



Introduction to VegSpec

Demonstration Instructions

<http://plants.usda.gov>

Summary: VegSpec is a decision support system designed to *assist in the selection of appropriate plant species* for site-specific conservation problems. VegSpec is not designed to replace FOTG standards. Results are designed to provide you with an initial, broad list of species that you might consider utilizing. VegSpec contains a library of approximately 2100 species and 400 cultivars. Each species and cultivar is characterized by nearly one hundred attributes. Users characterize a site by selecting a soil map unit and the nearest climate station from choice lists, which cover the entire United States. Users also characterize the site's current conditions and the objectives of the planting. VegSpec uses these specifications as filters to select appropriate plants from the plant library. The filters are encoded as a series of expert rules. These rules select species and cultivars based on the attributes. A planting design module provides information about propagule types, optimum-planting dates, species compatibility in mixed plantings, and establishment methods. The planting design module also provides spreadsheets, which users can use to calculate the required seed and vegetative propagule amounts for both single and multiple species plantings.

Again, the operation of VegSpec is based upon the 1) underlying plant characteristic data; 2) data pulled in from the Soils and Climate databases; and 3) rules in the software that filter these data. If the list that is generated for your area doesn't seem appropriate, please contact the VegSpec Data Steward (contact info can be found at the end of this document or on the VegSpec Home Page) with the particulars. This will assist us in tweaking the rules and data to better serve your area.

Plant Characteristics Data: The plant characteristics species/cultivar data upon which VegSpec relies can be found in the "Characteristics" portion of the PLANTS Web site (look in the "Plant topics" box on the right side of the Home Page). If you review these data and note inconsistencies, can provide more complete data, or have new data sources, please contact the VegSpec data steward.

You can also access these data through the "Advanced Query" that is accessible through the same box on the PLANTS Home Page. The "Advanced Query" permits you to filter these species and their associated cultivars using any of the characteristics and their values.

VegSpec can be used for providing vegetative options for consideration to assist your conservation efforts. VegSpec may recommend species for consideration that are not on the approved species list for practices in your State Field Office Technical Guide. Any species used in an NRCS practice needs to be approved by your NRCS technical representative.

Demonstration: As an introduction to VegSpec, we present an example of VegSpec use. The site is in Ada County, Idaho on a "Lankbush-Tindahay sandy loam" soil. The goal is to develop a plant list and planting design for a rangeland planting using plants that support upland wildlife habit and are native to North America.

1) **Introduction:** As an introduction to VegSpec, we present an example of VegSpec use. The site is in

Ada County, Idaho on a “Lankbush-Tindahay sandy loam” soil. The goal is to develop a plant list and planting design for a rangeland planting using plants that support upland wildlife habit and are native to North America.

- a) From Netscape 4.06/Internet Explorer 4.0 or higher version, enter the PLANTS Web site homepage address <http://plants.usda.gov>, followed by a carriage return on the web address line. *Note:* To ensure as fast an application as possible for all users, if you are not utilizing VegSpec for 30 minutes, your session will be discontinued and you will be returned to the beginning of the application and will have to re-input your selections.
- b) In the box in the upper right portion of the page entitled “Plant tools,” click on **VegSpec**.
- c) On the thin green bar in the upper portion of the screen, click on **Start VegSpec**.

There are five modules in the VegSpec application: 1) *Site Description*, 2) *Objectives*, 3) *Select Plants*, 4) *Planting Design*, and 5) *Report*. You will navigate through these modules consecutively by clicking on the name of each module within the “green bar” at the top of the VegSpec pages or clicking on the Next Page at the bottom of a module page.

