

**Request for Proposal  
CNPS Rare Plant Inventory  
Website Enhancements Project  
Submitted July 21, 2016  
Submission Due by September 1, 2016**

---

**SYNOPSIS**

We are seeking a contractor to modify existing Rare Plant Inventory (RPI) website pages with updates and features users are requesting. The subject matter is rare and endangered plants in California and related information.

- **Primary Technologies:** Google Web Tool Kit, Java, MySQL, Javascript, Cascading Style Sheets
  - **Existing Website:** <http://www.rareplants.cnps.org/>
  - **Budget:** \$15,000
  - **Timeline:** Work to be completed by the end of 2016
  - **Contractor to Provide:** Cover letter including qualifications, and three references based upon supporting exhibits by September 1, 2016 via email.
  - **Contact Information**  
California Native Plant Society, 2702 K Street, Suite 1, Sacramento, CA 95816  
Phone: 916.447.2677  
Email: [asims@cnps.org](mailto:asims@cnps.org) and [dmagney@cnps.org](mailto:dmagney@cnps.org)
- 

**BACKGROUND**

The existing public website has been in place since late 2010 with only minor changes or fixes occurring.

Data updates involve automatic processes sending data from source databases in the California Department of Fish and Wildlife data center to the third party host Kattare. There, RPI code recreates the website using the most current data. (See diagram in Exhibit B)

**Project Advisors**

- Aaron Sims (CNPS Rare Plant Botanist)
- David Magney (CNPS Rare Plant Program Manager)
- Brad Jenkins (Project Technical Advisor)
- Melissa Guajardo (CNPS Associate Director)

**Future Work:** After this project is completed, a new project will begin to transfer source databases from the CA Dept. of Fish and Wildlife data center to a new host. The new project may include development of new front-end, data-entry, web accessible forms.

## Assumptions

1. Developer works as an independent contractor.
2. Tools: Developer will use own tools and development environment. Indirect expenses will be covered by Developer unless specifically identified in the contract.
3. Testing: Developer will run tests directly related to requirements. CNPS will run their own unit tests and overall system validation tests.
4. All programming code and methods of presentation created for this project will be independently owned and useable by CNPS and possibly the contractor, unless such ownership violates the rights, copyrights, or patents of a third party. A final copy of any source code produced and used in the RPI system will be provided to CNPS.

## Supporting Exhibits

1. Exhibit A – High level project tasks and responsibility plan
2. Exhibit B – High level data flow and processing diagram of existing system
3. Exhibit C – General data schema (may be incomplete)
4. Exhibit D – Requested tasks and requirements list
5. Exhibit E – Flora Status Requirement Detail
6. Exhibit F – Plant Profile Taxonomy Example

