Using AusFarm's new features.

Version 1.4.8-1.4.9

1 Manager scripts

1.1 New function

A new inbuilt function has been added to the Manager component. DayOfYear() simplifies script writing my making the setting of day numbers more understandable.

```
 8
 9 define integer sale_date
10
11 set sale_date = DayOfYear('1-Jan')
12
13
```

Examples:

dayofyear('1-Jul')
dayofyear('Dec-31')
dayofyear('12 Aug 1961')

Where delimiters can be '-' or ' ' or '/'
Month names must be the first three characters from the English month name.
The Year must be four digits. Where the year is not specified a non-leap year is assumed.

1.2 Constants

1.2.1 Used for initialisation

Constants that are defined in Manager scripts can be used to initialise the size of arrays if necessary. This simplifies the scripts and makes it easier to apply changes to scripts by reducing redundancy of information.

For example:

```
1
2
3 define const integer PADD_COUNT      =  7     ! Actual number of paddocks
4
5 define text     padd_name[PADD_COUNT]        = ['farm.hill01', 'farm.hill02', 'farm.hill03', 'fa
6 define integer padd_to_system[PADD_COUNT]  = [1, 1, 1, 2, 2, 2, 2]
```

1.2.2 Can be set from the results of expressions

Variables and constants can be initialised with the results of expressions.

For example:

```
15
16 define text     file_prefix  = 'c:\temp\SimpleMixed'
17 define real      file_version = 1.0
18
19 define const string file_name_base = file_prefix & ' v' & str(file_version,'3.1f')
20
21 define const integer join_start = DayOfYear('1-Feb')   ! Joining day-of-year for sheep (1 Feb)
22
```
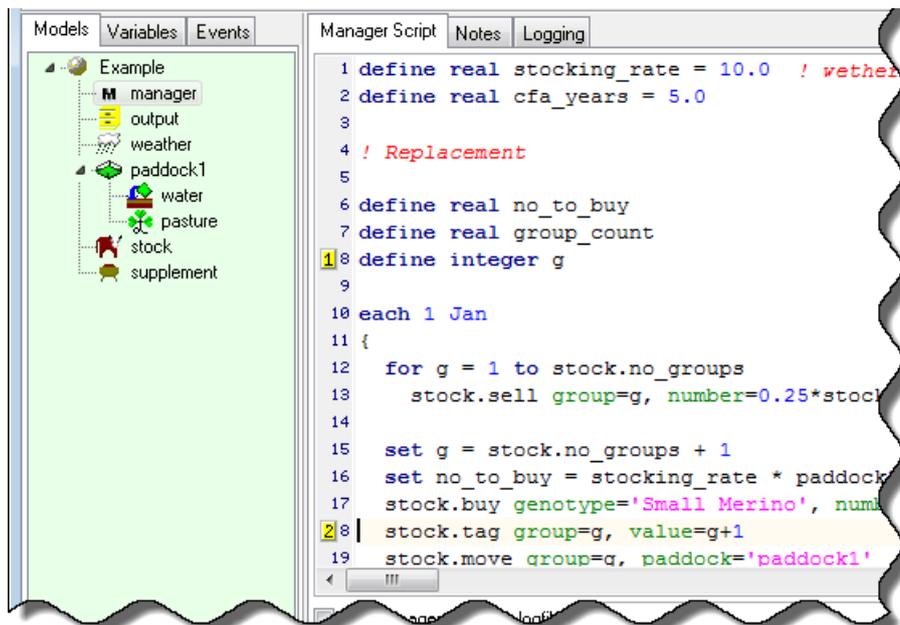
1.3 Bookmarks

