

# Hitchhiker's Guide to the Variable Management System (VMS)



FireLab VMSApplicationsVariablesVariable DomainsListsTagsUnitsLanguagesInvite User

Applications

BehavePlus

Applications

Name	Version	Modify
BehavePlus	7.0.0	<div>EditDelete</div>

Add Application

Name

Major Version

Minor Version

Patch Version

Create

# Contents

<b>1</b>	<b>Finding VMS elements in the Application</b>	<b>3</b>
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
1.5.1	Variable Domain Entities	13
1.5.2	Variable Domains Associated with a Group Variable	14
1.6	Units and Precision	16
1.7	Conditionals	17
1.7.1	Submodule/Group Conditionals	17
1.7.2	Action Conditionals	18
<b>2</b>	<b>Updating Text</b>	<b>23</b>
2.1	Submodule/Group/Group-Variables	24
2.2	List Options	25
2.3	Tags	27
<b>3</b>	<b>Updating Default Unit Preferences</b>	<b>28</b>
3.1	Units	28
3.2	Precision	29
<b>4</b>	<b>Updating Units Dropdown Selections</b>	<b>30</b>
<b>5</b>	<b>Re-Ordering</b>	<b>31</b>

## 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 application 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

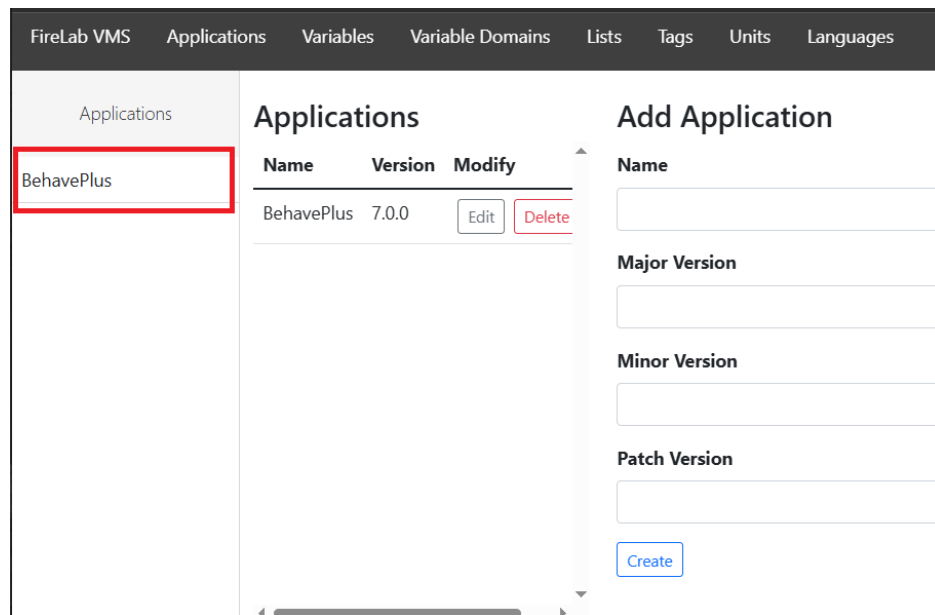


Figure 1: VMS: Home page

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 worksheet 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 worksheet 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
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.

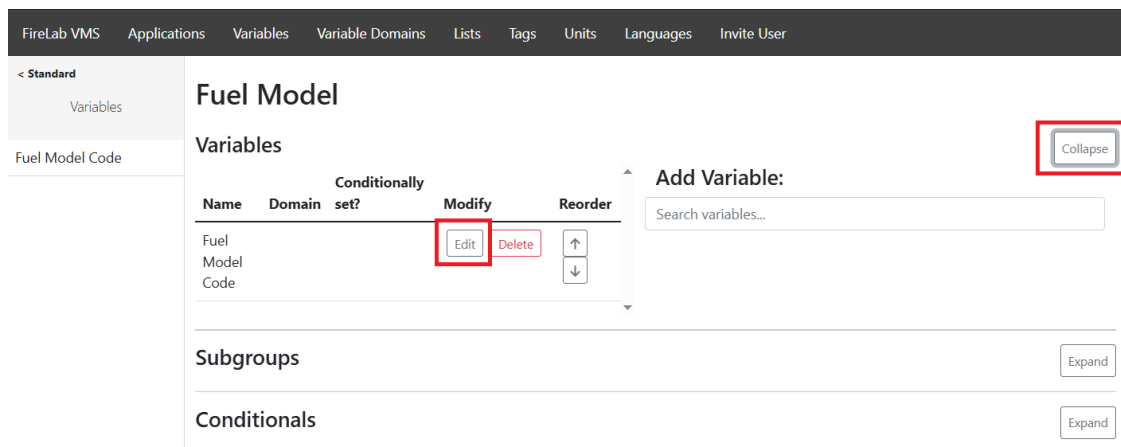


Figure 4: VMS: Finding the variable associated with a group variable

### 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 web application 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 tabbed interface below shows "Fuel Model", "Fuel Moisture", and "Wind and Slope" tabs, with "Wind and Slope" being the active tab. The "Wind measured at:" section contains a "List" label and three radio button options: "Midflame (Eye Level)", "20-Foot", and "10-Meter". The "10-Meter" option is selected and highlighted with a red box and a red arrow pointing to it from the "List Option" label. Below this, the "Wind and slope are" section has two radio button options: "Aligned (Wind is  $\leq 30^\circ$  from upslope)." and "Not Aligned (Wind is  $> 30^\circ$  from upslope.)". The "Slope" section includes 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 drop down.