---

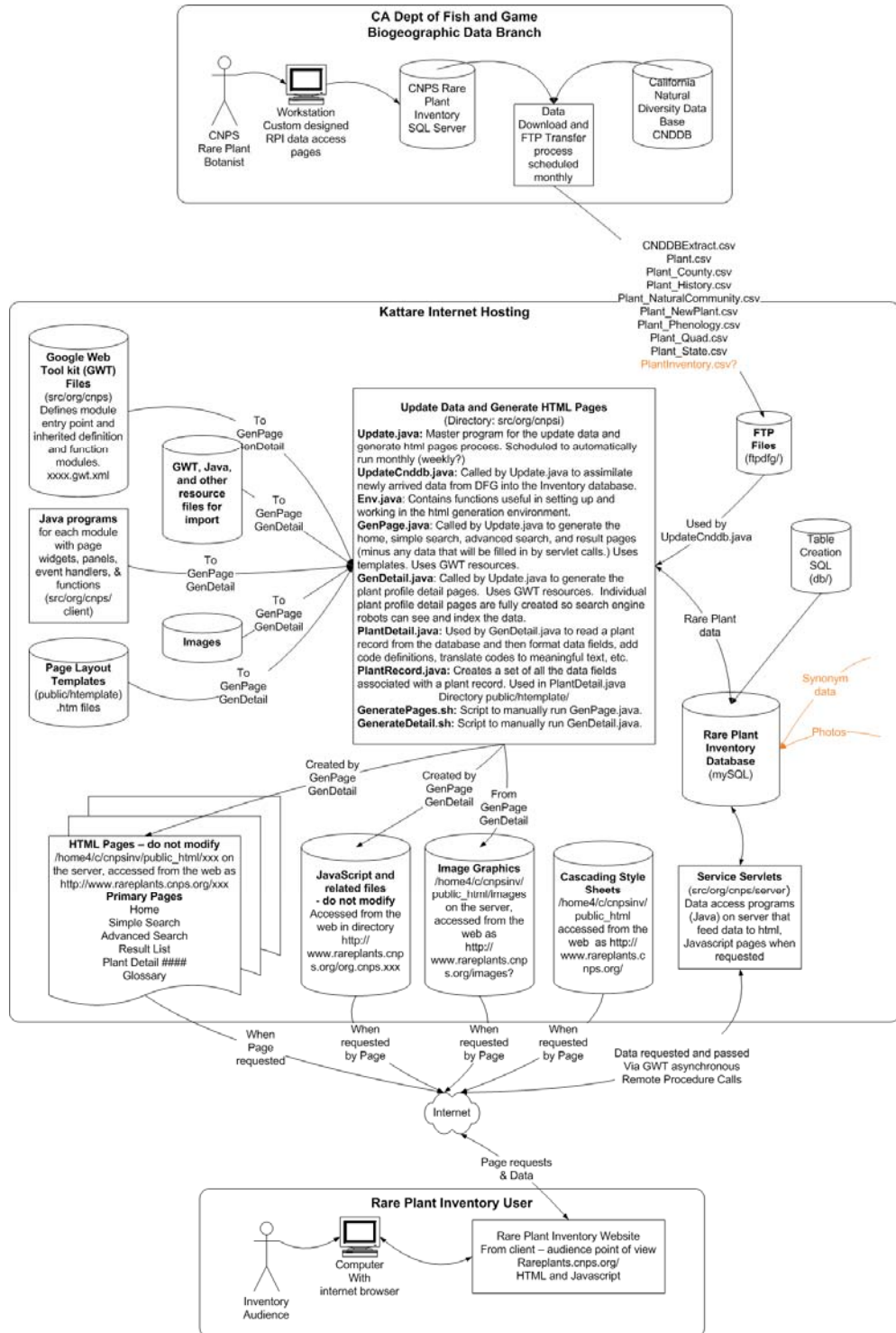
## EXHIBIT A

### High Level Project Tasks and Responsibility Plan

PHASE, ACTIVITY	PRIMARY RESPONSIBLE	SCHEDULE
Create requirements list	Sims, Jenkins	Complete 2016 June
Create and Distribute RFP	Sims, Jenkins, Guajardo	June, July
Select Vendor, Update Plan	Sims, Jenkins, Magney, Guajardo	July, August
Development (Final detail design work, programming)	Vendor	September +
Create unit and system test plans	Jenkins, Sims, Vendor	September +
Testing	Jenkins, Sims, Vendor, users	
Documentation (update existing)	Jenkins, Vendor, Sims	
Final System Test and Go-Ahead Decision	Sims, Magney, Jenkins	
Deploy, Finalize	Vendor, Jenkins, Sims	Before 12/31/2016
Monitoring and Fixes	Sims, Vendor	One month

