Section 4.0 – PLANT-PRACTICE SEARCH QUERIES

Table of Contents

Section	Title	Page
4.1	Introduction to PLANT-PRACTICE SEARCH	1
4.2	Navigating the PLANT-PRACTICE SEARCH Window	1
4.3	Irrigation data Field	4
4.4	Targeted Species Search by Plant Name, Plant ID, or Key	4
4.5	Mixture Search – Global or by Mixture Name	7
4.51	Global Mixture Search	8
4.52	Targeted Mixture Search by Name or Mix ID	10
4.6	Parameter-Constrained Search for Species or Mixtures	13
4.61	Searches Constrained by Conservation Practice, Practice Purpose, and/or MLRA	13
4.62	Searches Constrained by Biological, Ecological, and/or Commercial Parameters	16

Section 4.0 – PLANT-PRACTICE SEARCH QUERIES

List of Figures

Number	Caption	Page
1	eVegGuide introductory screen, indicating PLANT-PRACTICE SEARCH option.	1
2	Blank PLANT-PRACTICE SEARCH screen, showing all searchable data fields.	2
3	Blank PLANT-PRACTICE SEARCH screen, with drop-down selection list searchable fields highlighted by red boxes.	2
4	Blank PLANT-PRACTICE SEARCH screen, with actual data entry searchable fields highlighted by green boxes.	3
5	Initiating a global species search from the blank PLANT-PRACTICE SEARCH screen using the species name (in this example, the scientific name – *Bromus hordeaceus*) as the only search term.	5
6	Results (abbreviated) for the global species search from the blank PLANT-PRACTICE SEARCH screen, using the species name (in this example, the scientific name – *Bromus hordeaceus*) as the only search term.	6
7	Illustration of selecting one specific line-item data entry from the PLANT-PRACTICE SEARCH results table, with resultant Plant-Practice Record summary window.	7
8	Illustration of selecting 'Mix' under Plant Type from the PLANT-PRACTICE SEARCH blank window.	8
9	Illustration of results from the global mixture search, sorted by 'Practice', from the PLANT-PRACTICE SEARCH blank window.	8

Number	Caption	Page
10	Illustration of selecting one specific line-item data entry from the PLANT-PRACTICE SEARCH results table, with resultant Plant-Practice Record summary window.	9
11	Illustration of a specific pre-set guideline seed mixture search – in this example, for a subset of mixtures whose name contains the word 'Pollinator' – as initiated from the PLANT-PRACTICE SEARCH blank window.	10
12	Results of the specific seed mixture subset search – in this example, for mixtures whose name contains the word 'Pollinator' – as initiated from the PLANT-PRACTICE SEARCH blank window.	11
13	Illustration of a specific mixture search – in this example, for the combined mixture, conservation practice, practice purpose, and MLRA line-item data entry identified by Key number 'tr9797' in Figure 12 – as initiated from the PLANT-PRACTICE SEARCH blank window.	12
14	Display of the plant-record listing for Key number 'tr9797' combination of mixture, practice, and MLRA.	12
15	Display of the plant-record summary window for the Key number 'tr9797' combination of mixture, practice, and MLRA.	12
16	Using Conservation Practice, Practice Purpose, and MLRA as the constraints or filters in searching for species or pre-set guideline mixtures assigned to these parameters – as initiated from the PLANT-PRACTICE SEARCH blank window.	13
17	Results using Conservation Practice 327, Practice Purpose 2, and MLRA 14 as the constraints or filters in searching for species or pre-set guideline mixtures assigned to these parameters from the PLANT-PRACTICE SEARCH blank window.	14
18	Using Conservation Practice only as the constraint in a more global search for all species or pre-set guideline mixtures assigned to 327 – Conservation Cover – as initiated from the PLANT-PRACTICE SEARCH blank window.	15
19	Using a selected set of biological and ecological parameters as combined constraints in a search for species or pre-set guideline mixtures – as initiated from the PLANT-PRACTICE SEARCH blank window.	16

Number	Caption	Page
20	**Using a selected set of conservation practice, MLRA, biological and ecological parameters as combined constraints to narrow and focus the search for species or pre-set guideline mixtures.**	17
21	**Results from using conservation practice, practice purpose, MLRA, biological and ecological parameters as combined constraints to narrow and focus the search for species or pre-set guideline mixtures.**	17
22	**Results from using conservation practice (*without* regard to practice purpose), MLRA, biological and ecological parameters as combined constraints to narrow and focus the search for species or pre-set guideline mixtures.**	19

4.0 PLANT-PRACTICE SEARCH QUERIES

4.1 Introduction to PLANT-PRACTICE SEARCH

The **PLANT-PRACTICE SEARCH** module allows the planner to access a form-driven database query tool that facilitates searches for species or mixtures by applicable conservation practice(s), practice purpose(s), and/or MLRA(s). As with the **PLANT SEARCH** and **MIX COMPONENT SEARCH** modules, searches can be filtered using several methods by which the planner wants a search constrained: 1) *species or mixture name-driven*, where all results are keyed to a specific plant or mixture; 2) *species or mixture parameter-driven*, using selected individual plant or mixture record parameters (in addition to, or in lieu of plant names); or 3) *driven by conservation practice, practice purpose, and/or MLRA*, which provides lists of all species or mixtures associated with the practice parameters.

As previously discussed, the usual links to other sources of biological, ecological, taxonomic, and commercial availability information resulting from these searches can be displayed for all species or mixtures – as described in Section 2.1 under **PLANT SEARCH**.

When querying the **eVegGuide** database for conservation practice, practice purpose, and/or MLRA data in relation to associated species or mixtures, first access the **DATA** tab at the top of the introductory screen (Figure 1). Once within the **DATA** window, click on **PLANT-PRACTICE SEARCH**.

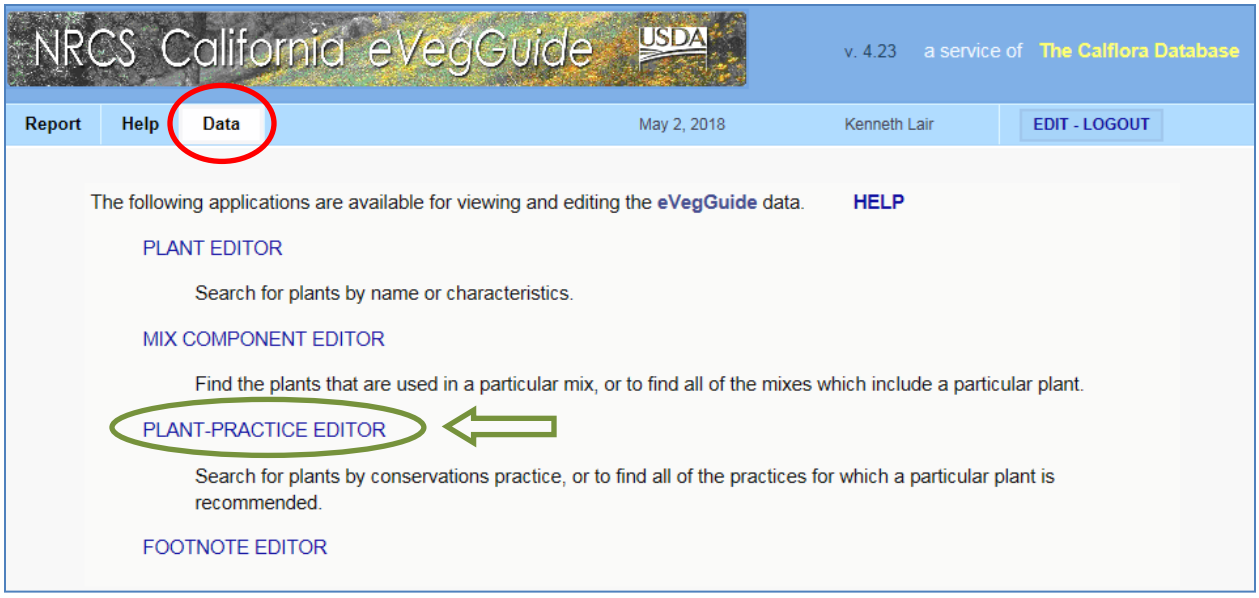


Figure 1. eVegGuide introductory screen, indicating PLANT-PRACTICE SEARCH option.

4.2 Navigating the PLANT-PRACTICE SEARCH Window

The blank **PLANT-PRACTICE SEARCH** window then appears (Figure 2). Any data field (one or more) within this window can serve as search parameters to query the **eVegGuide** database for species or mixtures in which you may be interested. These can be used in any combination to constrain the search.

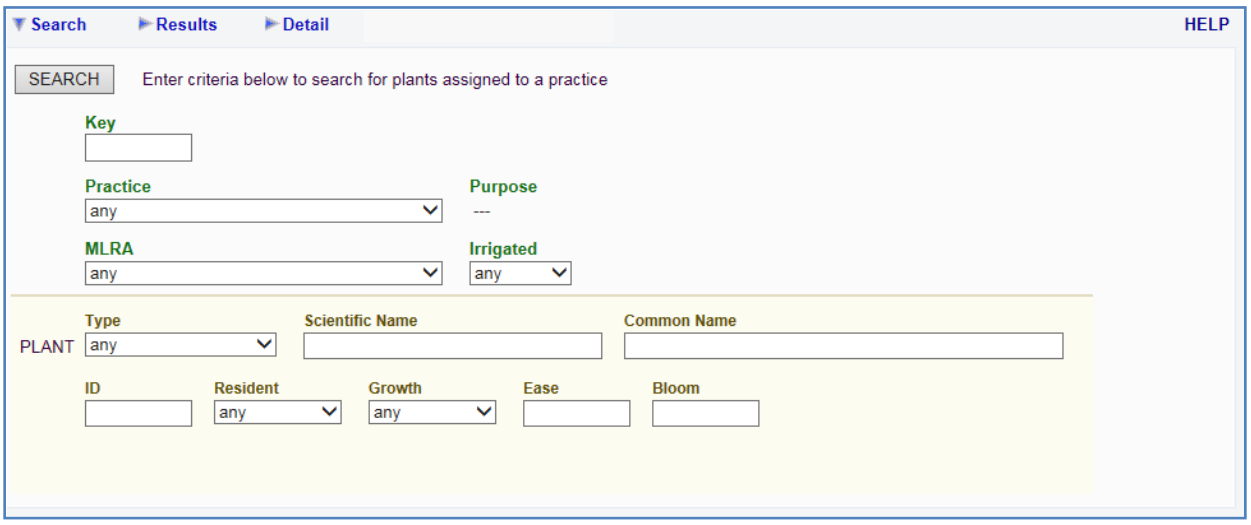


Figure 2. Blank PLANT-PRACTICE SEARCH screen, showing all searchable data fields.