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.



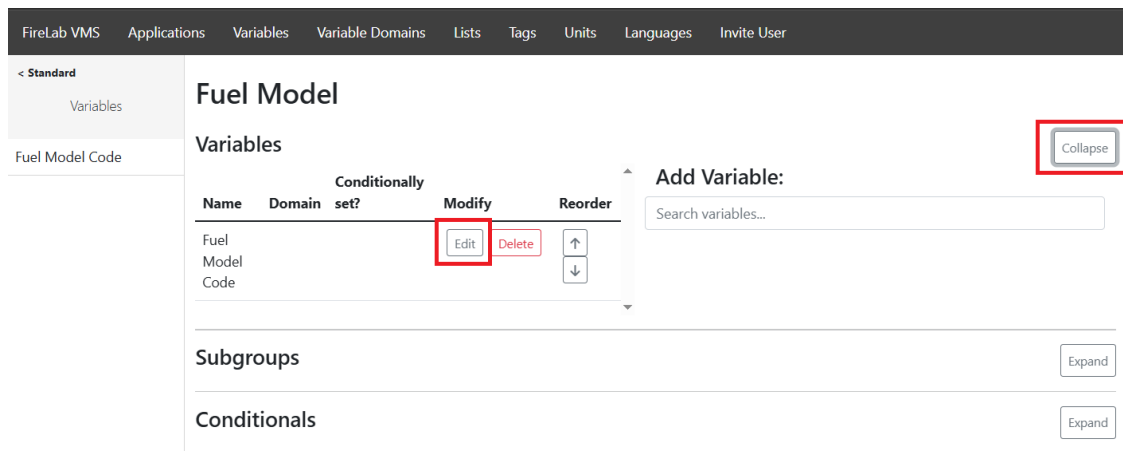


Figure 7: VMS: Group page

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

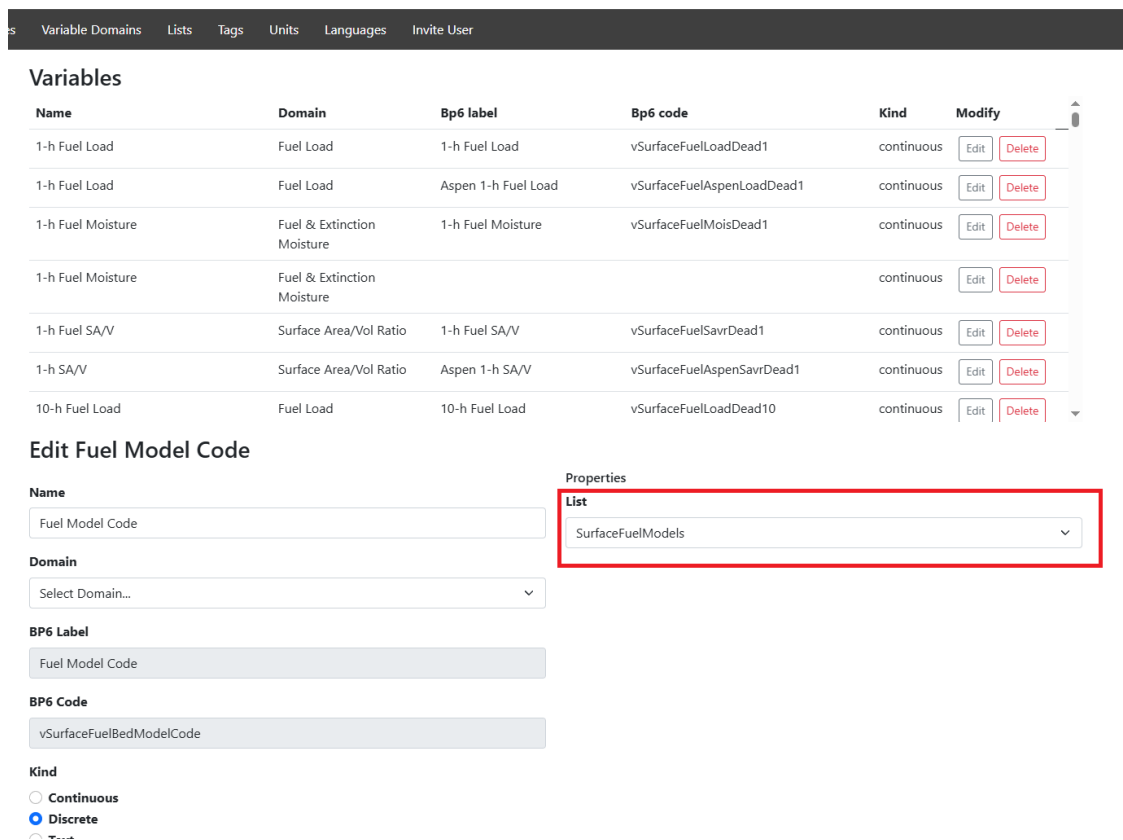


Figure 8: VMS: Variables page

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	<a>Edit</a> <a>Delete</a>
ScorchHeightOrFlameLength	<a>Edit</a> <a>Delete</a>
SpotFireSource	<a>Edit</a> <a>Delete</a>
SurfaceFuelModels	<a>Edit</a> <a>Delete</a>
SurfaceRunInDirectionOf	<a>Edit</a> <a>Delete</a>
SurfaceSpreadDirectionMode	<a>Edit</a> <a>Delete</a>
TimeZone	<a>Edit</a> <a>Delete</a>
TreeSpeciesList	<a>Edit</a> <a>Delete</a>

### 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

Value

Order

Default

Tags

Color tag

Modify

Reorder

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 buttons for 'Grass', 'Grass Shrub', 'Shrub', 'Timber Understory', 'Timber Litter', and 'Slash Blowdown'. The 'Color Tag Set' includes buttons for '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 (indicated by a '+' icon). At the bottom, there's a 'Selected Fuel Model Code' section with a 'View' button and a 'Back' button.