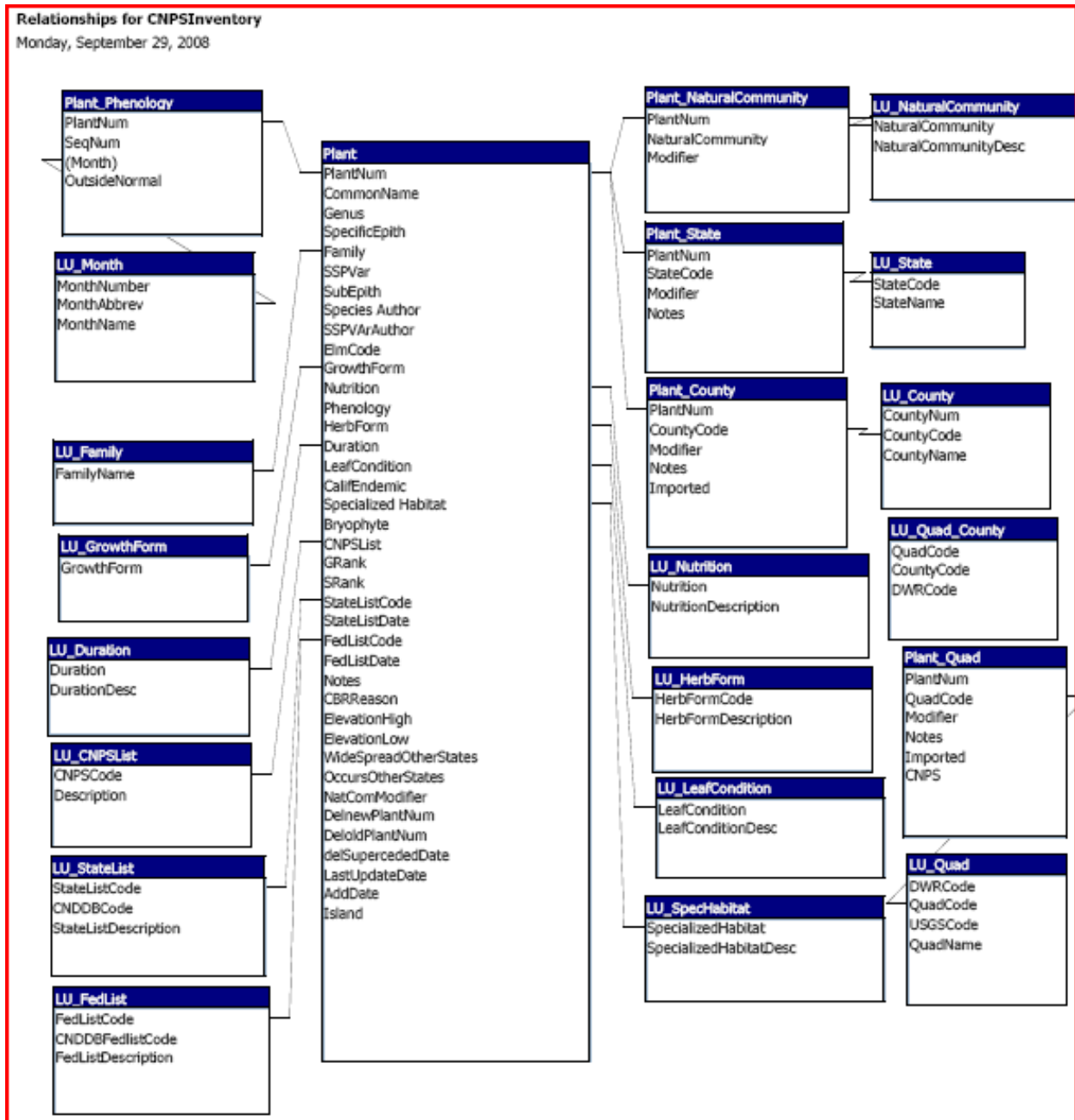
**EXHIBIT B**

**High Level Data Flow and Processing Diagram of Existing System**



**EXHIBIT C**

**General Data Schema**  
(may be incomplete)



**EXHIBIT D**

**Requested Tasks and Requirements List**

Copying this table to a spreadsheet will help with sorting by Page, Related Work, and/or Development Sequence.

ID	Page	Title, Description	Related Work	Dev Seq
11	Application	<p><b>Full Data Search Capabilities</b></p> <ol style="list-style-type: none"> <li>1. Create autofill for all common and scientific plant names after the first two letters are entered.</li> <li>2. Synonyms and considered-but-rejected plants are included in autofill</li> <li>3. Enable search of common names with apostrophes to display results. Example, currently entering "Hickman's onion" into search bar will bring up no results, when in fact this is a common name included in the Inventory. This may be resolved after auto-entry is enabled.</li> <li>4. Enable search of "subsp." instead of "ssp.". The use of "subsp." is now the standard and should be searchable even though the Inventory only includes "ssp.". This may be resolved after auto-entry is enabled.</li> </ol>	Subsp	4
19	Advanced Search - New	<p><b>Add "Plants Added by Year"</b></p> <ol style="list-style-type: none"> <li>1. Make this search function the same as it is in Simple Search, and ensure that Criteria Matches and Total Matches work for both before and after years entered.</li> <li>2. Put this search criterion in List / Rank grouping under CA Rare Plant Rank.</li> </ol>		2
24	All Pages	<p><b>Add Full Data Search Navigation Header</b></p> <p>Add a Full Data Search field to the top of every page of the Inventory in the space between "Join CNPS" and "Simple Search" boxes. Narrow the dividers between "Home" "About the Inventory" "CNPS Home" "Join CNPS" "Simple Search" and "Advanced Search" buttons as necessary to ensure a proper fit of the additional Full Data Search field.</p>	Head	3
36	Plant List	<p><b>Elevation</b></p> <p>Include elevation range in feet as well as meters. Show elevation in meters followed by elevation in feet in parentheses. Abbreviate measurements. Ensure that feet are rounded to nearest 5 unless less than 10 feet. Example: Elevation: 500-1600 m (1640-5250 ft)</p>	Elev.	1
61	Plant Profile - Location	<p><b>Map Initial Zoom Fix</b></p> <p>Fix initial zoom scale of quad/county map</p> <ol style="list-style-type: none"> <li>i. Initial scale of map should include all quads and counties , including outliers</li> <li>ii. For plants with only one to a few quads in a single area, make initial map zoomed in two clicks of the plus button.             <ol style="list-style-type: none"> <li>a) For instance, go to this record, then click the "+" button on bottom right of map two times to see sample of proper zoom level achieved: <a href="http://www.rareplants.cnps.org/detail/1573.html">http://www.rareplants.cnps.org/detail/1573.html</a></li> </ol> </li> </ol>	Map	