- 2) **Site Description:** This is the beginning of the application. You are on the “Site Description” module. The “Site Description” name in the “green bar” at the top of the page will bring you back to this page from other modules in the application. You will begin to fill out all sections on this page. Please note that the “Site Description” name in the green bar is now dark, signifying that you are in the “Site Description” module.
 - a) **Identification:** The first box, labeled “Identification,” is optional. Please assign a “Site Name,” your “User Name,” and a “Project Location” name, if you would like them on the output.
 - b) **State:** Under “State,” select **Idaho** from the drop down box. This selection will limit the choice lists under “Soils” and “Climate” that you will utilize next. The screen will refresh.
 - c) **Soils:**
 - i) **Soil Survey Area ID:** From this drop down box, click on the arrow and pull down the menu. Highlight and click on the “ADA COUNTY AREA, IDAHO: 666.” Wait for the screen to refresh.
 - ii) **Soil Map Unit:** From the drop down box, click on the arrow and pull down the menu. Highlight and click on the “**lankbush-tindahay sandy loams, 0 to 2 percent slopes: 99.**” Wait for the screen to refresh.
 - iii) **Soil Component:** For the “Soil Component,” the default automatically comes up as “LANKBUSH:50%,” because it is the greatest component in this map unit. If you were to select another component, then you would need to wait for the screen to refresh after you selected it before continuing.
 - iv) **Soil Attributes Suboption:** In the text under the “Soils” heading is the blue hypertext entitled “[soil attributes suboption](#).” You may click on this and view “Soil Attributes” and the “Major Land Resource Area (MLRA)” for the site. For this demo, we will not change any features. If you have gone here, then click the “Cancel” button to return to the “Site Description” screen. If you changed values and want to save them, then click on the Site Description” button to return to the “Site Description” screen.

An MLRA map is on the Internet from the NRCS National Soil Survey Center at the following URL: http://soils.usda.gov/soil_survey/geography/mlra/main.htm

d) **Climate:**

- i) **Climate Station:** From the drop down box, click on the arrow and pull down the menu. Highlight and click on “**ID6174:MOUNTAIN HOME.**” Wait for the screen to refresh.
- ii) **Climate Attributes Suboption:** In the text under the “Climate” heading is the blue hypertext entitled “[climate attributes suboption.](#)” You may click on this and change any values. For this demo, please don't change anything. If you entered this section, then click the “Cancel” button at the top right of the screen to return to the “Site Description” screen. If you changed values and want to save them, then click on the “Site Description” button to return to the “Site Description” screen.

e) **Landscape:**

- i) For this demo, we will leave these three selections in the default state.

This completes the “Site Description” module. Please return to the “green bar” at the top of this page and click on the next module, entitled “Objectives.”

- 3) **Objectives:** When the “Objectives” page comes up, the “Objectives” will be highlighted on the green bar.
 - a) **Practice:** For this demonstration, click on the radio button to the left of “**Range Planting.**” Wait for the screen to refresh.
 - b) **Purpose:** Please select two (2) purposes: Click on the boxes for **Native Plant Community Restoration** and **Wildlife Upland Habitat.** Then, click on the **Accept Purpose(s)** button. Wait for the screen to refresh.
 - c) **Sub-Purpose:** Please do not select a sub-purpose from within the scroll box, nor click on the “Accept Sub-Purpose(s) button.
 - d) **Optional Plant Characteristics:** Look at these characteristics for “Plant Type,” “Commercial Availability,” and “Plant Origin,” but please do not check any of these boxes for this demo. These boxes provide additional filters for plant selection.

This completes the “Objectives” module. Please return to the “green bar” at the top of this page and click on the next module, entitled “Select Plants.”

- 4) **Select Plants:** After clicking on “Select Plants,” it may take up to a minute to provide the new screen. The program is processing and selecting potential plants for the site.
 - a) **Potential Plants:** You will see a list of possible plants that can be utilized in the left box. There

should also be a number below this box labeled “Potential Plants.” This is the number of potential plants that have been filtered by our selections on the previous pages (Site Description and Objectives), which should equal 101.

- b) Please use the mouse to highlight three (3) species on the “Potential Plants” column. To highlight them, hold down your Control (Ctrl) Key and click with your mouse on the following plants: (1) **beardless wheatgrass**: Whitmar: PSSPI; (2) **Indian ricegrass**: Nezpar: ACHY; and (3) **Wyoming big sagebrush**: n.a.: ARTRW8. You can scroll the list in the box by placing your cursor over the slide on the right side of the box, holding the left mouse button down, and moving the slide down.
- c) **User Selected Plants**: Once these three plants are highlighted, click on the “Right-facing Arrow” to move these plants to the “User Selected Plants” box
- d) While you are in the “User Selected Plants” box, you can highlight individual plants, then click on the “View Plant Profile” button to bring up the PLANTS Plant Profile page for that species for more information.