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

You can find existing tags in the VMS by:

1. Navigate to the "Tags" tab

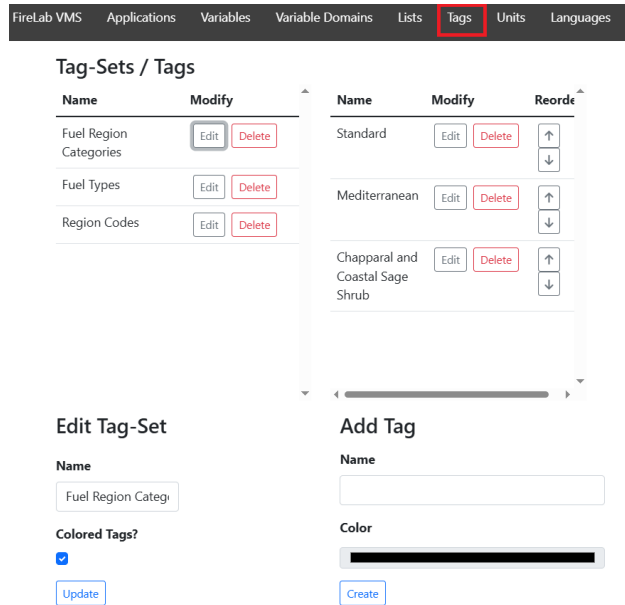


Figure 11: VMS: Tags page

### 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.

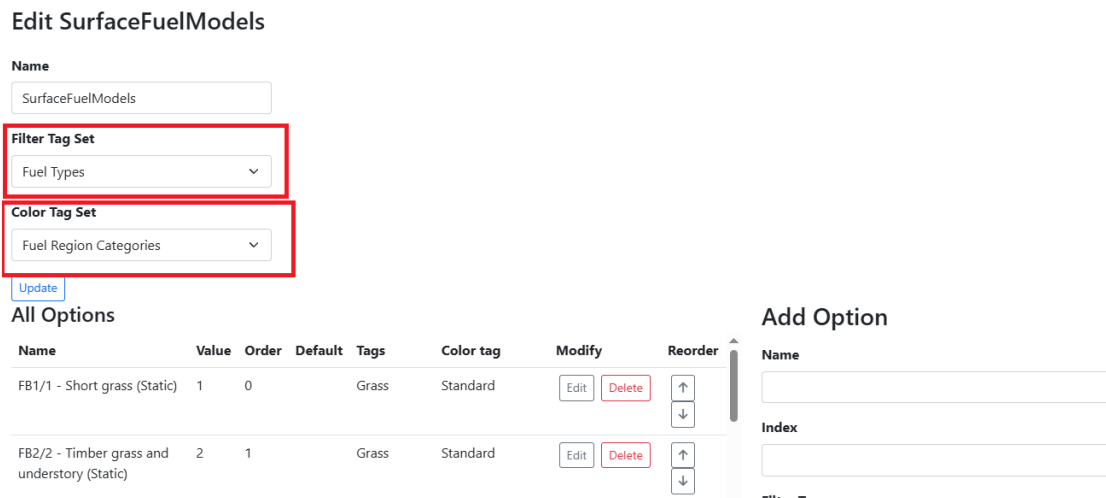


Figure 12: VMS: List page

## 1.5 Variable Domains

### 1.5.1 Variable Domain Entities

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 of an application. On the left, a sidebar contains icons for 'Surface', 'Crown', 'Contain', 'Mortality', 'Calculator', and 'Settings'. The 'Settings' icon is highlighted with a red box. The main panel 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' (units: 'ch', decimals: '0') and 'Line Production Rate' (units: 'ch/h'). Below the table, there are five accordion-style sections: 'Fire & Effects', 'Fuel & Vegetation', 'Terrain & Spotting', 'Time & Map', and 'Weather', each with a '+' icon on the 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.

FireLab VMS
Applications
Variables
Variable Domains
Lists
Tags
Units
Languages

### Domain Sets

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

### Domains

Name	Modify
Containment Distances	<div>Edit</div> <div>Delete</div>
Line Production Rate	<div>Edit</div> <div>Delete</div>

### Edit Domain Set

..

### Add Domain

Name

Figure 14: VMS: Variable Domains.