65	Simple Search	<b>Scientific Names List Query</b> 1. Add new “Query by List of Scientific Names” section under “Scientific Name” section. 2. Enable users to type, or cut and paste a list of scientific names 3. Allow entries of subspecies to be “ssp.” or “subsp”.	subsp	
82	Advanced Search - List / Rank	<b>Rare Plant Rank Updates</b> 1. Change “Rare Plant Rank (aka CNPS List)” to “California Rare Plant Rank” 2. Change titles of the following ranks: “1A Extirpated in CA, Rare or Extinct Elsewhere” to “1A Extirpated, Extinct” ; “2A Extirpated in CA, Common Elsewhere” to “2A Extirpated in CA” 3. Create a “Select / Deselect All” box that can be checked to select all California Rare Plant Ranks at once. Allow individual ranks to be unselected or reselected after “Select / Deselect All” is checked.	CRPR	
85	Simple Search	<b>Rare Plant Rank Text Modifications</b> 1. Change “Rare Plant Rank” to “California Rare Plant Rank” 2. Change titles of the following ranks: “1A Extirpated in CA, Rare or Extinct Elsewhere” to “1A Extirpated, Extinct ; “2A Extirpated in CA, Common Elsewhere” to “2A Extirpated in CA”. 3. Add “Postponed” check box under “Considered But Rejected”. The “Postponed” check box should be grayed out and serve as a place holder until we can get postponed taxa included in export.	CRPR	
86	Plant Profile - Rarity Status	<b>CA Rare Plant Rank Definitions</b> Use the following definitions in Plant Profile pages for California Rare Plant Ranks (note, there are separate, succinct definitions for the Advanced and Simple Search pages.) Update the definitions for California Rare Plant Ranks i. Change “1A Extirpated in California, rare or extinct Elsewhere” to “1A Presumed extirpated in California, rare or extinct elsewhere” ii. Change “1B Rare, threatened, or endangered in California and elsewhere” to “1B Rare or Endangered in California and elsewhere” iii. Change “2A Extirpated in California, common elsewhere” to “2A Presumed extirpated in California, common elsewhere” iv. Change “2B Endangered in California” to “2B Rare or Endangered in California, common elsewhere” v. Change “3 Needs review” to “3 More information needed” vi. Change “4 Uncommon in California” to “4 Limited distribution in California”	CRPR	
88	Plant Profile - Location	<b>States Missing Names</b> Spell out 2-letter abbreviated states that display with an “!” All states should be included in the database, both abbreviation and full name. If some other issue is causing “!” to display, fix it.		
89	Plant Profile - Location	<b>States to Other States</b> 1. Change “States:” to “Other States” 2. Remove California from the display list of states (shows up always by default, but if a plant wasn’t in California, it wouldn’t be included in the Inventory).		1

**Name Display Modification and Reference Links**

1. Revise name/taxonomy section to conform to Exhibit F; place scientific name in italics without authors followed by common name in small caps above and outside of the taxonomy box, add "Taxonomy" in a gray cell at the top of the box with a glossary symbol link with hover "More in the Glossary" as seen in other info box headers, and link to the top of the Nomenclatural Usage section of the Inventory Glossary

(<http://www.rareplants.cnps.org/glossary.html>)

2. Re-order, rename, and add the following titles and create the following links within the title header (not the displayed results) to be consistent with hover and links of other subject headers to Inventory Glossary:

A. Scientific Name: link to the top of Scientific Names section of Inventory Glossary and add the following hover note: "Click for info about scientific names and nomenclatural usage"

B. Common Name: link to top of Common Names section of Inventory Glossary and add following hover note: "Common or vernacular name"

C. Family: Link to the top of Family Names section of Glossary and add following hover note: "Technical name of the family to which the plant belongs"

D. Synonyms: Link to top of Synonyms section of Glossary (note, this will be a new section created under Family Names in the Inventory Glossary) and add the following hover note: "Previous name(s) in the CNPS Inventory"

E. Element Code: Link to top of Element Code section of Glossary (note, this new section/definition will be created under a new Synonyms section of the glossary) and add the following hover note: "Unique record identifier for the species"

F. PLANTS Symbol [remove "USDA" to shorten title]: Link to top of USDA PLANTS Symbol section of Glossary (note, this new section will be created under the new Element Code section of the glossary) and add the following hover note: "USDA abbreviation of scientific name"

G. Flora Status [see ID #98 for creation of this new category]: Link to top of Flora Status section of Glossary (note, this new section/definition will be created under the new USDA PLANTS Symbol section of the glossary) and add the following hover note: "Status in The Jepson Manual, Jepson eFlora, and Flora of North America"

2. Create links of the output display for Family (A), Element Code (B), PLANTS Symbol (C), and Flora Status (D) in the Taxonomy section. See Exhibit F (example follows *Arctostaphylos malloryi*):

A. Ericaceae: link to family in Jepson eFlora

([http://ucjeps.berkeley.edu/eflora/eflora\\_display.php?tid=130](http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=130))

