

Hitchhiker's Guide to the VMS

KCheung-SIG

April 16, 2025

Contents

1	Finding VMS elements in the Application	3
1.1	Modules/Submodules/Groups/Group Variables	4
1.2	Variables	6
1.2.1	Variable Entities	6
1.2.2	Variable Associated with a Group Variable	6
1.3	List and List Options	7
1.4	Filter and Color Tags	11
1.4.1	Filter and Color Tags Entities	11
1.4.2	Filter and Color Tags associated with a Group Variable	12
1.5	Variable Domains	13
2	Updating Text	15
2.1	Submodule/Group/Group-Variables	16
2.2	List Options	17
2.3	Tags	19
3	Updating Default Custom Unit Preferences	20
4	Re-Ordering	20

1 Finding VMS elements in the Application

The VMS holds the structure of our application. The data is a tree like structure that determines how the applicaiton is rendered. This section aims to help you understand how the data in the VMS translates to how it is shown in the application.

1.1 Modules/Submodules/Groups/Group Variables

In the VMS Use the side bar to navigate down these paths:

Applications → Modules → Submodules → Group → Group Variables → Variables

Example:

BehavePlus → Surface → Fire Behavior(output) → Surface Fire → Heading Rate of Spread → Heading Rate of Spread

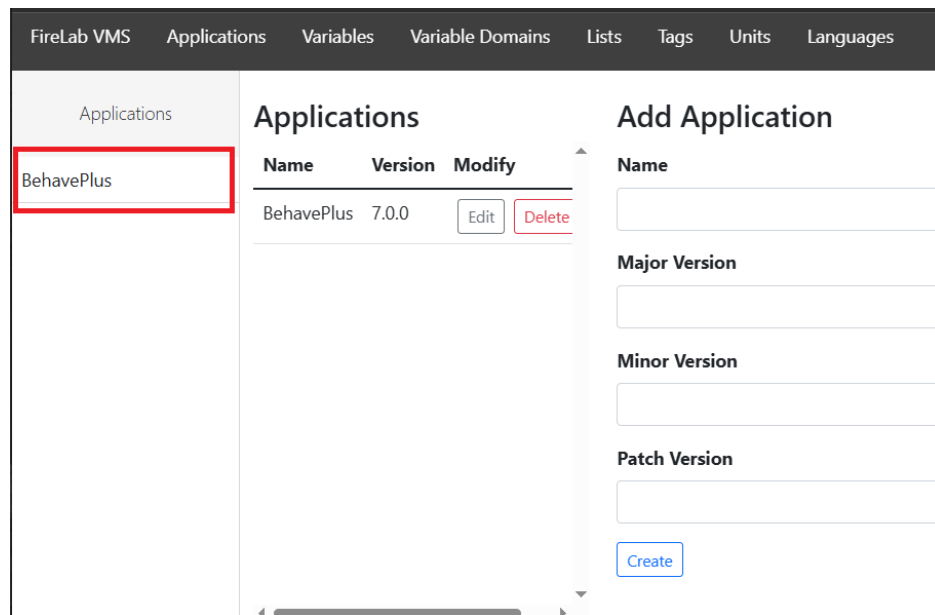


Figure 1: VMS: Home page

WORKING AREA

Module: **Surface** + Show Notes

Outputs Inputs

Submodules: Fire Behavior, Size, Spot, Wind and Fuel

Direction Mode: ☐ Heading ☐ Heading, Backing, Flanking ☐ Direction of Interest

Surface Fire Group: ☐ Rate of Spread ☐ Flame Length ☐ Fireline Intensity Group Variables

Ignition: ☐ Probability of Ignition

Back Next

Figure 2: Application: Outputs page after a Surface Only workhseet has been created.

WORKING AREA

Module: **Surface** + Show Notes

Outputs Inputs

Submodules: Fuel Model, Fuel Moisture, Wind and Slope

Standard Group

Fuel Model Sub Group

Selected Fuel Model Code + Select More

Your Fuel Model Code selections

Back Next

Figure 3: Application: Inputs page after a Surface Only workhseet has been created. NOTE Groups can have sub groups.