As with **PLANT SEARCH** and **MIX COMPONENT SEARCH**, many data entry fields have **drop-down selection lists** (e.g., conservation Practice, practice Purpose (if applicable), MLRA, Irrigation requirement, plant Type, Resident status, and Growth cycle), which are denoted in default mode within the field as "any" (see the red boxes in Figure 3). Click on each of these fields to see the available selection list of parameters.

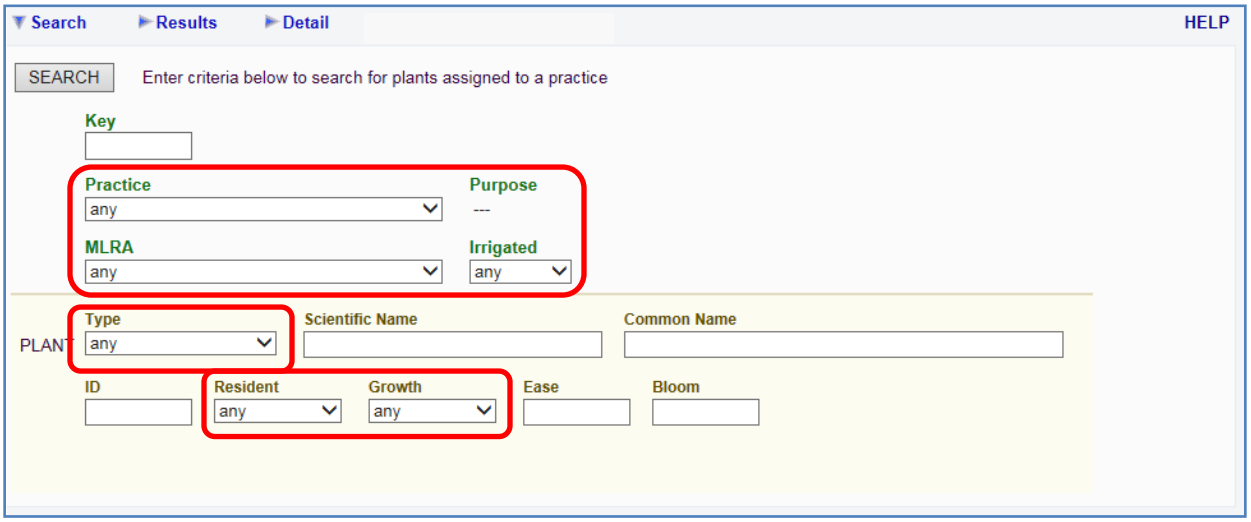


Figure 3. Blank PLANT-PRACTICE SEARCH screen, with drop-down selection list searchable fields highlighted by red boxes.

Other fields (i.e. those not showing "any" as a selection) require **actual data entry** (e.g., Key, Scientific Name, Common Name, Plant ID, Ease of establishment, and Bloom period) as the searchable parameter (see the green boxes in Figure 4). The '**Key**' data field is an **eVegGuide** internal tracking mechanism for formulated (i.e., resulting from a query) database combinations of species or mixture + conservation practice, practice purpose, and MLRA. This **Key** is

displayed in tabular results for any **PLANT-PRACTICE SEARCH** search (see Figure 6 below).

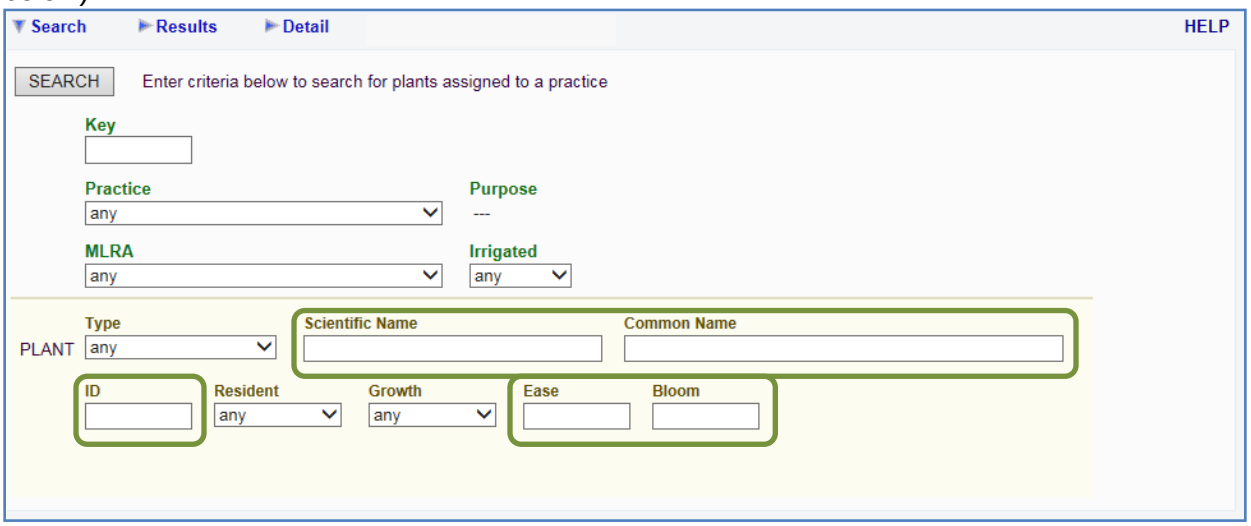


Figure 4. Blank PLANT-PRACTICE SEARCH screen, with actual data entry searchable fields highlighted by green boxes.

'**Key**' can then be used in future searches as a stand-alone search term for specific combinations of parameters associated with database combinations of species or mixtures, conservation practice, practice purpose, and MLRA.

Descriptions for actual data entry fields, to guide your search, include –

Scientific Name – scientific name of the species desired, in accordance with USDA PLANTS database approved nomenclature.

Common Name – common name of the species desired, in accordance with USDA PLANTS database approved nomenclature.

Plant ID – an internal tracking number assigned to a component species when it was initially added to the **eVegGuide**. This can be used as a search term if the species internal ID is known.

Ease – ease of establishment and/or subsequent maintenance, with '3' = easy to establish; '2' = moderately easy to establish; and '1' = slightly difficult to establish. Refer to the **HELP** page for basis and complete descriptions of the ease ratings.

Bloom – peak bloom period for a species, described as a range of calendar months. For example, a bloom period of 3-5 corresponds to March (3) through May (5). Bloom periods may range across calendar years (e.g., 10-5), and are determined from Calflora, CNPS and NRCS observances for the species.

4.3 Irrigation Data Field

The **Irrigation** data field (Figure 23) is a unique species parameter that has functional utility **only** in the **PLANT-PRACTICE SEARCH** module. Requirement for irrigation (if any) is a function of the Conservation Practice as well as the individual species. Some conservation practices as a rule do not require irrigation for any routine revegetation application, and thus no **Irrigation** option is shown in the **PLANT-PRACTICE SEARCH** for these practices. These latter non-irrigated practices include:

- 327 – Conservation Cover
- 340 – Cover Crop
- 391 – Riparian Forest Buffer
- 393 – Filter Strip
- 412 – Grassed Waterway
- 550 – Range Planting
- 601 – Vegetative Barrier
- 603 – Herbaceous Wind Barriers
- 612 – Tree/Shrub Establishment

However, for all other conservation practices within the **eVegGuide**, species are rated for irrigation requirement relative to **Conservation Practice, Practice Purpose**, and **MLRA**. When conservation practices having species-dependent potential for irrigation requirement are selected from the **Practice** drop-down selection list, the **Irrigation** data field will appear in the **PLANT-PRACTICE SEARCH** blank window. When a species or mixture search is performed using an irrigated conservation practice, the tabular results will indicate – by individual species or pre-set guideline mixture line-item entry – the level of irrigation that is recommended (if any). These levels correspond to:

- '**Any**' – species or mixtures with any level of irrigation requirement, including none.
- '**No**' – no irrigation required for the species or mixture.
- '**1 Year**' – minimum of one year of irrigation required for the species or mixture.
- '**3 Years**' – minimum of three years of irrigation required for the species or mixture.
- '**Continuous**' – continuous or indefinite irrigation required for the species or mixture.

NOTE: Please refer to the **Irrigation** link under **NRCS California eVegGuide Help Resources** in the **HELP** page (**Section X.X**) to access more detailed information, definitions, and rationale pertaining to the irrigation requirement ratings.

4.4 Targeted Species Search by Plant Name, Plant ID, or Key

As described and demonstrated in previous sections of the User's Manual under the **PLANT SEARCH** (Section 2.0) or **MIX COMPONENT SEARCH** (Section 3.0), searches for a particular species or mixture can be performed by using either scientific name, common name (or mixture name), and/or plant or mixture ID (singly or in any combination). If the **Plant ID** or **Mix ID** is known – from when the species or mixture was first formulated and entered into the **eVegGuide**, or from a **PLANT SEARCH** search for species or mixtures (see Figure 29 in Section 2.5) – this ID number can then be entered in the **ID** data field (Figure 4).

As an example of the nature of results obtained by using a global name search in this **PLANT-PRACTICE SEARCH** module – *without any constraint in this first example on a specific conservation practice, practice purpose, or MLRA with which a species may be specifically associated* – enter '*Bromus hordeaceus*' in the **Scientific Name** data field (Figure 5). Then click on the **SEARCH** box at the top-left of the window.