B. PDERI042V0: link to element code in NatureServe

(<http://explorer.natureserve.org/servlet/NatureServe?searchSciOrCommonName=Arctostaphylos+malloryi&x=3&y=10>)

C. ARMA31: link to corresponding page in USDA PLANTS Database, <http://plants.usda.gov/core/profile?symbol=ARMA31>

D. Included in JM93, TJM2, FNA: (see ID #98 and Exhibit E)

98	Plant Profile - Name Box	<b>Flora Status</b> See Exhibit E.		2
101	Advanced Search	<b>Auto Scroll Problem</b> When search boxes are checked then unchecked, it automatically scrolls back to the top of page. Eliminate this from happening, ensuring that the page remains static when unchecking a search box. i. Example, under Bloom Time at the bottom of the page, if you check box next to January, then uncheck the box, it forces you back to the top of the page. Cumbersome to use, especially if you accidentally check something.		
105	Advanced Search - Quadrangle	<b>Quad Text Box</b> 1. TITLE: Change title of "USGS Code / Quad Name" to "Quad Name / Quad Code". 2. AUTO-FILL: Enable auto-fill of quad name / quad code after 2 letter / digit entry instead of 3. 3. QUAD NAMES WITH " ' ": Enable search of quads that include " ' ", including "O'brien", "O'neals", "Ono 15' ", etc. (see here for list: <a href="http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=quads.htm">http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=quads.htm</a> ). 4. USGS CODES TO QUAD: Change USGS Codes title to Quad Codes. i. Exchange letter in USGS codes to corresponding alphanumeric. Example: a) 38120B6 to 3812026; where A=1, B=2, C=3, etc 5. SELECTED, DESELECT QUADS BOX: Create box under newly titled "Quad Name / Quad Code" section that displays selected quad names and codes. Every time a quad is selected by manual entry or from the map, it needs to be added to the box. Enable previously selected quads that show up in box to be removed by clicking an "x" to the right of their entry 6. CHANGE NOTE: Replace lengthy note in this section with the following: Includes unprocessed quads for CRPR 3 and 4 plants; unprocessed location data has not been quality controlled and may contain errors.	Quad Map	
106	Advanced Search - County or Island	<b>Size and Sort Improvements</b> 1. Expand search box 2 or 3 rows to allow easier selection/deselection of counties or islands. 2. Expand width of search box to same width of USGS quad name search box below or same width as county search in Simple Search, so full place name is visible. 3. Alphabetize counties and islands, while keeping islands in their own section at the end. For example existing issue: "San" should always come before "Santa". 4. Change spelling of "Anacarpa Island" to "Anacapa Island". Verify correct spelling of all counties and islands.		



113	Plant List	<p><b>All Data Export to Excel</b></p> <p>1. ALL DATA: Include all Inventory data in CSV export whether included in Column Display or not.</p> <p>2. SEQUENCE: Data export sequence: Scientific Name, Common Name, Family, Lifeform, CRPR, Grank, Srank, CESA, FESA, Blooming Period, Habitat, Micro Habitat, Elevation Low (m), Elevation Low (ft), Elevation High (m), Elevation Low (ft), CA Endemic, States, Counties, Quads, EO Total, EO A, EO B, EO C, EO D, EO X, EO U, EO Historical, EO Recent, EO Extant, EO Possibly Extirpated, EO Extirpated, Notes, Full Scientific Name, Synonyms, Element Code, USDA Plants Symbol, Flora Status [new category outlined in ID 98], CBR Reason, PPD Reason, Date Added, Date Changed [include status change and date as indicated in ID #123], Last Update.</p> <p>3. ELEVATION: Displaying elevation in feet in addition to meters is new. The export currently does not include this info, but can be generated for online export. Feet should be rounded up and down to 5s after meter conversion.</p>	Elevation Habitat Quad	4
114	Plant List	<p><b>Blooming Period</b> (existing data)</p> <p>1. Include blooming periods after “Lifeform” on Plant List page by default.</p> <p>2. Display blooming periods as string of text with months abbreviated to three letters and uncommon months in parenthesis. An example of a plant that uncommonly blooms in January, February, May, and June, and regularly blooms in March and April is as follows: (Jan-Feb)Mar-Apr(May-Jun)</p> <p>3. Allow blooming periods to be selected on/off in “Modify Columns” section.</p>	BloomP er	1
116	Plant List	<p><b>Remove, Add Functions</b></p> <p>1. Remove “Modify Search Criteria” entirely. Users can simply use the back button in their internet browser to go back and modify if they want.</p> <p>2. Add “Display Habitats” to left of “Display Photos” function (between “Modify Sort” on left and “Display Photos” on right.) Clicking “Display Habitats” button will display habitats in list page at end of last column, and change title of button to “Remove Habitats” (as seen with Display Photos button.)</p>	Habitat	2
123	Plant Profile - Notes Box	<p><b>Rank Change</b></p> <p>If a plant has changed in rank, include information of rank change and date of change at top of notes, delineated by dotted line</p> <p>1) Follow convention on “Additions / Changes / Deletions” section of home page (<a href="http://www.rareplants.org">www.rareplants.org</a>), only including Changes / Deletions since additions are shown in “Date Added” section</p> <p>2) Examples:</p> <ul style="list-style-type: none"> <li>a. Changed from 1B.2 to 4.3 on 2016-03-22</li> <li>b. Changed from 1B.3 to 1B.1 on 2015-01-25</li> <li>c. Changed from 2B.3 to CBR on 2016-01-27</li> <li>d. See Additions / Changes / Deletions on home page for more examples.</li> <li>e. To save space, no title is needed for this section and it should only be present if a plants rank has changed.</li> </ul>	CRPR	

