an object about which the **user** needs to track data that can be classified and that has stated relationships to other entities. Examples of entities in our database are Parcel, People, **Roles**, Trees, etc., etc. *See data model in Appendix A for an example of how our entities relate to one another.*

GPA/MOU Status – Indication of whether a Germplasm Agreement (GPA) or Memorandum of Understanding (MOU) is on-file for a Parcel or landowner. Use "None", "On-file" for a signed GPA and "MOU" if an MOU exists for the Parcel.

Hierarchy – Certain elements of the *dentata*Base follow a ranked arrangement. This allows for **permissions** and other elements to **cascade** and/or be dependent on higher ranked items. For example, our **planting** hierarchy is ranked based on geographic size, in order from largest to smallest: Region -> Chapter -> Parcel -> Orchard -> Plot -> Planting -> Space. *For a visual representation of this hierarchy, please see the data model in Appendix A.*

Hyperlink – Hyperlinks are imbedded links that aid in the navigation of the *dentata*Base. Any available hyperlinks are displayed as underlined blue text.

Latitude (Lat) – The geographic coordinate that defines the north-south position of a point on the Earth's surface. Please enter Latitude in **decimal degrees** (DD), the format offered by Google Maps and most GPS devices.

Line – Meadowview line codes are named for the American parents of various B2s made from **crosses** with 'Graves,' 'Clapper' or other sources of blight resistance. Genetic diversity is increased when each chapter makes **crosses** of Meadowview lines onto local American chestnut trees.

Longitude (Long) - The geographic coordinate that defines the east-west position of a point on the Earth's surface. Please enter Longitude in **decimal degrees** (DD), the format offered by Google Maps and most GPS devices. (Note: longitude should be a negative number for North American locations).

Appendix B - Glossary of Terms (continued)

Nonexistent – This **space status** refers to any **space** within a **plot** map that does not actually exist as part of the planting area on the ground. In contrast, an **unplantable** space is one that might become available for planting someday. Because the *dentata*Base only accepts rectangular **plots**, nonexistent spaces are part of the rectangular **plot** grid but not part of the **plot** in reality. For instance, a rectangular **plot** might spill over onto a neighbor's property; any such spaces in that **plot** would be designated as nonexistent. Nonexistent spaces are displayed with an "n" and grey color in the **plot** map.

Observation – An observation can be made on several **entities** in the database. When assigning a **trait**, one notes the **entity** or **entities** to which the **trait** applies. A single observation is made unique by the combination of the **trait** of interest, the **value** of the observation for that **trait**, the date on which the observation was taken and the **entity**. This allows multiple observations for the same **trait** on an **entity** to be taken at different times. For instance, the height of a tree might be measured in two separate years.

Orchard – An orchard is an intentional **planting** of chestnut trees with a common management or experimental objective that is contained within a contiguous area. There can be multiple orchards within one parcel. Orchards may have multiple **plantings** over several years, but must meet the above definition.

Owner – The person on whose land a **wild tree** is growing or the owner of a **parcel** on which an **orchard** is located. That person must be in entered into the *People* tab of the system to be selected, but they do not have to have an account established. The owner may or may not be the same as the **submitter** and/or **steward**.

Pedigree – Refers to all of the parents used in any **cross'** lineage.

Permissions/Privileges – The type of access a **user** has to the *dentata*Base. A **user** may be assigned either **read** or **write access** to one or more **entities** in the Database based on their given **role**.

Plantable – This **space status** refers to any space within a **plot** that could have a tree planted in it. Plantable spaces are displayed with a lower case "p" and light green color in the **Plot** map. Plantable spaces occupied by a live tree are displayed with an upper case "T" in a dark green color, while plantable spaces occupied by a dead tree are displayed with a lower case "d" and a gold color. If the dead tree is removed, the space reverts to the plantable status.

Planting – A planting is the intersection between spaces, trees and time. Plantings are used so that replants and multi-year establishment can be properly tracked.

Appendix B - Glossary of Terms (continued)

Planting Stage – As a **planting** is designed and implemented it goes through several stages. “New” has been created, “Designed” is saved but not yet ready to execute, “Committed” is executed but may still be rolled back and “Cemented” is a "Committed" **planting** that has **observations** associated with the trees. A "Cemented" **planting** may not be rolled back.

Planting Type – Classification of the type of **planting**. Please only use one of these options (this eventually will be a drop-down selection) and if you have questions contact your Regional Science Coordinator.