1.2 Variables

The Variables can be associated with multiple group variables but group variables can only be associated to a single variable. The Variable entity will hold information about Domains/Dimension/units

1.2.1 Variable Entities

1. Navigate to the "Variables" tab

1.2.2 Variable Associated with a Group Variable

1. Navigate to the Application → Module → Group page
2. "Expand" the "Variables" accordion
3. Find the variable you are interested in and click "Edit". This will take you to the "Variables" page and populate the form with the variable's info.

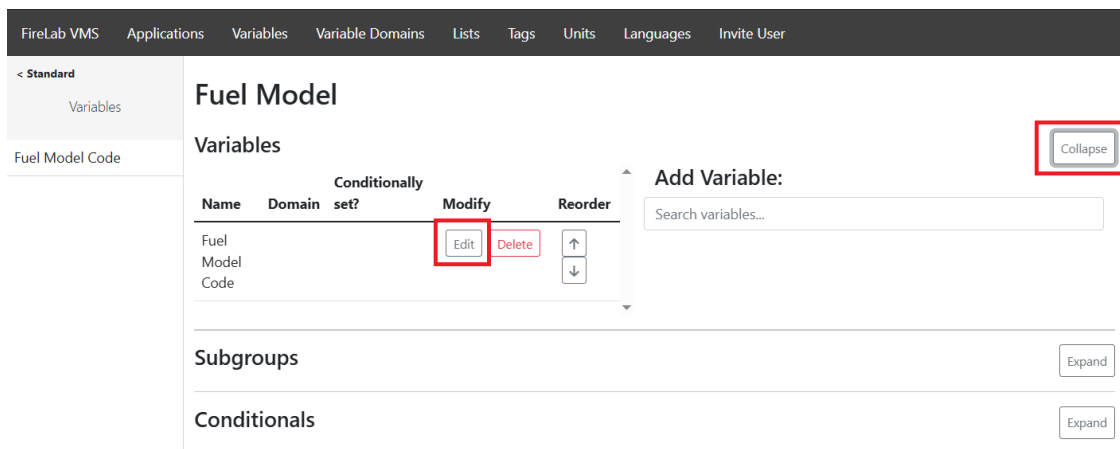


Figure 4: VMS: Finding the variable associated with a group variable

1.3 List and List Options

Certain Group Variables have a list associated with it (usually inputs). In the application lists show up as either radio selections or drop down selections.

The screenshot shows a software interface titled "WORKING AREA". At the top right, there are "Outputs" and "Inputs" buttons. Below the title bar, there is a "Surface" section with a circular icon and a "+ Show Notes" button. A tab bar below this contains "Fuel Model", "Fuel Moisture", and "Wind and Slope", with "Wind and Slope" being the active tab. The main content area is divided into sections. The first section, "Wind measured at:", is labeled "List" and contains three radio button options: "Midflame (Eye Level)", "20-Foot", and "10-Meter". The "10-Meter" option is selected and highlighted with a red box. A red arrow points from the text "List Option" to the "10-Meter" option. The second section, "Wind and slope are", contains two radio button options: "Aligned (Wind is $\leq 30^\circ$ from upslope)." and "Not Aligned (Wind is $> 30^\circ$ from upslope.)". The third section, "Slope", contains a "Values:" input field with "0 - 604", a "Range Selector" button, and "Units used: %". At the bottom, there are "Back" and "Next ►" buttons.

Figure 5: Application: List options as radio selections.

WORKING AREA

Surface [+ Show Notes](#)

[Fuel Model](#) [Fuel Moisture](#) [Wind and Slope](#)

Standard

Fuel Model

Please select from the following Fuel Model Code (you can select multiple)

[Grass](#) [Grass Shrub](#) [Shrub](#) [Timber Understory](#) [Timber Litter](#) [Slash Blowdown](#)

Standard Fuel Models (Anderson, Scott and Burgan) Mediterranean Fuel Models (Fernandes et al; Portugal) Chaparral & Coastal Sage Shrub (Weise, Southern CA)

- + FB1/1 - Short grass (Static)
- + FB2/2 - Timber grass and understory (Static)
- + FB3/3 - Tall grass (Static)
- + FB4/4 - Chaparral (Static)
- + FB5/5 - Brush (Static)
- + FB6/6 - Dormant brush, hardwood slash (Static)
- + FB7/7 - Southern rough (Static)

Selected Fuel Model Code [View](#)

[Back](#) [Next](#)

Figure 6: Application: List options as multi select dropdown.