127	Plant Profile - Occurrence Data	<b>Label Updates</b> Make the following changes in the Occurrence Data from DFG box i. Change “DFG” to “CDFW” ii. Change “Extirpated” at the bottom to “Presumed Extirpated”	Srank	
134	Advanced Search - Quadrangle	<b>Select Multiple Individual Quads</b> 1. Add check button (single selection radio circle) titled “Multiple Quads” under “9 Quads”. Retain single quad and 9 quads search options. 2. When selected, allow selection/deselection of one to multiple quads using mouse click on the map.	Quad Map	
140	Advanced Search - Global Rank	<b>Add New Global Ranks to Search Box</b> 1. Add the following in order after G4: G5, GH, GX, GU, GNR 2. Add the following in order after T4: T5, TH, TX, TU, TNR 3. Update search call as needed to utilize these new ranks.	Grank	
141	Advanced Search - State Rank	<b>Add New State Ranks to Search Box</b> 1. Add the following in order after S4: S5, SH, SX, SU, SNR 2. Update search call as needed to utilize these new ranks.	Srank	
143	All Pages	<b>Citation</b> Revise the suggested citation at the bottom of every page to the following (with year and access date auto generated): “California Native Plant Society, Rare Plant Program. 2016. <i>Inventory of Rare and Endangered Plants of California</i> (online edition, v8-03). Website <a href="http://www.rareplants.cnps.org">http://www.rareplants.cnps.org</a> [accessed 05 April 2016].	Foot	
144	All Pages	<b>Header</b> Change top right title “Rare and Endangered Plant Inventory” to “Inventory of Rare and Endangered Plants”	Head	
145	Plant Profile - Rarity Status	<b>Federal, State Listing Status Codes</b> 1. Ensure Federal and State Listing Status definition for each two letter abbreviation is correct. Note: the two letter abbreviation FD is now used instead of DL for Federal Delisted (DL seems to be hard coded in the database as I cannot delete it, however, no plants are designated with a DL category anymore) a) FE = Endangered b) FT = Threatened c) FC = Candidate d) FD = Delisted e) CE = Endangered f) CT = Threatened g) CR = Rare h) CC = Candidate i) CD = Delisted 2. Change “Species of Concern” in Federal Listing Status to “Candidate”. Plants with FC code are “Federal Candidates”, there is no such thing as species of concern for plants. This is also identified in an Advanced Search requirement.	Flist Slist	
146	Plant Profile - Location	<b>Quad Codes</b> Change USGS Codes to Quad Codes. Exchange letter in USGS codes to corresponding alphanumeric. Example: a) 38120B6 to 3812026; where A=1, B=2, C=3, etc.	Quad	