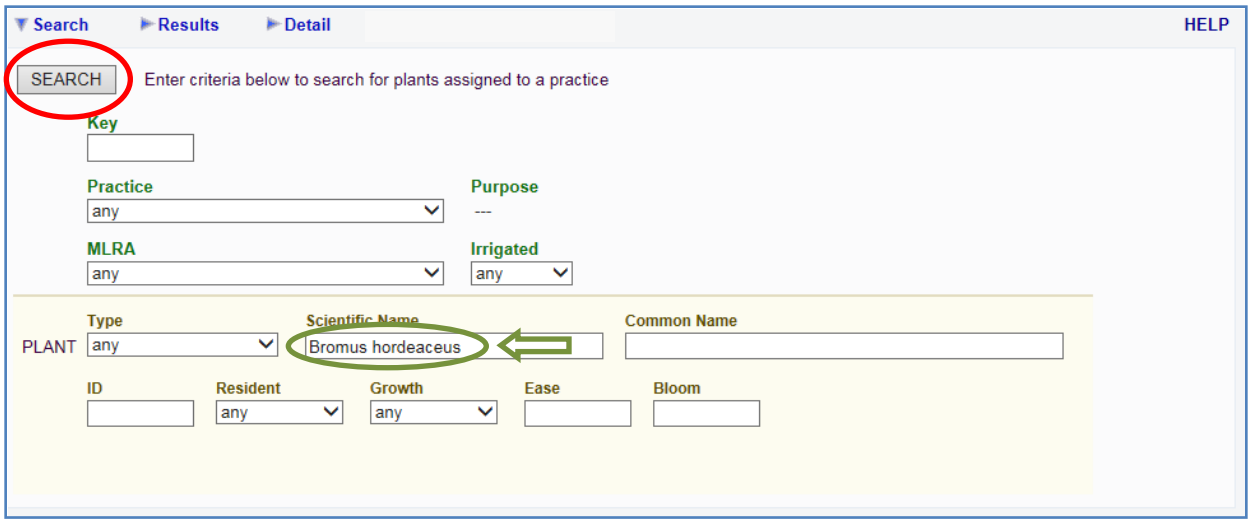


Figure 5. Initiating a global species search from the blank PLANT-PRACTICE SEARCH screen using the species name (in this example, the scientific name – *Bromus hordeaceus*) as the only search term.

Results of this search are typical of the **PLANT-PRACTICE SEARCH**, as displayed in Figure 6, showing all conservation practices, practice purposes, and MLRA's to which ***Bromus hordeaceus*** has been assigned – a very common species across many practices and MLRA's in the **eVegGuide**. As with all other tables displaying results of a search, columns can be sorted in ascending order by clicking on any column heading shown in **bold, blue** font. In this example (Figure 6), all tabular data are sorted by the '**Practice**' column, showing all results in ascending order of conservation practice number to which the example species, ***Bromus hordeaceus***, is assigned.

To examine further data pertaining to any of the combined line-item results for conservation practice, practice purpose, and MLRA + selected species, click on the blue dot ( ) to view the **Plant-Practice Record** summary window for that line-item entry (Figure 7). In this example, click on the blue dot ( ) for the first displayed line-item entry – the occurrence of *Bromus hordeaceus* in conservation practice 327 (Conservation Cover), practice purpose 1 – "Permanent Cover orchards and vineyards", and MLRA 14. The resulting **Plant-Practice Record** summary window (Figure 7) displays more detailed descriptions of the pertinent data fields for this line-item result.

Note that the user does not have to 'X-out' or escape from this **Plant-Practice Record** summary window in order to select a new line-item data entry from the original results table. Simply click on another blue dot ( ) for the next line-item entry to be examined, and the existing **Plant-Practice Record** summary window will automatically change to reveal full descriptions for the newly selected line-item data.

► Search ▼ Results ► Detail HELP

82 results Click on ○ to view a record

Key	MLRA	Practice	Purpose	Irrigated	Type	Scientific Name	Common Name	Ease
tr10285	14	327	1 - Permanent Cover orchards an...		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr10286	15	327	1 - Permanent Cover orchards an...		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr10287	16	327	1 - Permanent Cover orchards an...		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr10288	17	327	1 - Permanent Cover orchards an...		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr10289	18	327	1 - Permanent Cover orchards an...		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr10290	19	327	1 - Permanent Cover orchards an...		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr13704		340	1 - Increase Organics		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr13705		340	5 - Other		Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t4933	14	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t4994	14	342	1 - Cuts, Fills, & Disturbed Ar...	continuous	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5012	15	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5073	15	342	1 - Cuts, Fills, & Disturbed Ar...	continuous	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5093	16	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5130	17	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5157	18	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5158	18	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5203	19	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5469	4B	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t5517	5	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t6712	14	342		no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t6721	15	342		no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t6850	20	342		continuous	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr13290	21+23	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
tr13356	22	342	1 - Cuts, Fills, & Disturbed Ar...	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3

(section omitted for abbreviation)

t15871	19	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15878	20	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15884	26	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15889	29	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15895	30	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15900	31	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15907	4B	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t15922	5	601			Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t20849	14	645	2 - Food Plants	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3
t20881	15	645	2 - Food Plants	no	Grass	Bromus hordeaceus	Soft brome, Soft chess	3

Figure 6. Results (abbreviated) for the global species search from the blank PLANT-PRACTICE SEARCH screen, using the species name (in this example, the scientific name – *Bromus hordeaceus*) as the only search term.

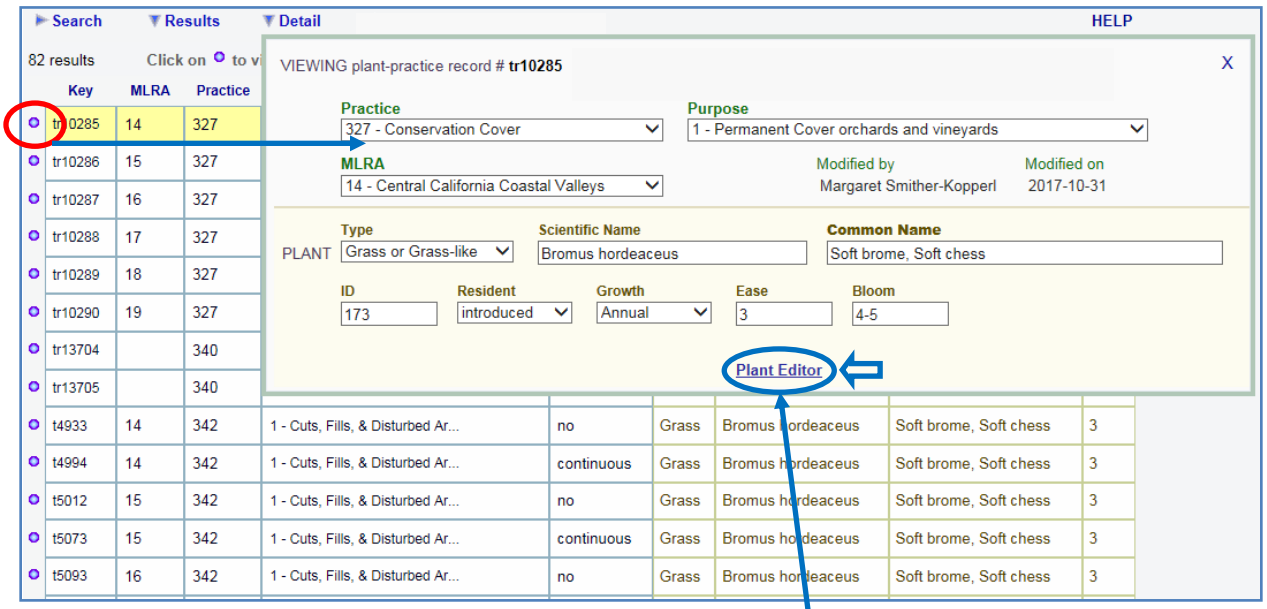


Figure 7. Illustration of selecting one specific line-item data entry from the PLANT-PRACTICE SEARCH results table, with resultant Plant-Practice Record summary window.

From any **Plant-Practice Record** summary window, click on '**Plant Editor**' to view the full data record for that species (as illustrated in Section 2.3 under **PLANT SEARCH**) – in this example, for ***Bromus hordeaceus***. As described previously, other links are available from this plant record, including Calflora and USDA-PLANTS databases, CNPLX (commercial availability database), Calscape, CalPhotos, PlantID.net, Jepson eFlora, efloras.org, etc.

As described above, the '**Key**' ID number can be used in future searches as a stand-alone search term for specific line-item combinations of parameters associated with a species (or mixture), conservation practice, practice purpose, and MLRA.

4.5 Mixture Search – Global or by Mixture Name

The **PLANT-PRACTICE SEARCH** module can also be used to facilitate searches for, and examination of, seed mixtures assigned to combinations of conservation practice, practice purpose, and MLRA in the **eVegGuide**. From the **PLANT-PRACTICE SEARCH** blank window, select '**Mix**' from the drop-down selection list under **Plant Type** (Figure 8).

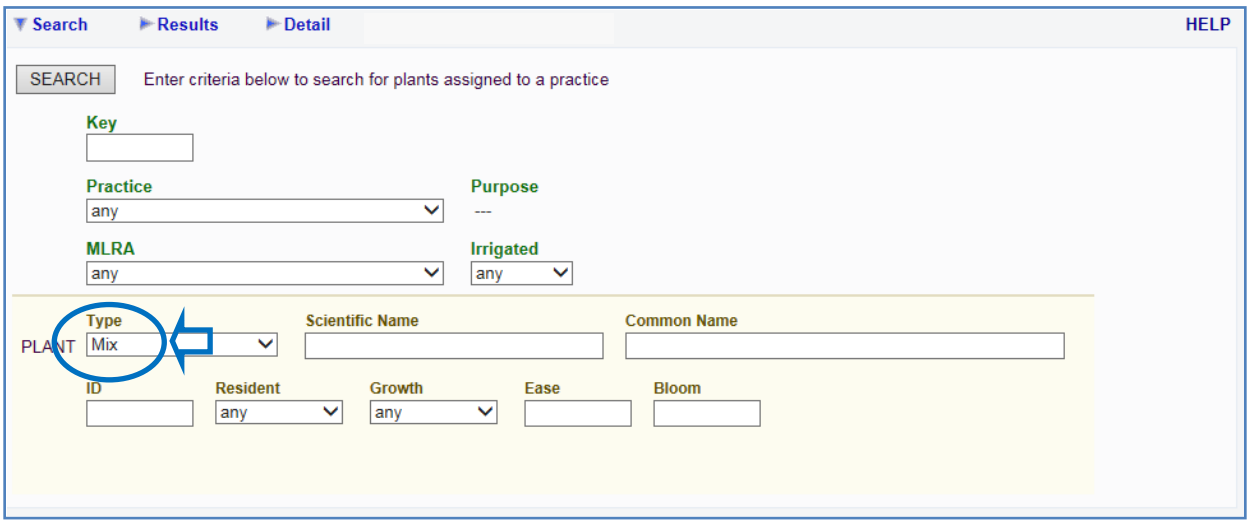


Figure 8. Illustration of selecting 'Mix' under Plant Type from the PLANT-PRACTICE SEARCH blank window.