- Breeding Orchard
- Seed Orchard
- Ceremonial
- Demonstration
- Site Test
- American
- Transgenic
- CMS
- Progeny Test – inoc
- Progeny Test
- Restoration Planting
- Phytophthora Test
- Silviculture Test
- Research

Plot – A plot is the physical layout of the spaces you will plant. The *dentata*Base only accommodates plots laid-out on a grid. There are several options for customization that should be able to accommodate any layout desired. For many TACF breeding and American germplasm conservation **orchards**, there will be a 1:1:1 relationship between Parcel, **Orchard** and Plot. In contrast, seed **orchards** are partitioned into multiple plots, usually with one plot per breeding **line**.

Plot Map – The plot map shows the layout, **space label** and **space status** of all **spaces** in a **plot**. For additional data associated with the **plot spaces** or trees occupying those **spaces** use the **detailed map table**.

Production Server – This is the server/website on which the *dentata*Base resides with TACF’s real data. Once a **user** has practiced on the **testing server** and feels comfortable with how data are entered and structured in the *dentata*Base, they will be given an account on the production server. Generally, **permissions** for the production server will be reduced from those for the **testing server** to only those **entities** to which the **user** needs access. The current address of the production server is: http://acf.herokuapp.com

Appendix B - Glossary of Terms (continued)

Read access – **Users** of the *dentata*Base may have read or **write privileges** for one or more **entities**. Read access only gives a **user** the capacity to see the data for that **entity**. **Users** cannot edit, or **write** to, **entities** for which they have only read **privileges** assigned.

Region – The highest level of geographical classification, the Region includes the states or Chapters that are served by a Regional Science Coordinator (RSC). Meadowview is also classified as its own Region (and Chapter). In most cases, **users** will only have access to the Region their chapter belongs to.

In addition, an "At-large" Region exists to associate any data that cannot be verified as belonging to a specific Region. The most common use of the "At-large" Region is for trees that have no record of origin. The "At-large" Region should be used sparingly.

Role – In the *dentata*Base, a role defines the access **privileges** a **user** has to the system. Currently, roles may be assigned for one or more of the following **entities**: System, **Regions**, Chapters, Parcels and **Orchards**. Additional **entities** may be assigned in the future. Given the **hierarchy** of the *dentata*Base, roles may also **cascade**, meaning that the same **privileges** of a given **entity** will also apply to all lower **entities**. The choice of whether or not to **cascade** a role is optional. If your have access, you can find out more about a given role in the system by clicking on the *Roles* tab and exploring from there.

In addition to being assigned to a given **entity**, a role also defines whether a **user** will have read or write capabilities for that **entity**. Only **users** with System Administrative **privileges** may create roles and assign **users** to those roles. **Users** who would like additional **privileges** should make such a request to their local Regional Science Coordinator.

Security model – A database security model defines the level of access a **user** of the *dentata*Base has to the system. **Users** may have access to one or more **entities** and may have either read or write access to those **entities**. In order to access the *dentata*Base, all **users** must be invited by a System Administrator and subsequently create an account. In the future, the system may allow a person to create their own **user** account without being invited.

Seedlot – Used to identify a **cross** made in a given year (must be unique). Various schemes can be used to name seedlots. One common one is: Chapter abbreviation + **cross** type code + year **cross** was made + assigned number for each **cross** made in a particular year (i.e. KYB30602 = a KY chapter B3, made in 2006, seedlot #2 out of six **crosses** made in 2006 for KY).

Appendix B - Glossary of Terms (continued)

Shortcode (Tree) – Tree Shortcode is used to identify a tree (wild or planted). It must be unique by Chapter and should follow any naming convention specific to the Chapter. Often there will be a different convention for **orchard** trees and **wild trees**. For **orchard** trees, the shortcode is often the **orchard shortcode** plus the **space label** where the tree is planted. Some chapters insert a hyphen between the **orchard shortcode** and the **space label**. For **wild trees**, the shortcode is commonly a 2-letter state abbreviation, followed by a hyphen, and then a short location abbreviation and a 3-digit sequential number.

Shortcode (**Orchard**) – **Orchard** Shortcode must be unique by Chapter and should follow any naming convention specific to the Chapter. Commonly, this will be the 2-letter state abbreviation, followed by a hyphen and then a short site abbreviation and the two-digit year of initial planting. For example, "VT-SC13" = Vermont, Lake St. Catherine, established 2013. If you have questions, please contact your Regional Science Coordinator.

Shortcode (**Plot**) – **Plot** Shortcode must be unique by Chapter and should follow any naming convention specific to the Chapter. If you have questions, please contact your Regional Science Coordinator.