147	Plant List	<p><b>Search Criteria Box - Quads</b></p> <p>1. Note: selection of any number of quads is a new feature developed as a separate requirement in this document. (See Requirement ID # 105)</p> <p>2. When search criteria includes selection of quadrangles, display full names of all quads. For example: Found in 2 quads: Tomales (3812228), Drakes Bay (3812218).</p>	Quad	2
148	Plant List	<p><b>Habitats</b> (existing data)</p> <p>1. Add ability to select and include habitats from “Modify Columns” menu.</p> <p>2. When added by users, habitats (without habitat modifiers) should display the same way they are seen on plant profile pages as seen in following example:</p> <ul style="list-style-type: none"> <li>• Chaparral (maritime)</li> <li>• Cismontane woodland</li> </ul>	Habitat	3
149	Plant Profile - Rarity Status	<p><b>Global Rank</b></p> <p>1. Move Global Rank category above State Rank</p> <p>2. For G ranks with a “Q” in them, change “(There are taxonomic questions associated with this name)” to “Q: Questionable taxonomy”.</p> <p>Example: Global Rank: G2G3Q G2: Imperiled. G3: Vulnerable. Q: Questionable taxonomy</p> <p>3. For G ranks with a “T” in them, change to the following format:</p> <p>a) Example 1: Global Rank: G4T3 G4: Species apparently secure. T3: Subspecies or variety vulnerable.</p> <p>b) Example 2: Global Rank: G5T2T3 G5: Species secure. T2: Subspecies or variety imperiled. T3: Subspecies or variety vulnerable</p> <p>4. Remove “considering populations outside California” in all G rank categories. (Repetitive, T rank function)</p>	Grank	
151	Plant List	<p><b>Sort Corrections</b></p> <p>1. Fix error in sorting elevations. When sorting by elevation, it starts out in order but then...</p> <p>2. Ensure that all other columns alphabetize correctly.</p>	Elevation	3
152	Plant List	<p><b>Rare Plant Rank - Name Change</b></p> <p>Change “Rare Plant Rank” to “CA Rare Plant Rank” on list and Modify Columns section. Note: all instances of “Rare Plant Rank” should be preceded by “California” (or “CA” depending on available space)</p>	CRPR	1
153	Plant List	<p><b>Columns Default Sequence and Titles</b></p> <p>1. Default titles and sequence displayed: Scientific Name, Common Name, Family, Lifeform, Blooming Period, CA Rare Plant Rank, Global Rank, State Rank.</p> <p>2. Optional titles and display sequence default; accessible from Modify Columns function: Federal Status, State Status, Habitat, Lowest Elevation (m), Highest Elevation (m), Lowest Elevation (ft), Highest Elevation (ft), California Endemic, Photo.</p>	BloomP er Habitat Elevation CRPR	3

154	Advanced Search - Quadrangle	<p><b>Change to Drop Down Map</b></p> <ol style="list-style-type: none"> <li>1. Turn the “Select Quads from a Map” button into a drop down map instead of a hovering map. Allow all search criteria below map to be viewed and utilized even when map is open.</li> <li>2. Allow map to be open and closed by pressing button or drop down arrow.</li> <li>3. Ensure enough open space is available on left and/or right side of map for trackpad navigation and scrolling on small tablet or mobile devices (currently, when map is opened on iPhone, one cannot scroll to enter any more search criteria or view results).</li> </ol>	Quad Map	
155	Advanced Search - Natural Community	<p><b>Natural Community to "Habitat"</b></p> <ol style="list-style-type: none"> <li>1. Change name of “Natural Community” to “Habitat”. With this change, the term “Habitat” should be consistent throughout the Inventory, in plant list and detail pages, and glossary</li> <li>2. Expand search box 2 or 3 rows to allow easier selection/deselection of habitats</li> </ol>	Habitat	1
156	Advanced Search - List / Rank	<p><b>Federal Listing Status Additions</b></p> <ol style="list-style-type: none"> <li>1. In section title, Capitalize the “ l ” in listing to Listing.</li> <li>2. Change “Species of Concern” to “Candidate”</li> <li>3. Add a checkbox for "Delisted".</li> <li>4. Move "Not Listed" and its checkbox under Endangered (in new row.)</li> <li>5. Update code to search for Delisted. (Code = FD for Federal Delisted)</li> </ol>	Flist	
157	Advanced Search - List / Rank	<p><b>State Listing Status Additions</b></p> <ol style="list-style-type: none"> <li>1. Create two rows for checkboxes. Keep Endangered, Threatened, and Rare on top row.</li> <li>2. Add a checkbox for Candidate on the top row to the right of Rare.</li> <li>3. Add a checkbox for Delisted in the first position of the second row, under Endangered.</li> <li>4. Move Not Listed to the second row, second position under Threatened.</li> <li>5. Update code to search for Candidate (code = CC for California Candidate) and Delisted (code = CD for California Delisted).</li> </ol>	Slist	
158	Advanced Search - New	<p><b>Add Plants not in Jepson eFlora</b></p> <ol style="list-style-type: none"> <li>1. Make this search function bring up only plants that are not currently included in the Jepson eFlora</li> <li>2. Research will need to be done to figure out how best this can be done. Can it be automated by searching for accepted names in eFlora? It will be associated with new results displayed on Plant Profile pages as outlined in ID #98</li> <li>3. Include the following link under search function: “See here for an explanation of why some plants in the CNPS Inventory are not included in the Jepson eFlora” and link to the Nomenclature Usage section of the Inventory Glossary.</li> </ol>		
160	All Pages	<p><b>Contributors Addition</b></p> <p>Add the following contributors to the “Contributors” section at the bottom of each page: The Jepson Flora Project (link: <a href="http://ucjeps.berkeley.edu/jepsonflora/index.html">http://ucjeps.berkeley.edu/jepsonflora/index.html</a>) ; The Consortium of California Herbaria (<a href="http://ucjeps.berkeley.edu/consortium/">http://ucjeps.berkeley.edu/consortium/</a>) ;The California Natural Diversity Database (link: <a href="http://www.dfg.ca.gov/biogeodata/cnddb/">http://www.dfg.ca.gov/biogeodata/cnddb/</a>)</p>	Foot	