In the VMS you can find the list associated to a group variable by:

1. Navigating to the Module → Submodule → Group
2. Click "Expand" on the "Variables" accordion. Then click "Edit" on the Variable listed. This will Navigate you to the "Variables" page and populate the form with the variable's information.

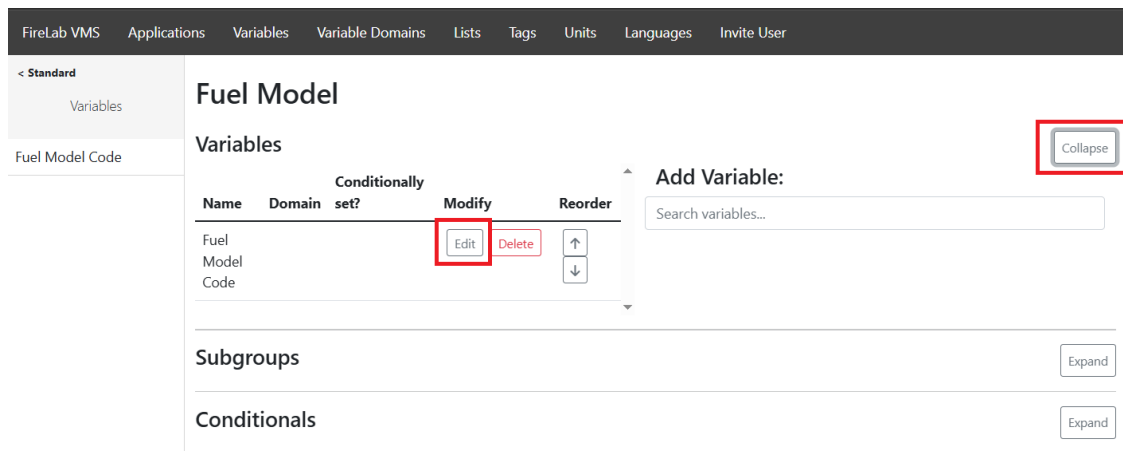


Figure 7: VMS: Group page

1. Look for the "List" field and note the list selected.

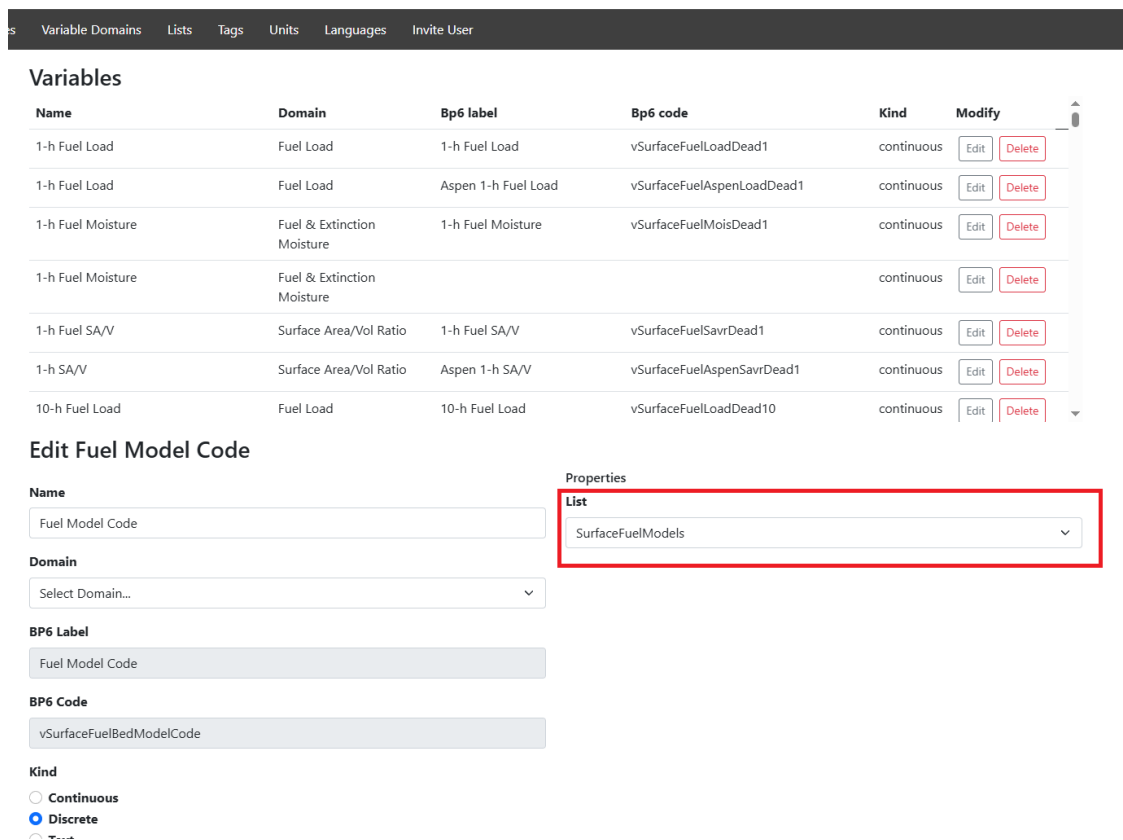


Figure 8: VMS: Variables page

1. Navigate to the "List" tab and scroll down or (Ctrl +f) to find the list mentioned above.

es

Variable Domains

Lists

Tags

Units

Languages

Invite User

Lists

Name	Modify
MortalitySpeciesMasterList	<div>EditDelete</div>
ScorchHeightOrFlameLength	<div>EditDelete</div>
SpotFireSource	<div>EditDelete</div>
SurfaceFuelModels	<div>EditDelete</div>
SurfaceRunInDirectionOf	<div>EditDelete</div>
SurfaceSpreadDirectionMode	<div>EditDelete</div>
TimeZone	<div>EditDelete</div>
TreeSpeciesList	<div>EditDelete</div>

Add List

Name

Filter Tag Set

Select Filter Tag Set... ▾

Color Tag Set

Select Color Tag Set... ▾

Create

All Options

Name	Value	Order	Default	Tags	Color tag	Modify	Reorder
------	-------	-------	---------	------	-----------	--------	---------