### 1.5.2 Variable Domains Associated with a Group Variable

1. Find the Variable associated with your group variable of interest. see [Variable Associated with a Group Variable](#) section
2. You can find the domain associated to the variable under the "Domain" field

FireLab VMS
Applications
Variables
Variable Domains
Lists
Tags
Units
Languages
Invite User

### Variables

Name	Domain	Bp6 label	Bp6 code	Kind	Modify
1-h Fuel SA/V	Surface Area/Vol Ratio	1-h Fuel SA/V	vSurfaceFuelSavrDead1	continuous	<a href="#">Edit</a> <a href="#">Delete</a>
1-h SA/V	Surface Area/Vol Ratio	Aspen 1-h SA/V	vSurfaceFuelAspenSavrDead1	continuous	<a href="#">Edit</a> <a href="#">Delete</a>
10-h Fuel Load	Fuel Load	10-h Fuel Load	vSurfaceFuelLoadDead10	continuous	<a href="#">Edit</a> <a href="#">Delete</a>
10-h Fuel Moisture	Fuel & Extinction Moisture	10-h Fuel Moisture	vSurfaceFuelMoisDead10	continuous	<a href="#">Edit</a> <a href="#">Delete</a>
10-m wind and wind adjustment factor	Wind Speed	10-m Wind Speed (upslope)	vWindSpeedAt10MUpslope	continuous	<a href="#">Edit</a> <a href="#">Delete</a>
100-h Fuel Load	Fuel Load	100-h Fuel Load	vSurfaceFuelLoadDead100	continuous	<a href="#">Edit</a> <a href="#">Delete</a>
100-h Fuel Moisture	Fuel & Extinction	100-h Fuel Moisture	vSurfaceFuelMoisDead100	continuous	<a href="#">Edit</a> <a href="#">Delete</a>

### Edit Heading Rate of Spread

**Name**

**Domain**

**BP6 Label**

**BP6 Code**

**Properties**  
**Dimension**

**English Units**

**English Decimal**

**Metric Units**

Figure 15: VMS: The Domain associated with this variable.

## 1.6 Units and Precision

Default Units and Precision live in the Domain Entities.

1. Find the Domain associated with your group variable see [Variable Domains Associated with a Group Variable](#) section.
2. Navigate to the "Domains" page and lookup the domain.
3. Click "Edit" on the "Domain Set" and "Edit" on the "Domain" entity to populate the forms.
4. Default units is shown under "Native Unit"
5. Default precision is shown under "Decimals"

The figure displays four screenshots from the VMS interface. The top-left screenshot shows the 'Domain Sets' table with columns 'Name' and 'Modify'. The 'Contain' row has its 'Edit' button highlighted with a red box. The top-right screenshot shows the 'Domains' table with columns 'Name' and 'Modify'. The 'Containment Distances' row has its 'Edit' button highlighted with a red box. The bottom-left screenshot shows the 'Edit Domain Set' form with the 'Name' field set to 'Contain' and an 'Update' button. The bottom-right screenshot shows the 'Edit Domain' form for 'Containment Distances'. In this form, the 'Decimals' field (set to 0) and the 'Native Unit' dropdown (set to 'Chains (ch)') are highlighted with red boxes. Other fields include 'Dimension' (Length), 'English Unit' (Chains (ch)), 'Metric Unit' (Meters (m)), and 'Filtered Units' (Chains (ch) and Feet (ft) are checked).

Name	Modify
Contain	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Fire & Effects	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Fuel & Vegetation	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Terrain & Spotting	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Time & Map	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Weather	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

Name	Modify
Containment Distances	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Line Production Rate	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

**Edit Domain Set**

Name:

**Edit Domain**

Name:

Decimals:

Dimension:

Native Unit:

English Unit:

Metric Unit:

Filtered Units

- ☒ Chains (ch)
- ☒ Feet (ft)
- ☐ Inches (in)
- ☐ Miles (mi)

Figure 16: VMS: The Domain associated with this variable.



## 1.7 Conditionals

Conditionals serve one of two purposes. First and most common is to determine if Submodule or group should be displayed in the application. The second purpose is to attach them to actions. When attached to actions the conditional determines if that action should be fired (i.e. setting an input group variable to a default value if a certain output group variable is selected).

### 1.7.1 Submodule/Group Conditionals

To find a conditional that controls if Submodule/groups are hidden:

1. Navigate to the Submodule/group entity page and expand the "Conditionals" accordion

The screenshot displays the VMS interface for configuring conditionals. On the left, a sidebar lists 'Surface Submodules' including Groups, Burning Pile, Canopy Fuel, Surface Fire Flame Length, and Topography. The main area is titled 'Spot (input)' and contains a 'Groups' section and a 'Conditionals' section. The 'Conditionals' section shows three conditions, with the third one selected. The 'Manage Conditionals' panel on the right provides details for the selected condition: Module: Surface, Submodule: Spot (output), Group/Subgroup: Maximum Spotting Distance, Variable: Max Spot Dist from Wind-Driven Su, Operator: =, Value: True.

Figure 17: VMS: Conditionals to only show the Spot(input) submodule if either these output variables are selected. NOTE: Clicking "Edit" on the conditional will populate the form on the right. This is useful to see where this group variable belongs and not just its module and name. (i.e. The conditional above belongs to the Surface (Module) → Spot Output (Submodule) → Maximum Spotting Distance (group)).