4.51 Global Mixture Search

For a global search for all pre-set guideline mixtures and associated conservation practices, practice purposes, and MLRA's (see Figure 8 above), select '**Mix**' from the drop-down selection list under the **Plant Type** data field -- *without any other data element selection as additional constraints.* Then click on the **SEARCH** box. Results are shown in Figure 9.

Search Results Detail HELP

656 results Click on to view a record

Key	MLRA	Practice	Purpose	Irrigated	Type	Scientific Name	Common Name	Ease
t1014	14	327	2 - Upland Wildland		Mix		Native Grasses and Forbs: Dry Site	3
t1015	14	327	2 - Upland Wildland		Mix		Native Grasses, Legumes & Forbs: Wet Site	2
t1017	14	327	2 - Upland Wildland		Mix		Native Forbs and Grasses Seed Mix: Dry Site	2
t1018	14	327	2 - Upland Wildland		Mix		California Native Filter Seed Mix	2
t1091	15	327	2 - Upland Wildland		Mix		Native Grasses and Forbs: Dry Site	3
t1092	15	327	2 - Upland Wildland		Mix		Native Grasses, Legumes & Forbs: Wet Site	2
t1094	15	327	2 - Upland Wildland		Mix		Native Forbs and Grasses Seed Mix: Dry Site	2

section omitted for abbreviation)

t22338	21+23	657	1 - Nesting Cover/Wetland assoc...	no	Mix		Wet Moist Soil Grass Mix	2
t23080	21+23	657	3 - Food Plants - Primarily Wat...	no	Mix		MLRA 21 + 23 -- Wildrye / Wheatgrass Mixture 1 (DRAFT)	3
t23904	21+23	658	1 - Nesting Cover/Wetland assoc...	no	Mix		Wet Moist Soil Grass Mix	2
t24639	21+23	658	3 - Food Plants - Primarily Wat...	no	Mix		MLRA 21 + 23 -- Wildrye / Wheatgrass Mixture 1 (DRAFT)	3
t25211	21+23	659	1 - Nesting Cover/Wetland assoc...	no	Mix		Wet Moist Soil Grass Mix	2
t25945	21+23	659	3 - Food Plants - Primarily Wat...	no	Mix		MLRA 21 + 23 -- Wildrye / Wheatgrass Mixture 1 (DRAFT)	3

Figure 9. Illustration of results from the global mixture search, sorted by 'Practice', from the PLANT-PRACTICE SEARCH blank window.

The abbreviated results of this global search are depicted in Figure 9 above (full tabular results included over 650 line-item entries). In this example, tabular data are sorted by the '**Practice**' column, showing all results in ascending order of conservation practice number to which pre-set guideline mixtures are assigned. As displayed in Figure 9, this global mixture listing displays mixtures occurring across a large array of conservation practices, their respectively applicable practice purposes; and MLRA's.

Examine further data pertaining to any of the combined line-item results for conservation practice, practice purpose, and MLRA + selected mixture by clicking on the blue dot ( ) to view the **Plant-Practice Record** summary window for that line-item entry (Figure 10). In this example, click on the blue dot ( ) for the first displayed line-item entry – the occurrence of the mixture named "Native Grasses and Forbs: Dry Site".

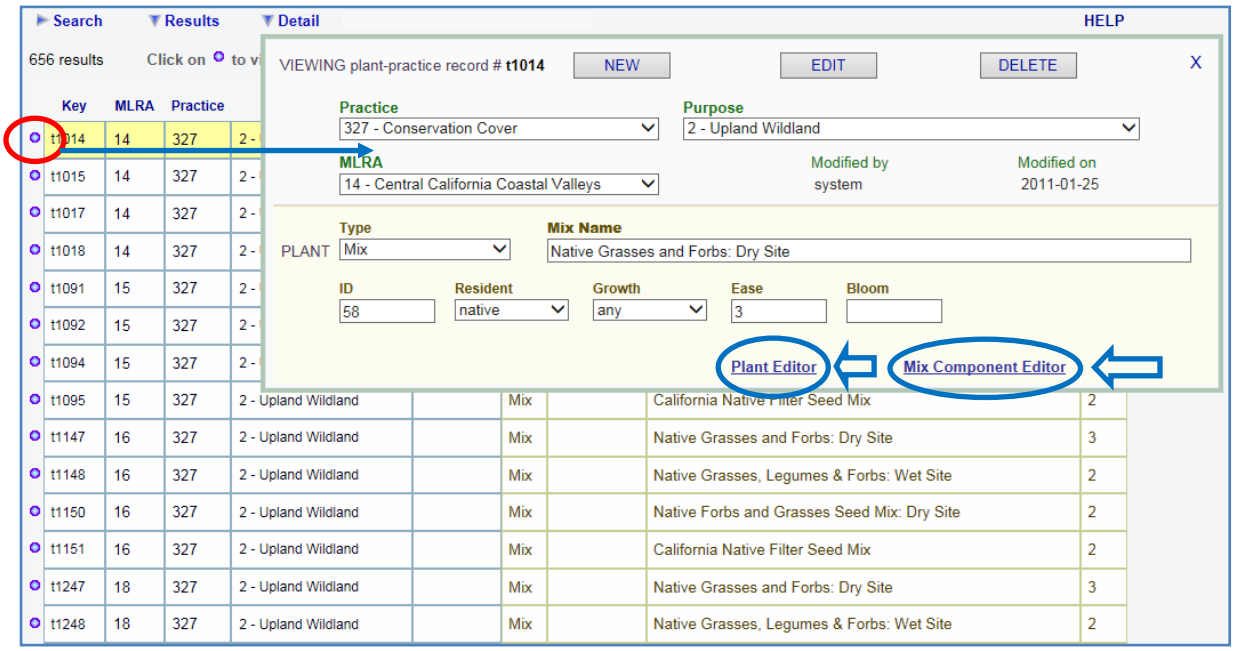


Figure 10. Illustration of selecting one specific line-item data entry from the PLANT-PRACTICE SEARCH results table, with resultant Plant-Practice Record summary window.

Note again that the user does not have to 'X-out' or escape from this **Plant-Practice Record** summary window in order to select a new mixture from the original results table. Simply click on another blue dot ( ) for the next mixture to be examined, and the existing **Plant-Practice Record** summary window will automatically change to reveal full descriptions for the newly selected mixture.

As described in Section 3.3 of this User's Manual under the **MIX COMPONENT SEARCH** module, the usual biological, ecological and commercial parameters are displayed in this plant-practice summary record for the selected mixture (Figure 10). Note also that other active link options (as discussed and demonstrated in Section 3.3) are provided to access further information pertaining to this specific mixture – 1) '**Plant Editor**', which illustrates the full summary of mix name, mix description, and other parameters for the mixture; and 2) '**Mix Component Editor**', which displays the full species composition for the selected mixture – in this example, pre-set guideline mixture 58.

4.52 Targeted Mixture Search by Name or Mix ID

A targeted search for a specific pre-set guideline seed mixture (or a subset of specifically categorized mixtures) and their associated conservation practices, practice purposes, and MLRA's can also be performed from the blank **PLANT-PRACTICE SEARCH** window. First, select '**Mix**' from the drop-down selection list under **Plant Type** (Figure 11).

In this new example search, then enter the word '**Pollinator**' (as in a quasi-wildcard search) in the **Common Name** data field (Figure 11). This will initiate a search for all pre-set guideline seed mixtures within the **eVegGuide** whose mixture names contain the word '**Pollinator**' – thereby searching for mixtures (based on the mixture names) having benefit to pollinators, irrespective (in this search) of their associated conservation practice, practice purpose, and MLRA applicability. Click on the **SEARCH** box at the top-left of the window.