In cases where the **orchard** has only one **plot**, this may be the same as the **orchard shortcode** (see above). For a seed **orchard**, one suggestion is to use a 2 letter abbreviation for the site (and the block number if there is more than one on the site), followed by a hyphen and the **plot** number. For example, "BR1-2" = Bunker Road Preserve, Block1, Plot 2.

Sort caret – A caret, or small inverted V-shaped symbol, is shown in the column header of any tables with sorting capability. It will point "up" when the list is in A-Z order and "down" when the list is in Z-A order.

Space – A space is the physical place within a **plot** that a planted tree may occupy. The *dentata*Base only accommodates plots laid-out on a grid; however there are several options for customization of **space statuses** that should be able to accommodate any real-world layout desired. Spaces can be identified by **space labels.**

Space label – A space label uniquely identifies a space within a **plot**, but not between **plots**. Space labels can be sequential numbers or combinations of alphanumeric characters of the **user's** choice.

Space Status – All spaces within a plot are assigned a status of **plantable**, **unplantable** and **nonexistent**. Space status is assigned at the time of **plot** creation and best viewed in the **plot map**.

Steward – The person who is in charge of monitoring the health, flowering status, etc. of a **wild tree** or **orchard**. That person must be in entered into the *People* tab of the system to be selected, but they do not have to have an account established. The steward may or may not be the same as the **submitter** and/or **owner**.

Appendix B - Glossary of Terms (continued)

Submitted by – The person who submitted a tree for recording to TACF. That person must be entered into the *People* tab of the system to be selected, but they do not have to have an account established. The submitter may or may not be the same as the **steward** and/or **owner**.

Testing Server – Also called the staging server, this is where **users** and programmers try out new functionality. It also offers system **users** a place to practice and test all elements of the *dentata*Base. The testing server holds a mixture of both real and fake data. **Users** should not take pains to ensure accuracy of data entered into the server, but rather use the testing server as an opportunity to ensure they understand how all elements of the system work. In general, **users** will be given higher **privileges** in the testing server than in the **production server**. The current address of the testing server is: http://dentatabase-staging.herokuapp.com

Text-only values – All data entry fields in the *dentata*Base will accept any text characters (alphabetic or numeral). There are no controls on these entries and they will be saved exactly as they are entered. For example, a height of "B26 #Santa" or a **cross shortcode** of "I don't know" would be accepted by the system. We hope to provide finer control over the content of data fields in future versions for the *dentata*Base.

Trait – A trait is a characteristic of an **entity** in the *dentata*Base about which, on a given date, we gather some **value** to create an observation. Traits may be assigned to the following **entities**: **Orchards**, **Plots**, **Plantings**, **Spaces**, **Crosses**, and Trees. In future phases, additional **entities** such as People will be allowed to have traits.

While working in the *dentata*Base, click on the *Traits* tab to discover what traits are available and assigned for a given **entity**. To find out how the trait should be used, and what **values** should be assigned to the trait, click on the **hyperlink** for that trait.

Only **users** with System Administrative **privileges** may add new traits. A **user** without System Administrative **privileges** may request that a new trait be added by contacting a TACF Science Staff member, preferably their local Regional Science Coordinator.

Unplantable - This **space status** refers to any space within a **plot** that could not have a tree planted in it. Unplantable spaces are within the real-world confines of the **plot** space but can not be planted for one reason or another (obstruction like a rock or ledge, wet spot, etc.). If the rock were removed, for instance, an unplantable space might be rendered **plantable**, unlike a **nonexistent** space. Unplantable spaces are displayed with a "u" and pink color in the **plot** map.

User – The term applied to a person with an account in the system. Anyone wishing to access the *dentata*Base much be invited and subsequently create a password-protected user account.

Appendix B - Glossary of Terms (continued)

Value – One of three elements that create a unique observation. Currently, all values **are TEXT ONLY**. This means that, for example, you can enter a value of "Santa Claus" as the height of a tree. We are working very hard to raise funds for developing better controls on these values, but it will take until at least mid-2014, if not longer, before these controls are in place. Please take special care to ensure your data are correct before uploading into the system.

Wild Tree – A wild tree is defined as any tree for which we do not have previous **crossing** information. The tree may have actually been planted, but we do not have the information regarding the **planting** and choose instead to treat it as an individual, non-planted tree. All species of chestnut can be handled under wild trees, not just American chestnuts.

Write access – **Users** of the *dentata*Base may have **read** or write **privileges** for one or more **entities**. Write access gives a **user** the capacity to both see and edit **entities** for which they have been assigned write **privileges**.