To set bookmarks in the script there is a keyboard combination that performs this task. To set a bookmark use the key combination, CTRL + Shift + 1. When a bookmark is set you will see a small number icon in the left hand gutter of the editor. To unset the bookmark, ensure the cursor is on the line of the bookmark and use the same key combination. You can have up to nine bookmarks on each Manager editor. Just use the CTRL + Shift + *number* combination for any extra bookmark.
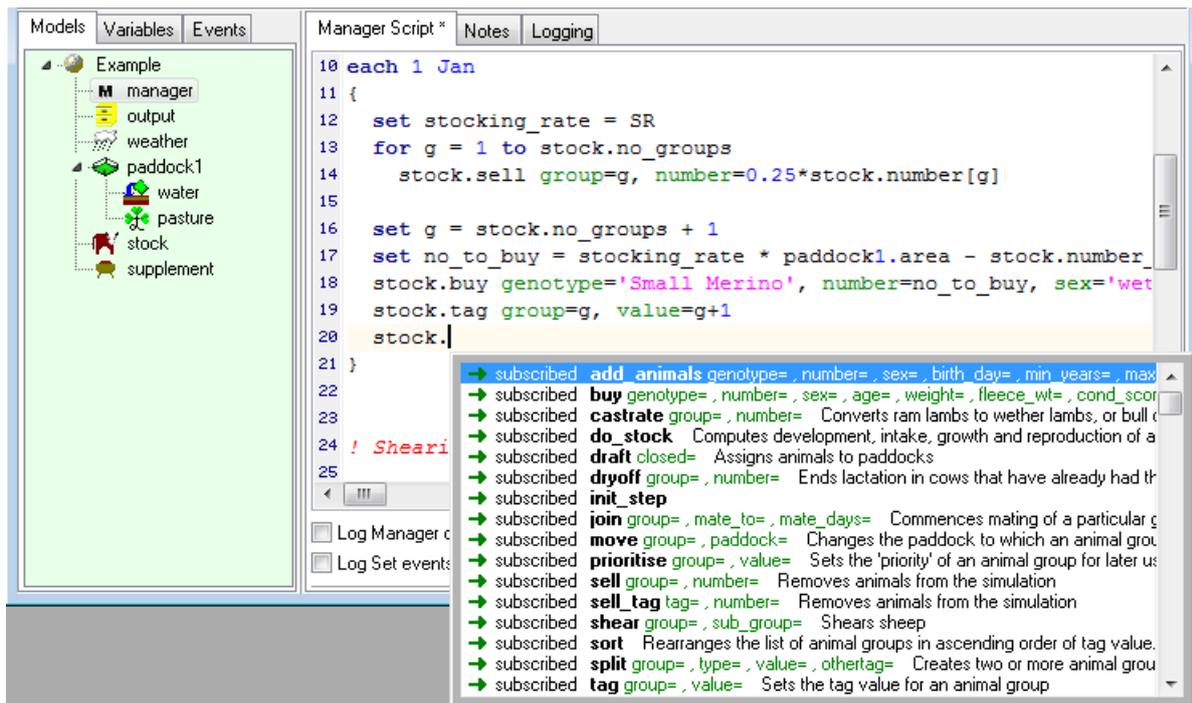
Once a bookmark has been set in a script, it is easy to go to that line at any time using the key combination CTRL + *number*.

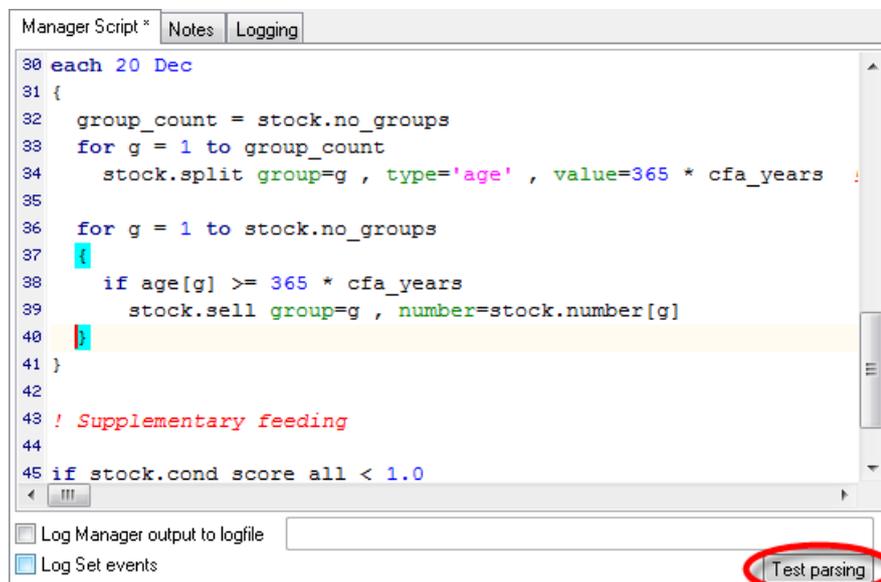Bookmarks are shown in the following figure.

1.4 Code completion

When typing management script and the name of one of the components is followed by a period, by waiting for around one second a window will popup showing a list of properties and events that belong to this component. In the example below you can see a list of the events that can be triggered in the stock component. Highlight the preferred event in the list using the up or down arrow keys on the keyboard or use the mouse cursor to select it. By then pressing enter on the keyboard it will be inserted into the Manager script.