Add Option

Name

Index

Figure 9: VMS: List page

1. Click "Edit". This will populate the form at the bottom of the page.

1.4 Filter and Color Tags

1.4.1 Filter and Color Tags Entities

Filter and Color tags in the application can be found in input group variables that allow users to select multiple inputs.

The screenshot shows the 'WORKING AREA' interface. At the top, there's a 'Surface' tab and a '+ Show Notes' button. Below this, there are tabs for 'Fuel Model', 'Fuel Moisture', and 'Wind and Slope'. The 'Fuel Model' tab is selected, showing a list of fuel model codes. A red box highlights the 'Filter Tag Set' and 'Color Tag Set' sections. The 'Filter Tag Set' includes 'Grass', 'Grass Shrub', 'Shrub', 'Timber Understory', 'Timber Litter', and 'Slash Blowdown'. The 'Color Tag Set' includes 'Standard Fuel Models (Anderson, Scott and Burgan)', 'Mediterranean Fuel Models (Fernandes et al; Portugal)', and 'Chaparral & Coastal Sage Shrub (Weise, Southern CA)'. Below these, there's a list of fuel model codes with expandable options (e.g., '+ FB1/1 - Short grass (Static)'). At the bottom, there's a 'Selected Fuel Model Code' section with a 'View' button, and 'Back' and 'Next' buttons.

Figure 10: Application: Filter Tag and Color Tag example.