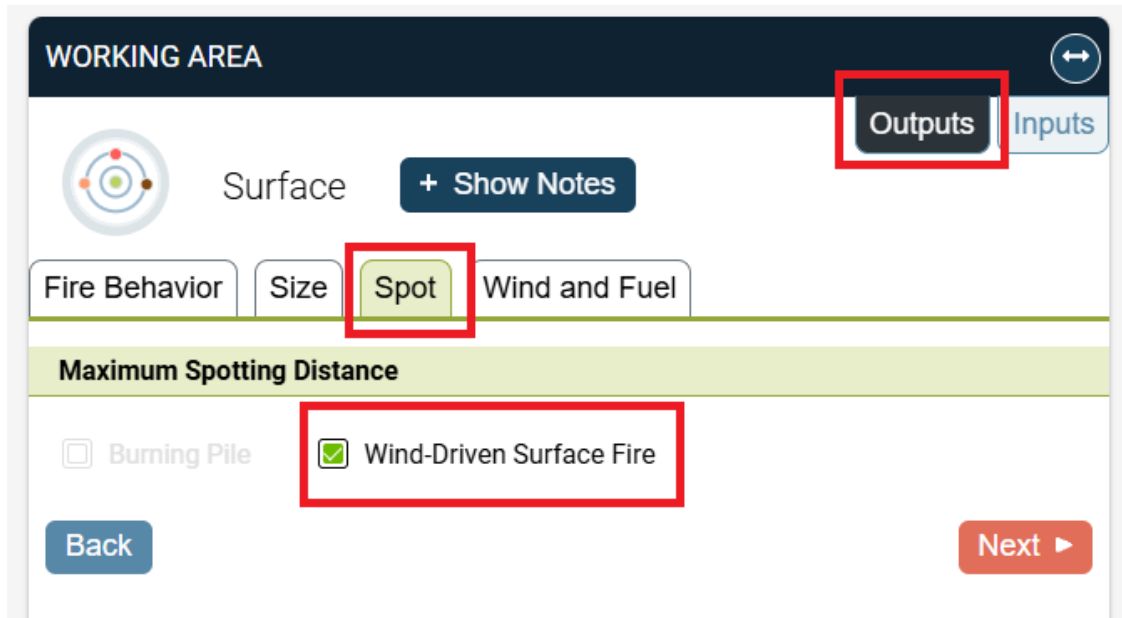


Figure 18: Application: "Wind Driven Surface Fire" is selected as an output.

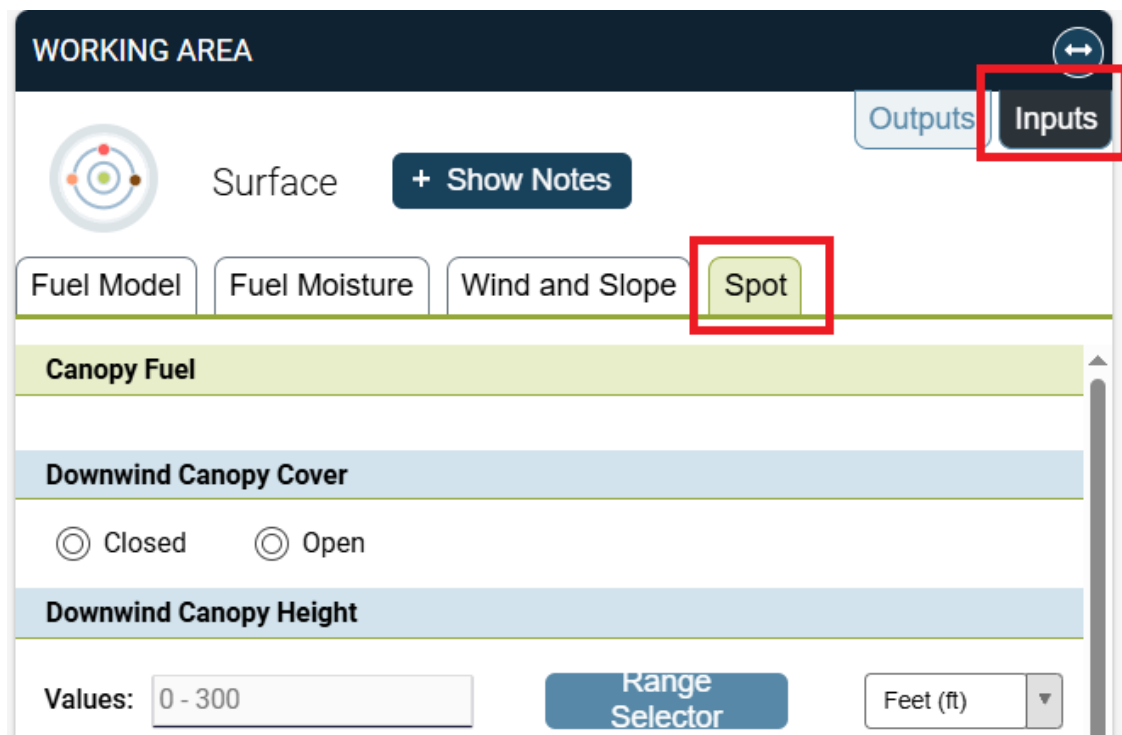


Figure 19: Application: Since "Wind-Driven Surface Fire" is selected as an output, the Spot(Input) submodule passes the conditional and is displayed.

### 1.7.2 Action Conditionals

To find a conditional attached to an action:

1. Navigate to the Group Variable entity page and expand the "Actions" accordion

< Wind measured at:

Variables

Wind Measured at

Wind Measured at

Translations

Help Page

CPP Functions

Links

Actions

Add Action:

Action Name:

Expand

Expand

Expand

Expand

Collapse

Name	Type	Target value	Modify
Default to 20 Ft Wind Speed when Spot Outputs selected OR Surface + Crown	select	1	<div>Edit</div> <div>Delete</div>
Disable Midflame when Midflame is selected as an output in Surface Module	disable	0	<div>Edit</div> <div>Delete</div>
Disable Midflame when Spot Outputs selected OR Surface + Crown	disable	0	<div>Edit</div> <div>Delete</div>

Figure 20: VMS: Group Variables can have multiple actions.