This completes the “Select Plants” module. Please return to the “green bar” at the top of this page and click on the next module, entitled “Planting Design.”

- 5) **Planting Design**: After clicking on “Planting Design” on the green bar, it may take 20 seconds or up to 5 minutes to load, depending upon many factors, such as the speed of your Internet connection and the size of your “User Selected Plants” list. You will eventually get a table with tabs at the top.
 - a) **Plant Materials**: The first tabbed page, entitled “Plant Materials” will be selected. Click on the arrow on the right of the drop-down box for the “Wyoming big sagebrush.” Note that you have the option of selecting container stock as well as seed for this species. For this demonstration, please click on **Seed**.
 - b) **Seeding Calculation**: Click on the “Seeding Calculation” tab. Follow the next set of instructions carefully. When the instructions say, **Hit the Tab-key**, you must hit the tab key. Hitting the right arrow or clicking the mouse may foul things up.
 - i) **Acres to Seed**: Place the cursor within the box labeled “Acres to Seed” and click.
 - (1) Type **500** in the box.
 - ii) **Seeding Method**: “Drill” has been selected by the software. Check the box labeled “inches” to the right of “Drill.”
 - (1) Type **12** in the box if it is not already there.
 - iii) **Mix %**: Within the white portion of the table, you will see a list of the species that you selected. Place your cursor in the “Mix %” cell for beardless wheatgrass and click.
 - (1) Type **60** in the box.
 - (2) **Hit** the Tab-key
 - (3) The “Actual Seeding Rate,” “Actual Seeds/ft²,” and “Total needs” cells will be filled in automatically by the software.
 - iv) Hitting the Tab-key should have placed your cursor in the “Mix %” cell for Indian ricegrass.
 - (1) Type **30** in the box.
 - (2) **Hit** the Tab-key

- v) Hitting the Tab-key should have placed your cursor in the Mix % for Wyoming big sagebrush
 - (1) Type **10** in the box
 - (2) **Hit** the Tab-key
 - vi) Scroll down and click on the “Evaluate” button in the lower left corner of the frame.
 - vii) **Plant Attribute Warnings:** A separate browser window entitled “Plant Attribute Warnings” will pop up and you will see two “Evaluation Results” paragraphs. Click on the “Show Attribute” button for the top “Evaluation Results” paragraph.
 - (1) **Plant Attribute:** Another browser window will pop up to display a “Plant Attribute” table, which provides you with “Seedling Vigor” values for each species. If you wish, you can return to the Select Plants Page and select species with more similar “Seedling Vigor” values. The second Evaluation Result provides a warning about the inclusion of grasses and shrubs in a seeding mix, and the difficulty of establishing shrubs from seed.
 - (2) For this demonstration, we will not return to the “Select Plants” page. Click the “OK” button on the “Plant Attribute” table to close it. Then, click on the “Submit” button on the “Plant Attribute Warnings” window to close it.
- c) **Site Specification:** Click on the “Site Specification” tab.
- i) You can enter various plans and dates for cultural treatments you will do or you can leave this tab blank. For this demonstration, please leave blank.
- d) **Planting Specification:** Click on the “Planting Specification” tab.
- i) You may click on the boxes under “Additional Planting Specification” to make some additional remarks, changes in the method of seeding, and/or change planting dates. For this demonstration, please do not change them.

This completes the “Planting Design” module. Please return to the “green bar” at the top of this page and click on the next module, entitled “Report.”

- 6) **Report:** You have now completed all of the VegSpec modules. You may now view the reports that are produced. You can utilize the default “Combined Report” that is the first selection and click on the “View Report” button. After viewing this combination report entitled “VegSpec Range Planting Report,” you can print it using the print function of your browser. Printing this report completes this VegSpec demonstration.

VegSpec

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For additional help, please consult the Help function on the “green bar” at the VegSpec Web site or contact James Henson, the VegSpec data steward, at the NRCS National Plant Data Center

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