You can find existing tags in the VMS by:

1. Navigate to the "Tags" tab

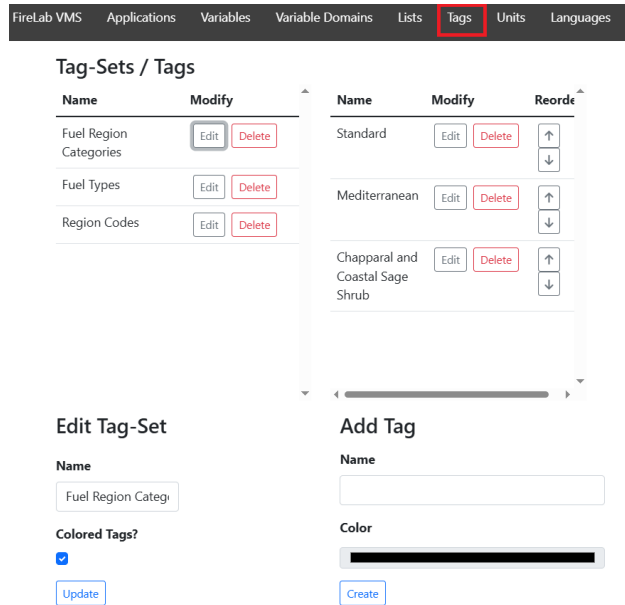


Figure 11: VMS: Tags page

1.4.2 Filter and Color Tags associated with a Group Variable

You can find the tag sets associated with a group variable by:

1. Find the list associated to the group variable, see [List and List Options](#) section.
2. Click "Edit" on the list
3. Once the form on the list page has been populated you can find the associated tag sets.

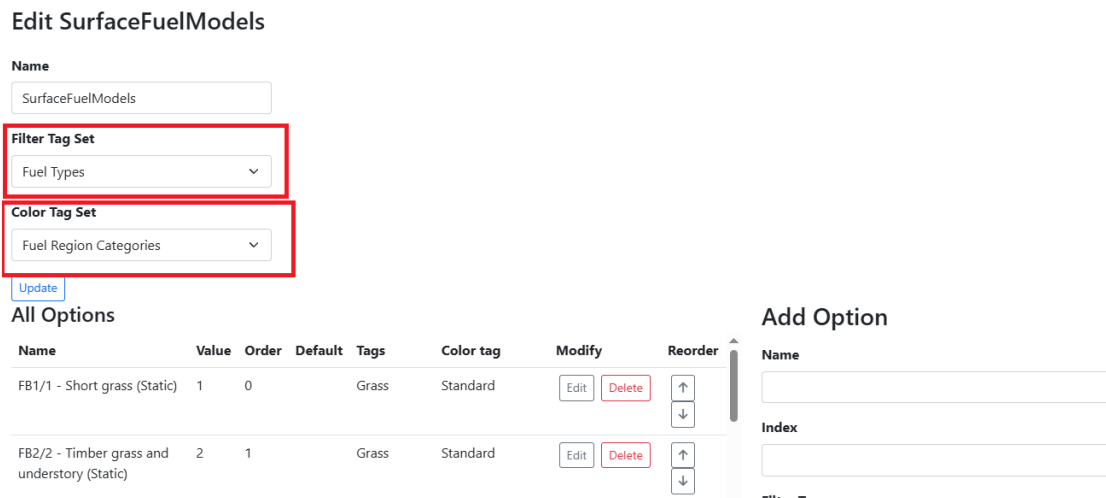


Figure 12: VMS: List page

1.5 Variable Domains

The Variable Domain entities is used primarily to associate a group of variables to some default units and decimal precision. Domain entities are grouped into Domain sets, primarily used for creating collapsing accordions in the application.