Disable Midflame when Spot Outputs selected OR Surface + Crown
disable 0

Edit
Delete

### Edit Action:

**Action Name:**

**Action Type:**

☐ Select  
☒ Disable

**Option:**

**Conditionals**

**Conditional Operator:**

**Conditional Type:**

☐ Module  
☒ Variable

<b>Module:</b>	<b>Submodule:</b>	<b>Group/Subgroup:</b>
<input type="text" value="Surface"/>	<input type="text" value="Spot (output)"/>	<input type="text" value="Burning Pile"/>
<b>Variable:</b>	<b>Operator:</b>	<b>Value:</b>
<input type="text" value="Firebrand Height from a Burning Pile"/>	<input "="" type="text" value="="/>	<input type="text" value="True"/>


Figure 21: VMS: Each action has one or more conditionals. The name of the action should describe what is necessary to trigger the action but to more closely look at the conditionals, click "Edit" on the action you are interested in.

WORKING AREA

↔

Outputs

Inputs

 Surface 

+ Show Notes

Fire Behavior

Size

Spot

Wind and Fuel

Wind

☒ Midflame Wind Speed

Fuel

☐ Total Live Fuel Load

☐ Total Dead Fuel Load

☐ Total Dead Herbaceous Fuel Load

Back

Next ▶

Figure 22: Application: "Midflame Wind Speed" is selected as an output

WORKING AREA

Surface

+ Show Notes

Outputs

Inputs

Fuel Model

Fuel Moisture

Wind and Slope

Wind measured at:

☐ Midflame (Eye Level)

☐ 20-Foot

☐ 10-Meter

Wind and slope are

☐ Aligned (Wind is  $\leq 30^\circ$  from upslope).

☐ Not Aligned (Wind is  $> 30^\circ$  from upslope).

Slope

Values: 0 - 604

Range Selector

Units used: %

Back

Next ▶

Figure 23: Application: Action is triggered to disable "Midflame (Eye Level)" as an option in the inputs page.

## 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 24: VMS: Group page after navigating BehavePlus → Surface → Fire Behavior(output) → Surface Fire



## 2.2 List Options

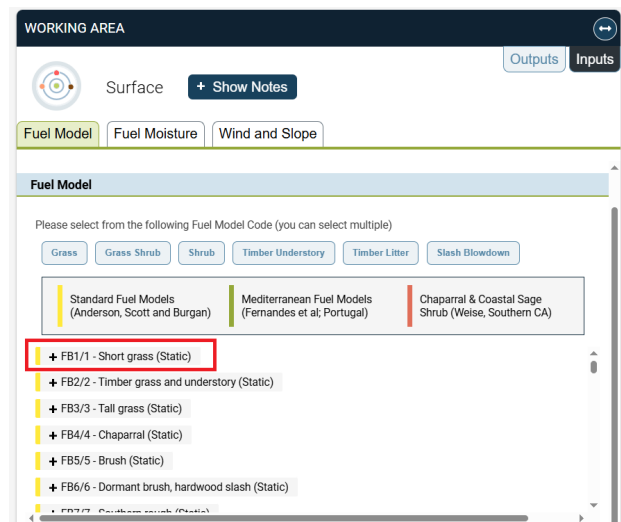


Figure 25: Application: Worksheet translations appear in the wizard.

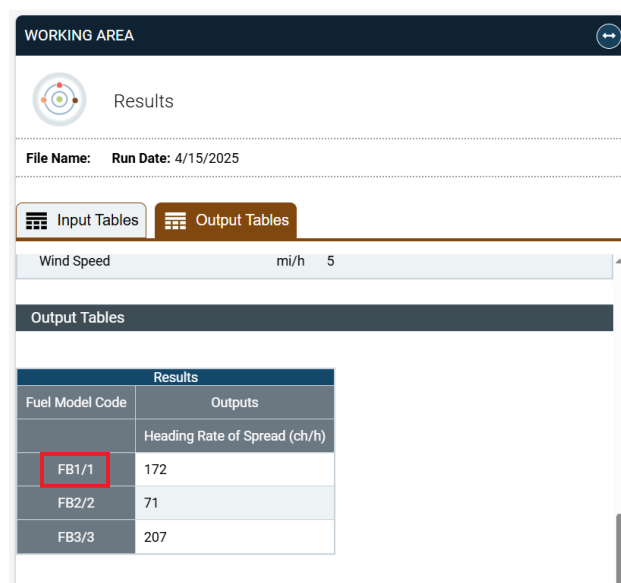


Figure 26: Application: Result translations appear in the results matrices and tables.

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

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 27: 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.

The screenshot displays the VMS interface for managing tags. At the top is a navigation bar with links: Applications, Variables, Variable Domains, Lists, Tags, Units, Languages, and Invite User. Below this is the 'Tag-Sets / Tags' section, which contains two tables. The left table, 'Tag-Sets', lists 'Fuel Region Categories', 'Fuel Types', and 'Region Codes'. The 'Edit' button for 'Fuel Region Categories' is highlighted with a red box. The right table, 'Tags', lists 'Standard', 'Mediterranean', and 'Chapparal and Coastal Sage Shrub'. The 'Edit' button for 'Chapparal and Coastal Sage Shrub' is highlighted with a red box. Below these tables are two side panels. The left panel, 'Edit Tag-Set', shows the 'Name' field with 'Fuel Region Categories' and a 'Colored Tags?' checkbox that is checked. The right panel, 'Edit Tag', shows the 'Name' field with 'Chapparal and Coastal Sage Shrub', a 'Color' field with a red color bar, and a 'Worksheet Translation' table. The 'Worksheet Translation' table has columns for 'Language', 'Key', and 'Translation'. The 'Translation' field for the 'English' row is highlighted with a red box and contains the text 'Chapparal & Cc'.