1.5 Matching braces

To assist with formatting the Manager script correctly the editor shows clearly the matching braces in the script. When the cursor is placed on a [, {, or (type of braces the corresponding one is also highlighted. As shown in the figure below.

2   Initial property and parameter sections for APSIM components

APSIM components use xml script to define the initial property settings and model parameters. Previously in AusFarm the initial values and parameters have been visible in xml text form. This has been changed so that only the initial values are now visible. AusFarm will still function with the previous form but the new form is more reliable.

The previous view:

```
001 <initdata>
002     <name>pasture</name>
003     <type>pasture</type>
004     <mass>1000.0</mass>
005     <cnr>   60.0</cnr>
006     <standing_fraction>0.0</standing_fraction>
007
008     <!-- ==== Standard constants below this point ==== -->
009
010         <crit_residue_wt>                  2000.0     </crit_residue_wt>
011         <opt_temp>                           20.0     </opt_temp>
012         <cum_eos_max>                        20.0     </cum_eos_max>
013         <cnrf_coeff>                          0.277   </cnrf_coeff>
014         <cnrf_optcn>                         25.0     </cnrf_optcn>
015         <c_fract>                             0.4     </c_fract>
016         <leach_rain_tot>                     25.0     </leach_rain_tot>
017         <min_rain_to_leach>                  10.0     </min_rain_to_leach>
018         <crit_min_surfom_orgC units="kg/ha">  0.004   </crit_min_surfom_orgC>
019         <default_cpr>                         0.0     </default_cpr>
020         <default_standing_fraction>           0.0     </default_standing_fraction>
021         <standing_extinct_coeff>              1.0     </standing_extinct_coeff>
```

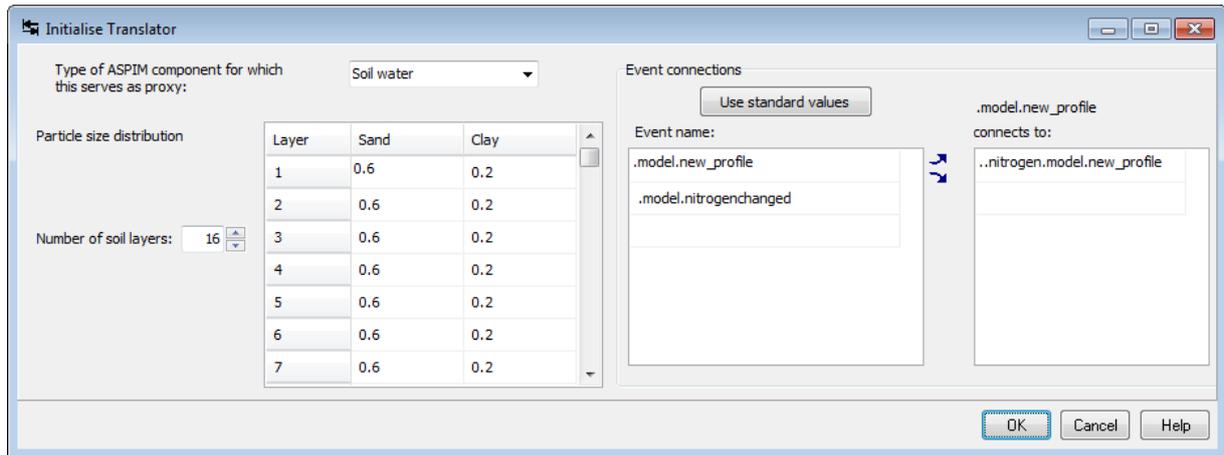When you drop an APSIM component into the model tree now this is what you would see:

```
001 <initdata>
002     <name></name>
003     <type></type>
004     <mass></mass>
005     <cnr></cnr>
006     <cpr></cpr>
007     <standing_fraction></standing_fraction>
008
009     <!-- ==== Standard constants below this point ==== -->
010     <!--[model]-->
011 </initdata>
```

The macro `<!--[model]-->` replaces the parameter section. This will ensure that your ASPIM components are always using the correct parameters for the model installed in your tool palette. All that is required is for the initial values to be filled in as shown in the previous image.

3 Translator initialisation dialog

The APSIM component translator component now has an initialisation dialog. This makes it much easier to configure the translator. The dialog is shown below.

More information in this can be found in the document; *AusFarm User Notes #1 .pdf*