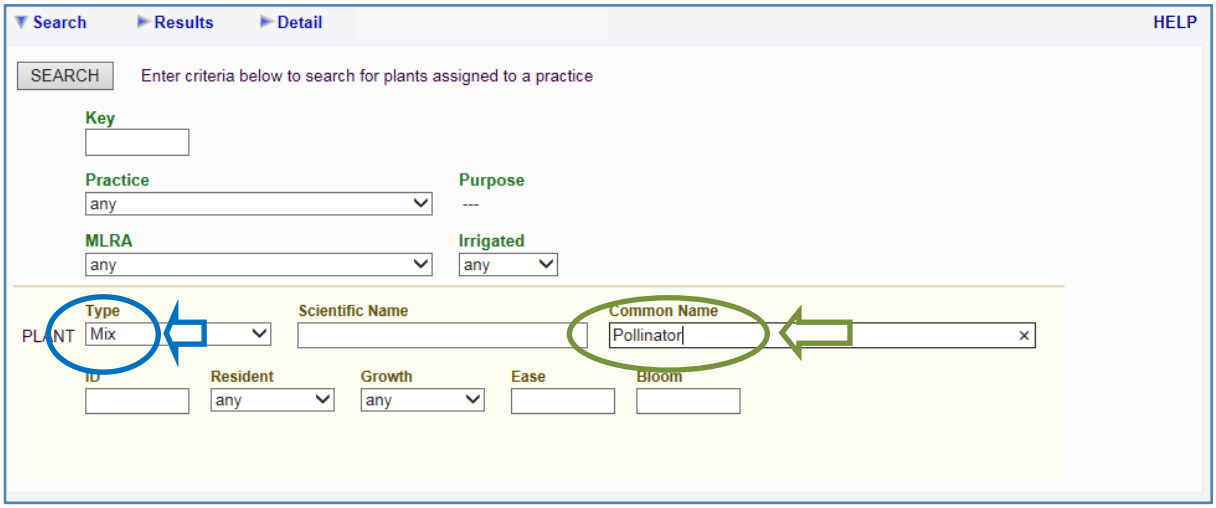
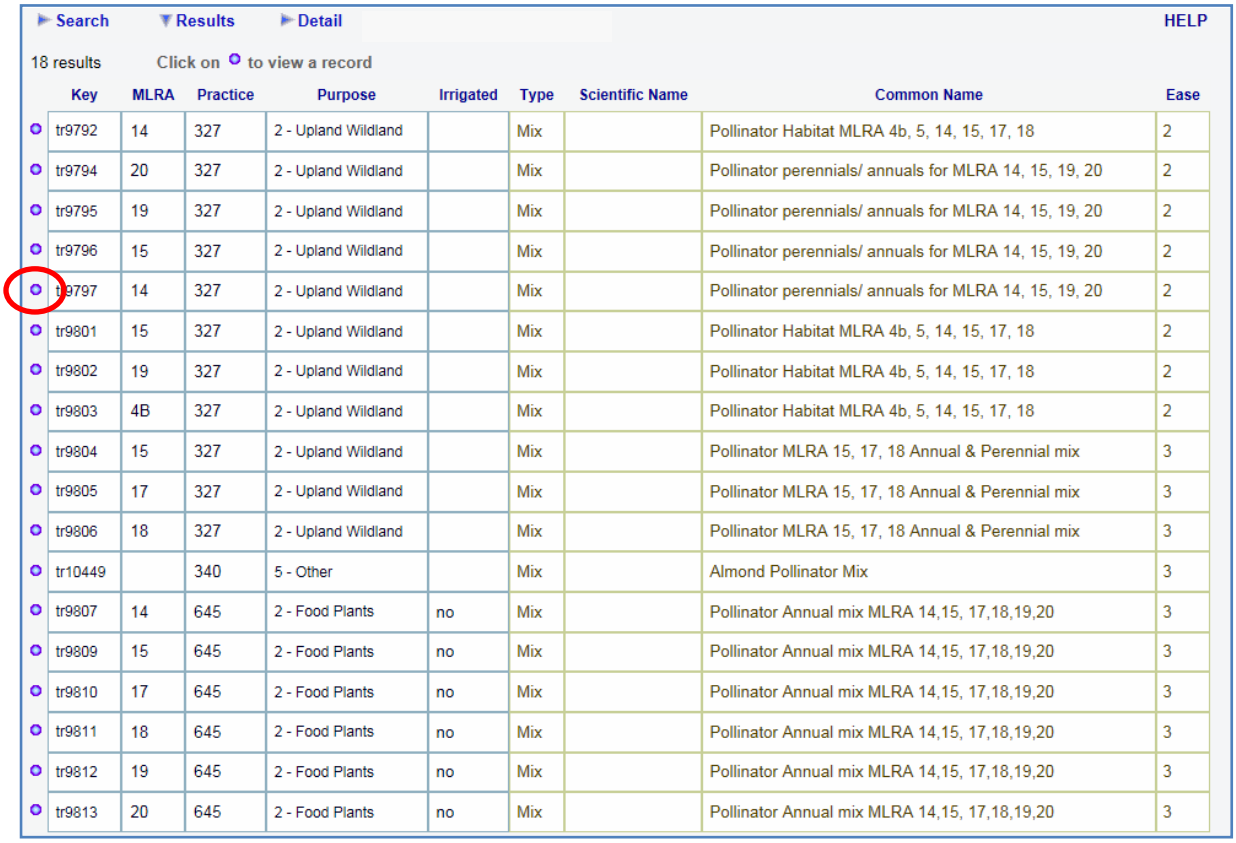


Figure 11. Illustration of a specific pre-set guideline seed mixture search – in this example, for a subset of mixtures whose name contains the word 'Pollinator' – as initiated from the PLANT-PRACTICE SEARCH blank window.

Results of this latest example search for a subset of mixture whose names contain the word '**Pollinator**' are shown in Figure 12 with nearly 20 line-item entries returned. Tabular data are sorted by the '**Practice**' column, showing all results in ascending order of conservation practice number. As displayed in Figure 12, these 'Pollinator' mixtures occur across three conservation practices (327, 640, and 645) and their respectively applicable practice purposes; and across numerous MLRA's (4B, 14, 15, 17, 18, 19, and 20).

As previously described in Section 4.41, the planner can examine further data pertaining to any of the combined line-item results for conservation practice, practice purpose, and MLRA + selected mixture by clicking on the blue dot (). This will reveal the **Plant-Practice Record** window for that line-item entry. Clicking on another blue dot () will shift the **Plant-Practice Record** window to another mixture selection.



Search Results Detail HELP

18 results Click on ○ to view a record

	Key	MLRA	Practice	Purpose	Irrigated	Type	Scientific Name	Common Name	Ease
○	tr9792	14	327	2 - Upland Wildland		Mix		Pollinator Habitat MLRA 4b, 5, 14, 15, 17, 18	2
○	tr9794	20	327	2 - Upland Wildland		Mix		Pollinator perennials/ annuals for MLRA 14, 15, 19, 20	2
○	tr9795	19	327	2 - Upland Wildland		Mix		Pollinator perennials/ annuals for MLRA 14, 15, 19, 20	2
○	tr9796	15	327	2 - Upland Wildland		Mix		Pollinator perennials/ annuals for MLRA 14, 15, 19, 20	2
○	tr9797	14	327	2 - Upland Wildland		Mix		Pollinator perennials/ annuals for MLRA 14, 15, 19, 20	2
○	tr9801	15	327	2 - Upland Wildland		Mix		Pollinator Habitat MLRA 4b, 5, 14, 15, 17, 18	2
○	tr9802	19	327	2 - Upland Wildland		Mix		Pollinator Habitat MLRA 4b, 5, 14, 15, 17, 18	2
○	tr9803	4B	327	2 - Upland Wildland		Mix		Pollinator Habitat MLRA 4b, 5, 14, 15, 17, 18	2
○	tr9804	15	327	2 - Upland Wildland		Mix		Pollinator MLRA 15, 17, 18 Annual & Perennial mix	3
○	tr9805	17	327	2 - Upland Wildland		Mix		Pollinator MLRA 15, 17, 18 Annual & Perennial mix	3
○	tr9806	18	327	2 - Upland Wildland		Mix		Pollinator MLRA 15, 17, 18 Annual & Perennial mix	3
○	tr10449		340	5 - Other		Mix		Almond Pollinator Mix	3
○	tr9807	14	645	2 - Food Plants	no	Mix		Pollinator Annual mix MLRA 14,15, 17,18,19,20	3
○	tr9809	15	645	2 - Food Plants	no	Mix		Pollinator Annual mix MLRA 14,15, 17,18,19,20	3
○	tr9810	17	645	2 - Food Plants	no	Mix		Pollinator Annual mix MLRA 14,15, 17,18,19,20	3
○	tr9811	18	645	2 - Food Plants	no	Mix		Pollinator Annual mix MLRA 14,15, 17,18,19,20	3
○	tr9812	19	645	2 - Food Plants	no	Mix		Pollinator Annual mix MLRA 14,15, 17,18,19,20	3
○	tr9813	20	645	2 - Food Plants	no	Mix		Pollinator Annual mix MLRA 14,15, 17,18,19,20	3

Figure 12. Results of the specific seed mixture subset search – in this example, for mixtures whose name contains the word 'Pollinator' – as initiated from the PLANT-PRACTICE SEARCH blank window.

Also as described above in Section 4.41 (Figure 10), the biological, ecological and commercial parameters are displayed in this plant-practice summary record, as well as the active link options – 1) '**Plant Editor**', which illustrates the full summary of mix name, mix description, and other parameters for the mixture; and 2) '**Mix Component Editor**', which displays the full species composition for the selected mixture.

A specified (single) mixture search can also be conducted using the **Key** number or **Mix ID** (if known from when the mixture was first formulated and entered into the **eVegGuide**, or from prior searches for mixtures. See Figure 10 above for tabular locations of Key and Mix ID numbers.

First, click on '**Search**' in the extreme upper-left corner (not the **SEARCH** box) to return to the blank **PLANT-PRACTICE SEARCH** window. Delete the word '**Pollinator**' from the **Common Name** data field, and then enter a Key number in the '**Key'** data field. For this example, enter Key number '**tr9797**' (Figure 13), representing the line-item combination of the mixture named '**Pollinator perennials / annuals for MLRA 14, 15, 19, 20**' in association with conservation practice 327 (Conservation Cover), practice purpose 2 – Upland Wildland, and MLRA 14. Then click on the **SEARCH** box at the top-left of the window. Similarly, this search can be conducted using the **Mix ID** in lieu of the line-item **Key** number, if so desired.

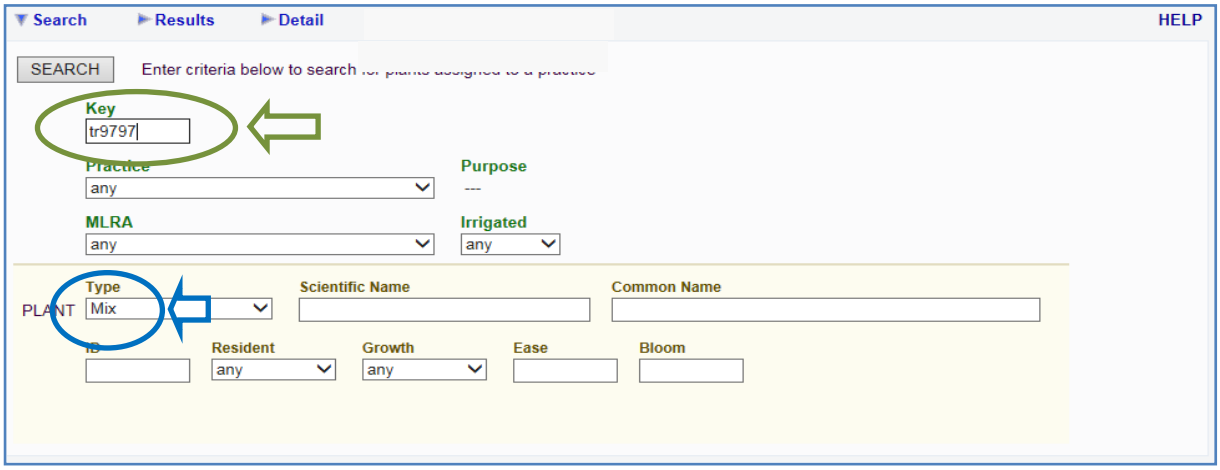


Figure 13. Illustration of a specific mixture search – in this example, for the combined mixture, conservation practice, practice purpose, and MLRA line-item data entry identified by Key number 'tr9797' in Figure 12 – as initiated from the PLANT-PRACTICE SEARCH blank window.