The screenshot displays the 'General Units' tab in the application. The left sidebar contains a 'Modules' section with icons for Surface, Crown, Contain, and Mortality, and a 'Tools & Settings' section with icons for Calculator and Settings. The 'Settings' icon is highlighted with a red box. The main content area shows the 'Contain' domain set, which is also highlighted with a red box. Below the domain set name is a table with three columns: Variable Domain, Units, and Decimals. The table lists two variables: 'Containment Distances' and 'Line Production Rate'. The 'Containment Distances' variable is highlighted with a red box and shows units of 'ch' and 0 decimals. The 'Line Production Rate' variable shows units of 'ch/h'. Below the table is a list of domain sets: Fire & Effects, Fuel & Vegetation, Terrain & Spotting, Time & Map, and Weather, each with a plus sign icon to its right.

Variable Domain	Units	Decimals
Containment Distances	ch	0
Line Production Rate	ch/h	

Figure 13: Application: Custom Unit Preferences table.

1. Navigate to the "Variable Domains" tab
2. Click "Edit" on the "Domain Set". This will populate the form on the right with a list of domains that belong to this set.

Domain Sets

Name	Modify
Contain	<div>EditDelete</div>
Fire & Effects	<div>EditDelete</div>
Fuel & Vegetation	<div>EditDelete</div>
Terrain & Spotting	<div>EditDelete</div>
Time & Map	<div>EditDelete</div>
Weather	<div>EditDelete</div>

Domains

Name	Modify
Containment Distances	<div>EditDelete</div>
Line Production Rate	<div>EditDelete</div>

Edit Domain Set

..

Add Domain

Name

Figure 14: VMS: Variable Domains.

2 Updating Text

Most texts for entities displayed in the application can be updated by changing the translation field for that entity..These entities will have 2 translation fields. One field is used in the worksheet wizard (pages before computation) and the second is used for the results page. Usually the result translations are a short form of the worksheet translations. Here are some of the common entities you might want to update. The application will default to the worksheet translation if a result translation is not present.

2.1 Submodule/Group/Group-Variables

1. For these entities navigate to the entity page, see [Modules/Submodules/Groups/Group Variables](#) section.
2. Update the "Translation" field.

Surface Fire

Variables Expand

Subgroups Expand

Conditionals Expand

Translations Collapse

Worksheet Translations

Language	Key	Translation
English	behaveplus:surface:output:fire_behavior:surface_fire	Surface Fire

Result Translations

Language	Key	Translation
English	behaveplus:surface:result:fire_behavior:surface_fire	

Help Page Expand

Settings Expand

Figure 15: VMS: Group page after navigating BehavePlus → Surface → Fire Behavior(output) → Surface Fire

2.2 List Options

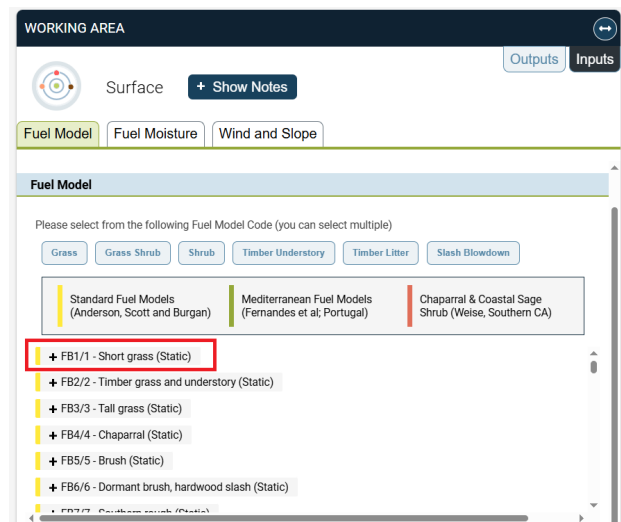


Figure 16: Application: Worksheet translations appear in the wizard.