Name	Modify
Fuel Region Categories	<a href="#">Edit</a> <a href="#">Delete</a>
Fuel Types	<a href="#">Edit</a> <a href="#">Delete</a>
Region Codes	<a href="#">Edit</a> <a href="#">Delete</a>

Name	Modify	Reorder
Standard	<a href="#">Edit</a> <a href="#">Delete</a>	<a href="#">↑</a> <a href="#">↓</a>
Mediterranean	<a href="#">Edit</a> <a href="#">Delete</a>	<a href="#">↑</a> <a href="#">↓</a>
Chapparal and Coastal Sage Shrub	<a href="#">Edit</a> <a href="#">Delete</a>	<a href="#">↑</a> <a href="#">↓</a>

### Edit Tag-Set

Name:

Colored Tags? ☒

[Update](#)

### Edit Tag

Name:

Color:

[Update](#)

### Worksheet Translation

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

Figure 28: VMS: Updating translations on tags page.

## 3 Updating Default Unit Preferences

### 3.1 Units

1. Find the Domain associated with the variable you are interested in. See [Variable Domains Associated with a Group Variable](#) section.
2. Click "Edit" on the Domain set
3. Click "Edit" on the Domain found in step 1.
4. Update the "Native Unit" field

**Domain Sets**

Name	Modify
Contain	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Fire & Effects	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Fuel & Vegetation	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Terrain & Spotting	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Time & Map	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Weather	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

**Edit Domain Set**

Name  
Contain

**Domains**

Name	Modify
Containment Distances	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Line Production Rate	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

**Edit Domain**

Name  
Containment Distances

Decimals  
0

Dimension  
Length

**Native Unit**  
Chains (ch)

**English Unit**  
Chains (ch)

**Metric Unit**  
Meters (m)

**Filtered Units**

- ☒ Chains (ch)
- ☒ Feet (ft)
- ☐ Inches (in)
- ☐ Miles (mi)

Figure 29: VMS: Updating translations on tags page.

### 3.2 Precision

1. Follow the steps from [above](#) to find the Domain entity.
2. Update the "Decimals" field

The image displays four screenshots from the VMS interface, illustrating the steps to update the 'Decimals' field for a domain entity.

**Domain Sets Table:**

Name	Modify
Contain	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Fire & Effects	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Fuel & Vegetation	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Terrain & Spotting	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Time & Map	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Weather	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

**Domains Table:**

Name	Modify
Containment Distances	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Line Production Rate	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

**Edit Domain Set Form:**

Name:

**Edit Domain Form:**

Name:

**Decimals:**

**Dimension:**

**Native Unit:**

**English Unit:**

**Metric Unit:**

**Filtered Units:**

- ☒ Chains (ch)
- ☒ Feet (ft)
- ☐ Inches (in)
- ☐ Miles (mi)

Figure 30: VMS: Updating translations on tags page.

## 4 Updating Units Dropdown Selections

In the Application's inputs page a user can change units via a drop down menu. By default a variable is linked to a "Dimension" (i.e. length) and will have all options available to select. However there are cases when this list should be limited to a subset. If this is desired do the following:

1. Find the Domain associated with the variable you are interested in. See [Variable Domains Associated with a Group Variable](#) section.
2. Click "Edit" on the Domain set
3. Click "Edit" on the Domain found in step 1.
4. Under "Filtered Units" select a subset of your desired units

The image shows two side-by-side screenshots of the VMS Domains Page. The left screenshot shows a list of domains with 'Fuel & Vegetation' selected. The right screenshot shows the 'Edit Domain' form for 'Tree & Canopy Height' with the 'Filtered Units' section expanded, showing a list of units where 'Feet (ft)' and 'Meters (m)' are selected.

**Left Screenshot: Domains List**

Domain	Edit	Delete
Fire & Effects	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Fuel & Vegetation	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Terrain & Spotting	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Time & Map	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Weather	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

**Edit Domain Set**

Name:

**Right Screenshot: Edit Domain Form**

Name:

Decimals:

Dimension:

Native Unit:

English Unit:

Metric Unit:

**Filtered Units**

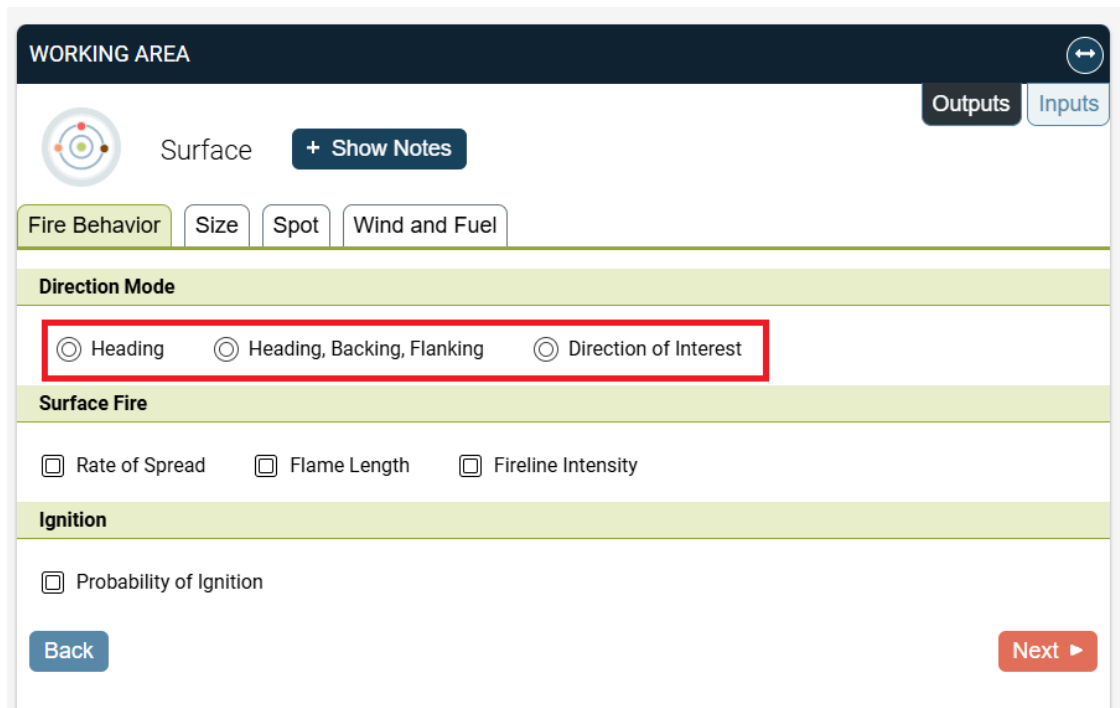
- ☐ Chains (ch)
- ☒ Feet (ft)
- ☐ Inches (in)
- ☐ Miles (mi)
- ☐ Centimeters (cm)
- ☐ Kilometers (km)
- ☒ Meters (m)
- ☐ Millimeters (mm)

Figure 31: VMS: Domains Page Updating Units drop down to a subset of units.

## 5 Re-Ordering

Certain entities can be re-ordered via the VMS. To do this:

1. Find the parent entity of the entity you are trying to reorder (i.e. Need to reorder groups? find the submodule entity page. Need to reorder a list options? Find the List entity page.). See [Finding VMS elements in the Application](#)
2. Once you're on that page there should be a table that have a list of entities for you to reorder. Click on the "up" and "down" buttons to reorder



The screenshot shows a web application interface for configuring fire simulation parameters. At the top is a dark blue header labeled 'WORKING AREA' with a double-headed arrow icon. Below the header, there's a 'Surface' section with a circular icon and a '+ Show Notes' button. To the right are 'Outputs' and 'Inputs' tabs. Under 'Surface', there are four tabs: 'Fire Behavior' (selected), 'Size', 'Spot', and 'Wind and Fuel'. The 'Fire Behavior' tab contains a 'Direction Mode' section with three radio button options: 'Heading', 'Heading, Backing, Flanking', and 'Direction of Interest'. The 'Direction of Interest' option is selected and highlighted with a red rectangular box. Below this is a 'Surface Fire' section with three checkboxes: 'Rate of Spread', 'Flame Length', and 'Fireline Intensity'. At the bottom is an 'Ignition' section with a checkbox for 'Probability of Ignition'. Navigation buttons 'Back' and 'Next' are located at the bottom left and right respectively.

Figure 32: Application: Reordering Direction Mode output selections.

## Direction Mode

### Variables

Name	Domain	Conditionally set?	Modify	Reorder
Heading			<a href="#">Edit</a> <a href="#">Delete</a>	<a href="#">↑</a> <a href="#">↓</a>
Heading, Backing, Flanking			<a href="#">Edit</a> <a href="#">Delete</a>	<a href="#">↑</a> <a href="#">↓</a>
Direction of Interest			<a href="#">Edit</a> <a href="#">Delete</a>	<a href="#">↑</a> <a href="#">↓</a>


### Add Variable:

### Subgroups

[Expand](#)

Figure 33: VMS: Reordering Direction Mode output selections: Navigate to BehavePlus → Surface → Fire Behavior(output) → Direction Mode

**WORKING AREA**

 Surface [+ Show Notes](#)

[Outputs](#) [Inputs](#)

[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](#)

Figure 34: Application: Reordering fuel model codes.



SurfaceFuelModels

EditDelete

SurfaceRunInDirectionOf

EditDelete

SurfaceSpreadDirectionMode

EditDelete

TimeZone

EditDelete

TreeSpeciesFofem

EditDelete

### Edit SurfaceFuelModels

Name

SurfaceFuelModels

Filter Tag Set

Fuel Types

Color Tag Set

Fuel Region Categories

Update

#### All Options

Name	Value	Order	Default	Tags	Color tag	Modify	Reorder
FB1/1 - Short grass (Static)	1	0		Grass	Standard	EditDelete	↑ ↓
FB2/2 - Timber grass and understory (Static)	2	1		Grass	Standard	EditDelete	↑ ↓
FB3/3 - Tall grass (Static)	3	2		Grass	Standard	EditDelete	↑ ↓
FB4/4 - Chaparral (Static)	4	3		Shrub	Standard	EditDelete	↑ ↓

#### Add Option

Name

Index

Filter Tags

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

Figure 35: VMS: Reordering fuel model codes. Find list "SurfaceFuelModels" and click "Edit".