This search results in the plant record summary listing for this specific mixture / practice / MLRA combination tracked as Key number 'tr9797' (Figure 14).

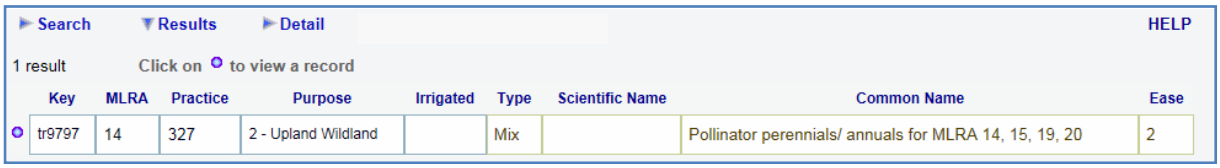


Figure 14. Display of the plant-record listing for Key number 'tr9797' combination of mixture, practice, and MLRA.

Clicking on the blue dot ( ) for this line-item then displays the full summary plant-practice record for this mixture / practice / MLRA combination (Figure 15).

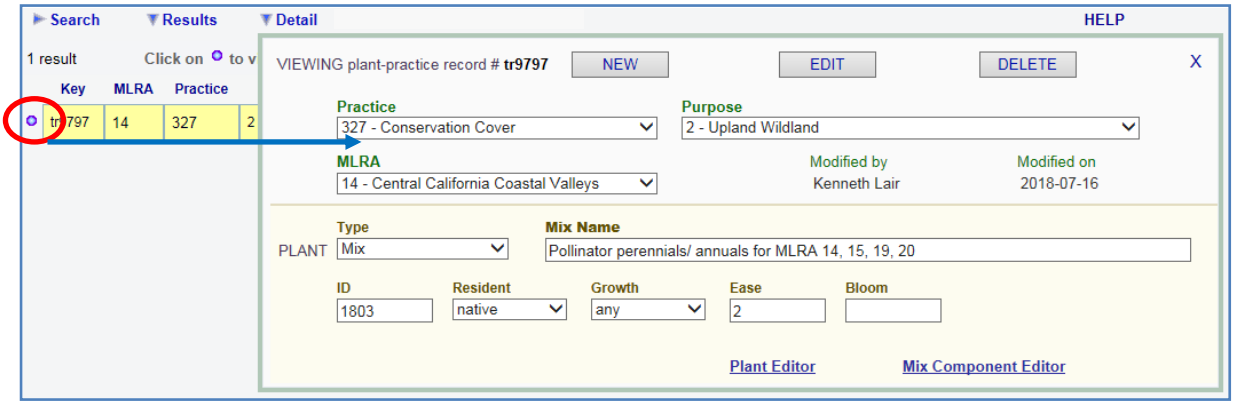


Figure 15. Display of the plant-record summary window for the Key number 'tr9797' combination of mixture, practice, and MLRA.

As described previously, the biological, ecological and commercial parameters are displayed in this plant-practice summary record, as well as the active link options – 1) '**Plant Editor**', which illustrates the full summary of mix name, mix description, and other parameters for the mixture; and 2) '**Mix Component Editor**', which displays the full species composition for the selected mixture.

4.6 Parameter-Constrained Search for Species or Mixtures

In contrast to a **PLANT-PRACTICE SEARCH** keyed to a single species or pre-set guideline mixture using names, ID's, or line-item Key numbers, lists of species or mixtures that meet selected search criteria can be generated using a search constrained by selected parameters. The blank **PLANT-PRACTICE SEARCH** window (see Figure 2 above) displays all the searchable parameters by which a search can be constrained. As previously noted, any data field (one or more) within this window can serve as search variable(s) to query the **eVegGuide** database for the species or mixtures in which you may be interested.

4.61 Searches Constrained by Conservation Practice, Practice Purpose, and/or MLRA

Searches using **PLANT-PRACTICE SEARCH** can be conducted using **Conservation Practice, Practice Purpose,** and/or **MLRA** as the search constraints or filters. When this type of constrained search is performed, the results will display all species or mixtures that are assigned to the selected practice, practice purpose, and MLRA. In results tables, mixtures and species will both be listed in the same table, with mixtures listed first – unless the drop-down option of '**Mix**' is selected under **Plant Type**, which will then generate only mixtures assigned to the selected combination of conservation practice, practice purpose, and MLRA.

1. First example – the planner wishes to find all species and pre-set guideline seed mixtures within the **eVegGuide** that are assigned to 1) Conservation Practice 327 (Conservation Cover); 2) Practice Purpose 2 – Upland Wildlife; and 3) MLRA 14 – Central California Coastal Valleys (Figure 16). After selecting these options from the respective drop-down selection lists, click on **SEARCH**.

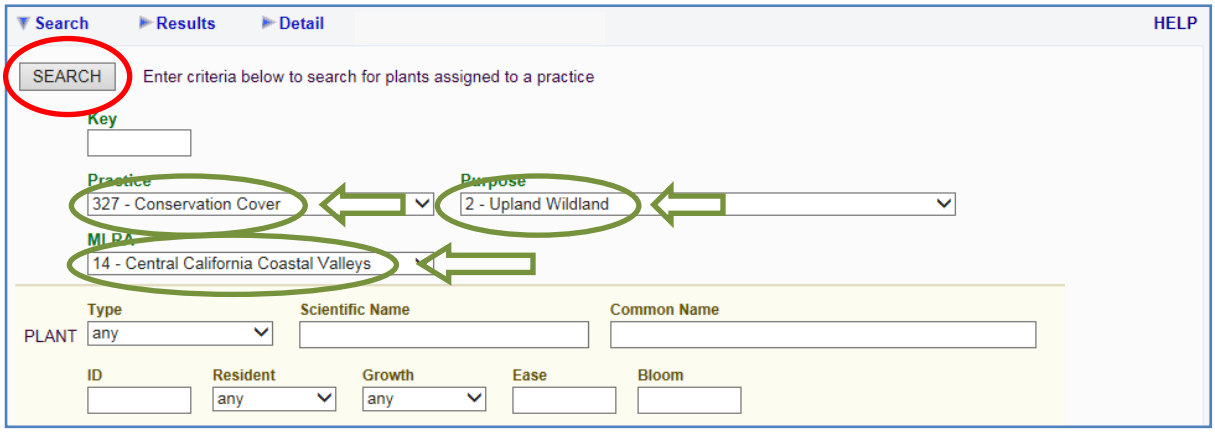
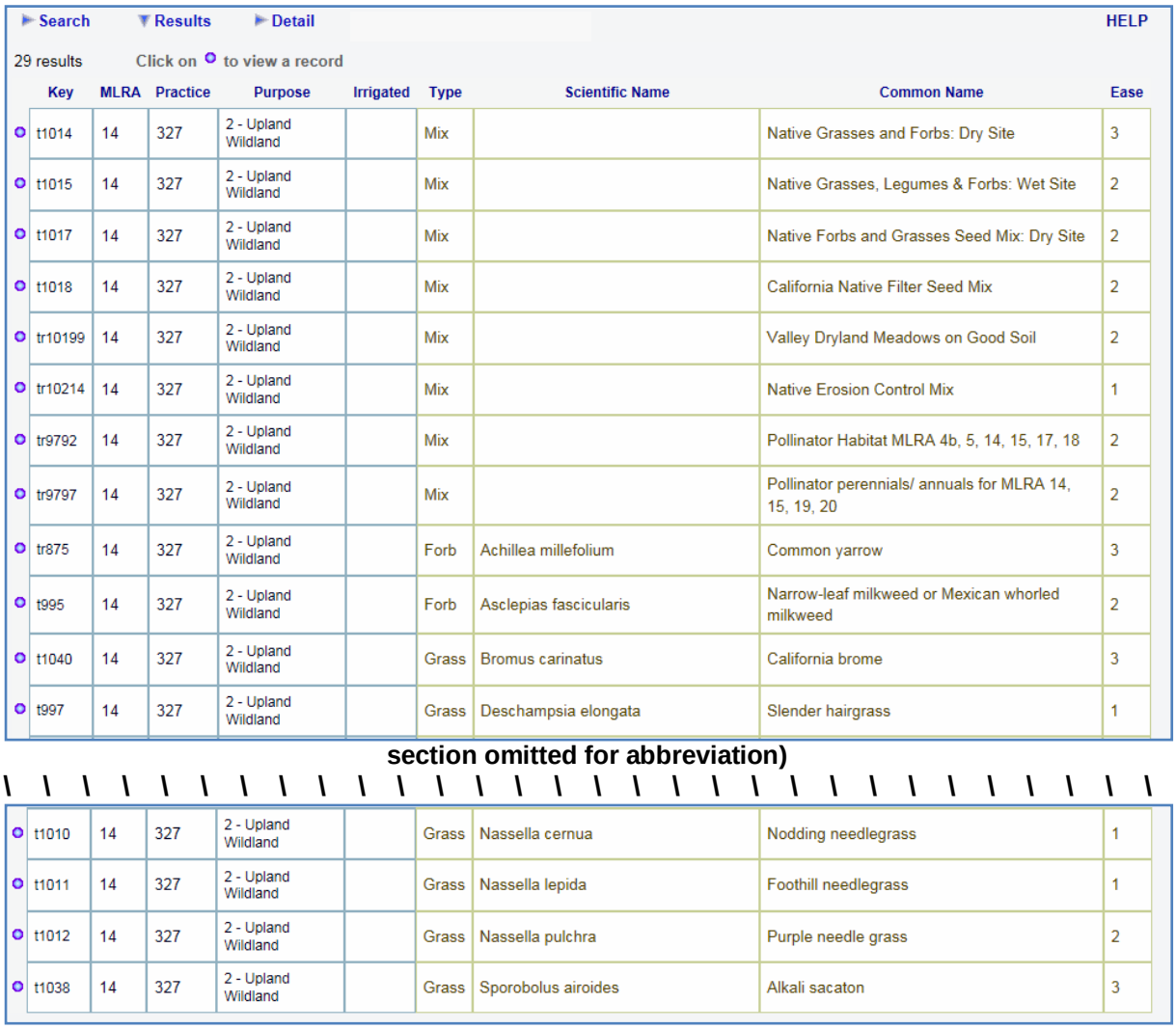


Figure 16. Using Conservation Practice, Practice Purpose, and MLRA as the constraints or filters in searching for species or pre-set guideline mixtures assigned to these parameters – as initiated from the PLANT-PRACTICE SEARCH blank window.