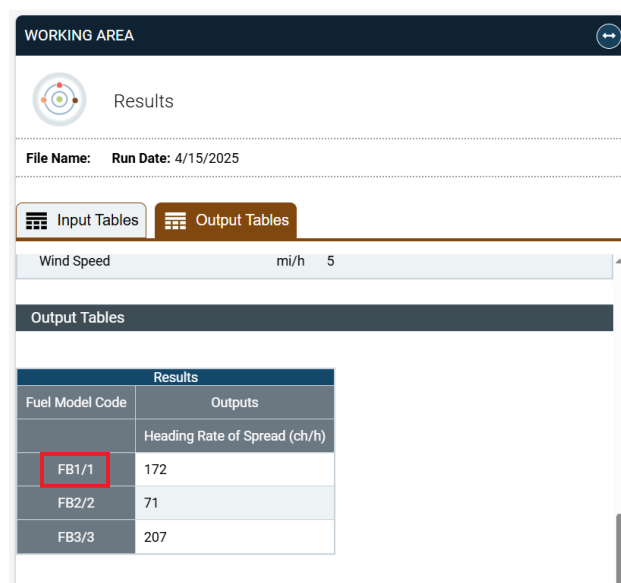


Figure 17: Application: Result translations appear in the results matrices and tables.

1. Find the list associated to the group variable, see [List and List Options](#) section.
2. Click "Edit" on the list.
3. Find the list option you are interested in updating and click "Edit".
4. Update the "Translation" field and the "Name" field.
5. Navigate to the list associated with the group variable. see [List and List Options](#)

6. Click "Edit" on the list option you want to update.

Update

All Options

Name	Value	Order	Default	Tags	Color tag	Modify	Reorder
FB1/1 - Short grass (Static)	1	0		Grass	Standard	Edit Delete	↑ ↓
FB2/2 - Timber grass and understory (Static)	2	1		Grass	Standard	Edit Delete	↑ ↓
FB3/3 - Tall grass (Static)	3	2		Grass	Standard	Edit Delete	↑ ↓
FB4/4 - Chaparral (Static)	4	3		Shrub	Standard	Edit Delete	↑ ↓
FB5/5 - Brush (Static)	5	4		Shrub	Standard	Edit Delete	↑ ↓
FB6/6 - Dormant brush, hardwood slash (Static)	6	5		Shrub	Standard	Edit Delete	↑ ↓
FB7/7 - Southern rough (Static)	7	6		Shrub	Standard	Edit Delete	↑ ↓
FB8/8 - Short needle litter (Static)	8	7		Timber Litter	Standard	Edit Delete	↑ ↓
FB9/9 - Long needle or hardwood litter (Static)	9	8		Timber Litter	Standard	Edit Delete	↑ ↓
FB10/10 - Timber litter & slash (Static)	10	9		Timber Litter	Standard	Edit Delete	↑ ↓

Edit Option

Name

FB1/1 - Short grass (Static)

Index

1

Filter Tags

☒ Grass
☐ Grass Shrub
☐ Shrub
☐ Timber Understory
☐ Timber Litter
☐ Slash Blowdown

Color Tag

Standard

Hide Option?

☐

Default

☐ False
☐ True

Update

Worksheet Translation

Language	Key	Translation
English	behavepluslist-option:surface-fuel-models:fm1---short-grass-(s)	FB1/1 - Shor

Result Translation

Language	Key	Translation
English	behavepluslist-option:results:surface-fuel-models:fm1---short-grass-(s)	FB1/1

Figure 18: VMS: List Page

2.3 Tags

1. Navigate to the tag set associated with your group variable of interest. See [Filter and Color Tags associated with a Group Variable](#)
2. Click "Edit" on the tag set. This will populate the table on the right.
3. Click "Edit" on the tag option you'd like to update.
4. Update the "Translation" field and the "Name" field.

Tag-Sets / Tags

Name	Modify
Fuel Region Categories	Edit Delete
Fuel Types	Edit Delete
Region Codes	Edit Delete

Edit Tag-Set

Name:

Colored Tags? ☒

[Update](#)

Edit Tag

Name	Modify	Reorder
Standard	Edit Delete	↑ ↓
Mediterranean	Edit Delete	↑ ↓
Chapparal and Coastal Sage Shrub	Edit Delete	↑ ↓

Worksheet Translation

Language	Key	Translation
English	behaveplus:tags:fuel-region-categories:chapparal-and-coastal-sage-shrub	<input type="text" value="Chapparal & Cc"/>

Figure 19: VMS: Updating translations on tags page.

3 Updating Default Custom Unit Preferences

4 Re-Ordering