The resulting table (Figure 17) displays nearly 30 entries representing all species and mixtures assigned to this combination of parameters (Figure 16) that were selected as search constraints. The tabular data are sorted by **Scientific Name** by default in these types of searches, but with any applicable mixtures listed first (with mixture names in the **Common Name** data field). However, the sorting order can be changed by clicking on any column heading shown in **bold, blue** font.



Search | Results | Detail | HELP

29 results | Click on to view a record

Key	MLRA	Practice	Purpose	Irrigated	Type	Scientific Name	Common Name	Ease
t1014	14	327	2 - Upland Wildland		Mix		Native Grasses and Forbs: Dry Site	3
t1015	14	327	2 - Upland Wildland		Mix		Native Grasses, Legumes & Forbs: Wet Site	2
t1017	14	327	2 - Upland Wildland		Mix		Native Forbs and Grasses Seed Mix: Dry Site	2
t1018	14	327	2 - Upland Wildland		Mix		California Native Filter Seed Mix	2
tr10199	14	327	2 - Upland Wildland		Mix		Valley Dryland Meadows on Good Soil	2
tr10214	14	327	2 - Upland Wildland		Mix		Native Erosion Control Mix	1
tr9792	14	327	2 - Upland Wildland		Mix		Pollinator Habitat MLRA 4b, 5, 14, 15, 17, 18	2
tr9797	14	327	2 - Upland Wildland		Mix		Pollinator perennials/ annuals for MLRA 14, 15, 19, 20	2
tr875	14	327	2 - Upland Wildland		Forb	Achillea millefolium	Common yarrow	3
t995	14	327	2 - Upland Wildland		Forb	Asclepias fascicularis	Narrow-leaf milkweed or Mexican whorled milkweed	2
t1040	14	327	2 - Upland Wildland		Grass	Bromus carinatus	California brome	3
t997	14	327	2 - Upland Wildland		Grass	Deschampsia elongata	Slender hairgrass	1

section omitted for abbreviation)

t1010	14	327	2 - Upland Wildland		Grass	Nassella cernua	Nodding needlegrass	1
t1011	14	327	2 - Upland Wildland		Grass	Nassella lepida	Foothill needlegrass	1
t1012	14	327	2 - Upland Wildland		Grass	Nassella pulchra	Purple needle grass	2
t1038	14	327	2 - Upland Wildland		Grass	Sporobolus airoides	Alkali sacaton	3

Figure 17. Results using Conservation Practice 327, Practice Purpose 2, and MLRA 14 as the constraints or filters in searching for species or pre-set guideline mixtures assigned to these parameters from the PLANT-PRACTICE SEARCH blank window.

As always, the planner can examine further data pertaining to any of the combined line-item results for conservation practice, practice purpose, and MLRA + species or mixture by clicking on the blue dot ( ). This produces the **Plant-Practice Record** window for that line-item entry. Clicking on another blue dot ( ) will shift the **Plant-Practice Record** window to another species or mixture selection. The biological, ecological and commercial parameters are displayed in this plant-practice summary record, as well as the active link options (see Figure 15) – 1) '**Plant Editor**', which illustrates the full summary of mix name, mix

description, and other parameters for the mixture; and 2) '**Mix Component Editor**', which displays the full species composition for the selected mixture.

2. Second example – the planner wishes to pursue a more global search using only **Conservation Practice**, or **MLRA**. In this next example, find all species and pre-set guideline seed mixtures within the **eVegGuide** that are assigned to **Conservation Practice** 327 – Conservation Cover) *only*, irrespective of **Practice Purpose** or **MLRA**.

To accomplish this, first click on '**Search**' in the extreme upper-left corner (not the **SEARCH** box) to return to the blank **PLANT-PRACTICE SEARCH** window. Retain '327 – Conservation Cover' from the Practice drop-down selection list, but revert the data fields for Purpose and MLRA to their default selection of 'Any' (Figure 18). After selecting these options from the respective drop-down selection lists, click on **SEARCH**.

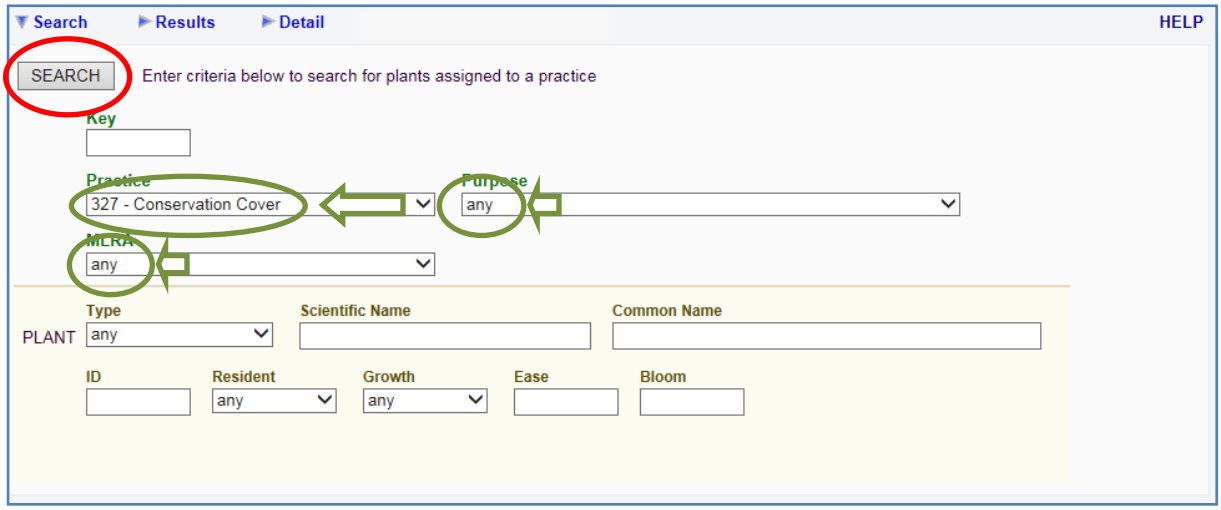


Figure 18. Using Conservation Practice only as the constraint in a more global search for all species or pre-set guideline mixtures assigned to 327 – Conservation Cover – as initiated from the PLANT-PRACTICE SEARCH blank window.

This more global search results in nearly 800 line-item entries (not shown here because of the long table length) for species and mixtures assigned to '327 – Conservation Cover' within the **eVegGuide**, displayed across all applicable Practice Purposes and MLRA's. The data are sorted by **Scientific Name** by default, but with any applicable mixtures listed first (with mixture names in the **Common Name** data field). The sorting order can be changed by clicking on any column heading shown in **bold, blue** font.

Alternatively, this type of search can be modified to search for all species and mixtures assigned to an individual **MLRA**, without regard to **Conservation Practice** or **Practice Purpose**. Searches for species and mixtures by **Practice Purpose** only is not feasible, as Practice Purpose is always matched with, and specific to a particular Conservation Practice.

The user is encouraged to examine several different combinations of available **Conservation Practice, Practice Purpose**, and/or **MLRA** (utilizing the drop-down selection

lists for each parameter to specify a particular practice, purpose, and/or MLRA of interest), in order to realize the full potential and querying power of this module.

4.62 Searches Constrained by Biological, Ecological, and/or Commercial Parameters

Searches can also be conducted using the biological and ecological parameters displayed at the bottom of the blank **PLANT-PRACTICE SEARCH** window as search constraints or filters – namely, **Resident** status, **Growth** form, **Ease** of establishment, and peak **Bloom** period (see Figure 2 above). When this type of constrained search is performed, the results will display all species or mixtures that match the selected combination of parameters. Any combination of these parameters (singly, some, or all) can be used to constrain the search for species or mixtures.

As with searches constrained by **Conservation Practice, Practice Purpose**, and/or **MLRA** (described above in Section 4.51), results tables will display mixtures and species in the same table, with mixtures listed first – unless the drop-down option of '**Mix**' is selected under **Plant Type**. If this latter option is selected, only mixtures assigned to the selected combination of constraint parameters will be displayed.

1. First example – the planner wishes to conduct a global search in order to identify all species and pre-set guideline mixtures within the **eVegGuide** that are: 1) native resident status; 2) perennial growth form; 3) ease of establishment rated as 'Easy' (code 3); and 4) a peak bloom period that contains the month of April (code 4) (Figure 19). From the blank **PLANT-PRACTICE SEARCH** window, enter these selections using the drop-down selection lists and actual data entry (as applicable), and then click on **SEARCH**.

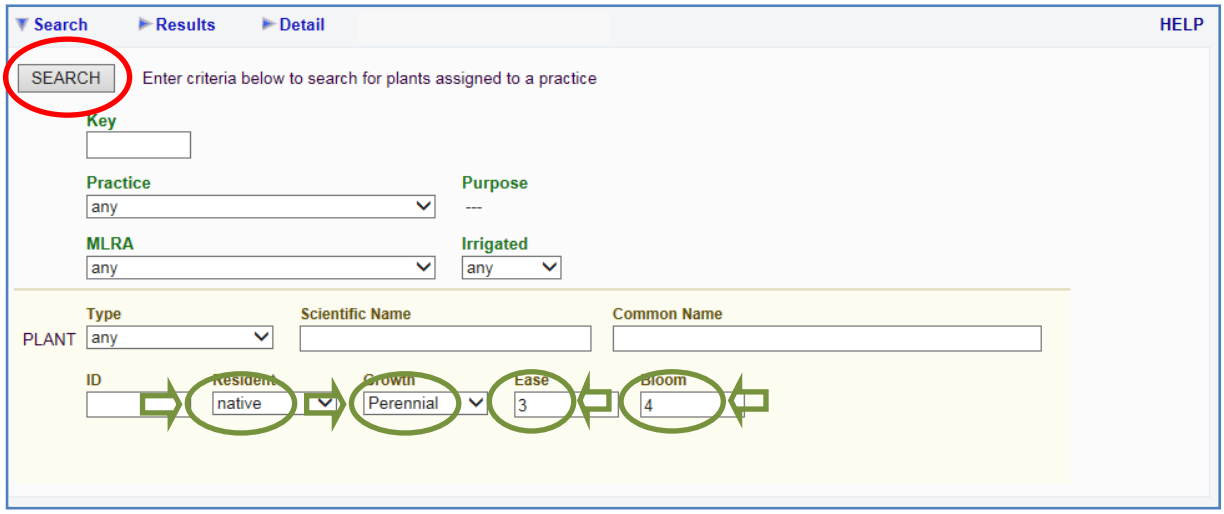


Figure 19. Using a selected set of biological and ecological parameters as combined constraints in a search for species or pre-set guideline mixtures – as initiated from the PLANT-PRACTICE SEARCH blank window.

While this global search can provide useful information, the results provide an extremely large listing – over 2,700 line-item entries (not shown here as a result) – which may render review of the list and location of desired species or mixtures difficult. A more logical and

efficient search would be to combine these biological / ecological parameter constraints with a specific practice, practice purpose(s), and/or MLRA's. Doing this will narrow the results list of species and mixtures significantly, thereby enabling a more focused and efficient search for any species or mixtures of interest to the planner – as in the example below.

2. Second example – the planner wishes to conduct a search to identify all species and pre-set guideline mixtures within the **eVegGuide** that are assigned to: 1) Conservation Practice 422 – Hedgerow Planting; 2) Practice Purpose 1 – Attract Beneficial Insects; 3) MLRA 15; 4) native resident status; 5) perennial growth form; 6) ease of establishment rated as 'Easy' (code 3); and 7) a peak bloom period that contains the month of April (code 4) (Figure 20). Enter all these selections using the drop-down selection lists and actual data entry (as applicable), and then click on **SEARCH**.

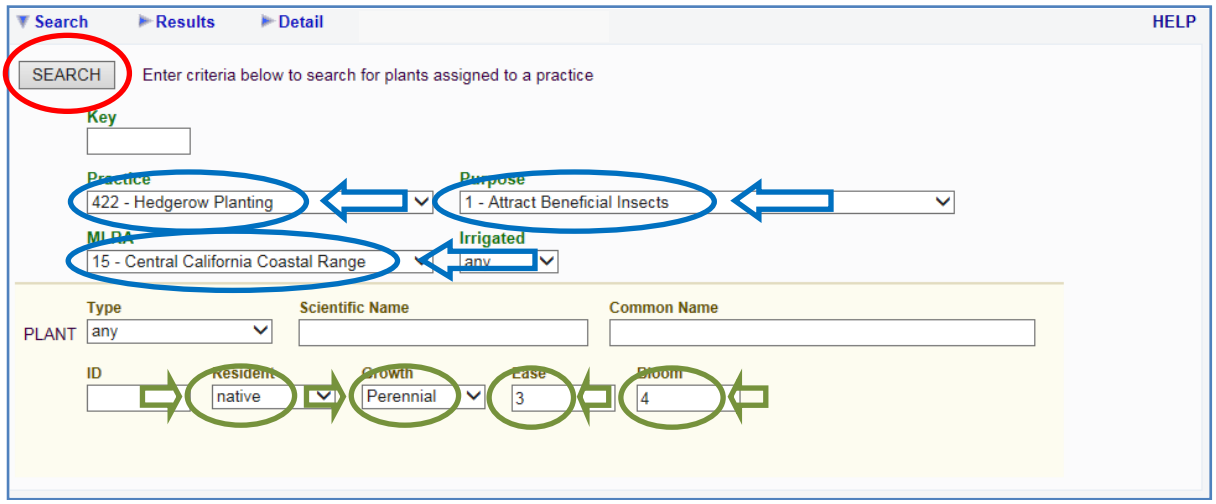


Figure 20. Using a selected set of conservation practice, MLRA, biological and ecological parameters as combined constraints to narrow and focus the search for species or pre-set guideline mixtures.

The results of this modified, more focused search are indeed significantly lesser in number (7 line-item entries), as displayed in Figure 21. Note that only individual species are available

Search Results Detail HELP

7 results Click on to view a record

Key	MLRA	Practice	Purpose	Irrigated	Type	Scientific Name	Common Name	Ease
t11367	15	422	1 - Attract Beneficial Insects	3 years	Forb	Achillea millefolium	Common yarrow	3
t11332	15	422	1 - Attract Beneficial Insects	no	Grass	Bromus carinatus	California brome	3
t11347	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Ceanothus gloriosus	Wild lilac	3
t11348	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Ceanothus gloriosus	Wild lilac	3
t11338	15	422	1 - Attract Beneficial Insects	3 years	Legume	Cercis occidentalis	Western redbud	3
t11337	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Eriogonum fasciculatum	California buckwheat	3
t11361	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Prunus ilicifolia sp. ilicifolia	Hollyleaf cherry	3

Figure 21. Results from using conservation practice, practice purpose, MLRA, biological and ecological parameters as combined constraints to narrow and focus the search for species or pre-set guideline mixtures.

for this particular set of combined parameter constraints. The tabular data are automatically sorted by **Scientific Name**. However, the sorting order can be changed by clicking on any column heading shown in **bold, blue** font.

A slightly broader but similar search could also be conducted by *changing one parameter* – i.e., leave **Practice Purpose** as 'Any' in the drop-down selection list (which allows listing of all species or mixtures assigned to Conservation Practice 422, without regard to Practice Purpose). To accomplish this, first click on '**Search**' in the extreme upper-left corner to return to the **PLANT-PRACTICE SEARCH** window. Select 'Any' from the drop-down selection list for **Purpose** (Figure 18), and then click on **SEARCH**. Results of this slightly modified search are shown in Figure 22, now with nearly 40 line-item entries displayed for this latest example search across all **Practice Purposes**.

As before with previous examples (for **PLANT-PRACTICE SEARCH, MIX COMPONENT SEARCH**, and **PLANT SEARCH**), the user is encouraged to examine ("experiment with") several different combinations of available parameter constraints in order to realize the full potential and querying power of this module.

Search | Results | Detail | HELP

38 results | Click on ○ to view a record

Key	MLRA	Practice	Purpose	Irrigated	Type	Scientific Name	Common Name	Ease
t11367	15	422	1 - Attract Beneficial Insects	3 years	Forb	Achillea millefolium	Common yarrow	3
t11898	15	422	2 - Other	3 years	Forb	Achillea millefolium	Common yarrow	3
t12472	15	422	3 - Attract Pollinators	3 years	Forb	Achillea millefolium	Common yarrow	3
t12397	15	422	3 - Attract Pollinators	no	Legume	Amorpha fruticosa	western false indigo	3
t11870	15	422	2 - Other	3 years	Shrub	Artemisia californica	California sagebrush	3
tr36	15	422	3 - Attract Pollinators	3 years	Shrub	Artemisia californica	California sagebrush	3
t11332	15	422	1 - Attract Beneficial Insects	no	Grass	Bromus carinatus	California brome	3
t11838	15	422	2 - Other	no	Grass	Bromus carinatus	California brome	3
t11347	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Ceanothus gloriosus	Wild lilac	3
t11348	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Ceanothus gloriosus	Wild lilac	3
t11845	15	422	2 - Other	3 years	Shrub	Ceanothus gloriosus	Wild lilac	3
t11338	15	422	1 - Attract Beneficial Insects	3 years	Legume	Cercis occidentalis	Western redbud	3
t11862	15	422	2 - Other	3 years	Legume	Cercis occidentalis	Western redbud	3
t12410	15	422	3 - Attract Pollinators	3 years	Legume	Cercis occidentalis	Western redbud	3
t11337	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Eriogonum fasciculatum	California buckwheat	3
t11860	15	422	2 - Other	3 years	Shrub	Eriogonum fasciculatum	California buckwheat	3
t12421	15	422	3 - Attract Pollinators	3 years	Shrub	Eriogonum fasciculatum	California buckwheat	3
tr11920	15	422	4 - Monarch Habitat	3 years	Shrub	Eriogonum fasciculatum	California buckwheat	3
t11874	15	422	2 - Other	no	Forb	Eschscholzia californica	California poppy	3
t12422	15	422	3 - Attract Pollinators	no	Forb	Eschscholzia californica	California poppy	3
t12424	15	422	3 - Attract Pollinators	no	Grass	Festuca californica	California fescue	3
t12431	15	422	3 - Attract Pollinators	no	Forb	Grindelia camporum	Great Valley gumweed	3
tr8013	15	422	3 - Attract Pollinators	3 years	Shrub	Isocoma menziesii	White flowered goldenbush	3
tr8033	15	422	3 - Attract Pollinators	3 years	Shrub	Lonicera hispidula	Pink honeysuckle	3
tr8044	15	422	3 - Attract Pollinators	3 years	Legume	Lupinus albifrons	Silver bush lupine	3
t12447	15	422	3 - Attract Pollinators	3 years	Shrub	Mahonia aquifolium	Hollyleaved barberry, Oregon grape	3
t11361	15	422	1 - Attract Beneficial Insects	3 years	Shrub	Prunus ilicifolia sp. ilicifolia	Hollyleaf cherry	3
t11854	15	422	2 - Other	3 years	Shrub	Prunus ilicifolia sp. ilicifolia	Hollyleaf cherry	3
t12461	15	422	3 - Attract Pollinators	3 years	Shrub	Prunus ilicifolia sp. ilicifolia	Hollyleaf cherry	3
tr33	15	422	3 - Attract Pollinators	3 years	Tree	Quercus agrifolia ssp. agrifolia	California live oak	3
tr8118	15	422	3 - Attract Pollinators	3 years	Shrub	Rhamnus ilicifolia	Hollyleaf redberry	3
t11890	15	422	2 - Other	3 years	Shrub	Rhus ovata	Sugar bush	3
tr11922	15	422	4 - Monarch Habitat	3 years	Shrub	Rhus ovata	Sugar bush	3
tr12644	15	422	3 - Attract Pollinators	3 years	Shrub	Rhus ovata	Sugar bush	3
t11892	15	422	2 - Other	3 years	Shrub	Salvia apiana	White sage	3
tr11940	15	422	4 - Monarch Habitat	3 years	Shrub	Salvia apiana	White sage	3
tr12656	15	422	3 - Attract Pollinators	3 years	Shrub	Salvia apiana	White sage	3
tr12658	15	422	3 - Attract Pollinators	3 years	Shrub	Salvia leucophylla	Purple sage	3

Figure 22. Results from using conservation practice (*without* regard to practice purpose), MLRA, biological and ecological parameters as combined constraints to narrow and focus the search for species or pre-set guideline mixtures.