161	Plant Profile - Rarity Status	<p><b>Global and State Rank Definition Display</b></p> <p>1. For G or S ranks with a “?” in them, include definition in the following format:</p> <p>a) Example 3: State Rank: S2? S2: Imperiled. ?: Inexact or uncertain numeric rank.</p> <p>b) Example 2: Global Rank: G3?T2? G3: Species vulnerable. ?: Inexact or uncertain numeric rank. T2: Subspecies or variety imperiled. ?: Inexact or uncertain numeric rank.</p> <p>2. For G or S ranks with a “C” in them, include definition “Extant only in captivity or cultivation”. Example: Global Rank: GXC GX: All sites are presumed extirpated. C: Extant only in captivity or cultivation</p>	Grank Srank	
162	Plant Profile - Rarity Status	<p><b>Global Rank Term Consistency</b></p> <p>1. Ensure that the following terms are consistently used for Global Ranks</p> <p>a) GX: Presumed Extinct b) GH: Possibly Extinct (all sites are historical) c) G1: Critically Imperiled d) G2: Imperiled e) G3: Vulnerable f) G4: Apparently Secure g) G5: Secure h) GU: Unrankable i) GNR: Unranked</p>	Grank	
163	Plant Profile - Location	<p><b>Elevation</b></p> <p>1. Move Elevation to the bottom of the Biology section at top of page, under Habitat. (California Endemic then becomes top item. This will help create a little more space for future information.)</p> <p>2. Include elevation in feet in parenthesis after elevation in meters, and abbreviate</p> <p>a) Round up or down to nearest 5’s after conversion from meters to feet b) Example: “765-2365 m (2510-7760 ft)”</p>	Elevation	1
165	Plant Profile - Location	<p><b>Notes Addition</b></p> <p>Update note to... “Species may be present in other areas where conditions are favorable. This data should NOT be substituted for pre-project review or for on-site surveys.”</p>		
172	Plant Profile - Rarity Status	<p><b>Subnational Rank Term Consistency</b></p> <p>Ensure the following terms are consistently used for State/Subnational Ranks</p> <p>SX: Presumed Extirpated SH: Possibly Extirpated (all California sites are historical) S1: Critically Imperiled S2: Imperiled S3: Vulnerable S4: Apparently Secure S5: Secure SU: Unrankable SNR: Unranked</p>	Srank	

175	Plant List	<b>1A and 2A EO Number Corrections</b> 1A and 2A plants show inaccurate total number of Element Occurrences and other display results in Occurrence Data from DFG section. Examples: <i>Carex livida</i> only has 1 EO, but results in RPI show 2; <i>Atriplex tularensis</i> only has 3 EOs, but results in RPI show 5, and many more.		
177	Plant List / Plant Profile	<b>CalPhotos Links:</b> 1. Fix links of photos to the actual photo in CalPhotos instead of link to full search of all photos of plant. 2. Create link titled "CalPhotos:" before photo copyright and link to search output of all photos of plant		

## EXHIBIT E

### Requested Tasks and Requirements: Plant Profile – Name Box, Flora Status

For new "Flora Status" section, include info and links to The Jepson eFlora (<http://ucjeps.berkeley.edu/eflora/>), Jepson Interchange (<http://ucjeps.berkeley.edu/interchange/index.html>), and Flora of North America (<http://www.efloras.org/>) as follows (showing examples for *Brasenia schreberi* unless otherwise noted):

1. For all of the following examples, say "Included in" preceding the flora name the taxon is included in, and say "Not in" preceding the flora name the taxon is not included in, using commas to separate floras
  - a) For plants included in the Jepson eFlora, create link titled "TJM2" and direct to the eFlora page as follows: [http://ucjeps.berkeley.edu/eflora/eflora\\_display.php?tid=16062](http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=16062)
  - b) For plants included in The Jepson Manual 1993, include text "JM93"
  - c) For plants included in the Flora of North America, include link titled "FNA" and direct to the eFloras page as follows: [http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=200007077](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=200007077)
  - d) For plants not included in the Jepson eFlora, do one of the following:
    - i. If treated as a synonym include text "Not in TJM2 (syn. *Scientific name*)"
      - Link "TJM2" to the Jepson Interchange for taxon in Inventory
      - Link "*Scientific name*" to the accepted name in Jepson eFlora
      - Example for *Grindelia hirsutula* var. *maritima*: "Not in [TJM2](#) (syn. [Grindelia hirsutula](#))"
      - If not included in eFlora but included in Jepson Interchange, include "Not in TJM2" and link TJM2 to Jepson Interchange
      - Example for *Arabis aculeolata*: "Not in [TJM2](#)"
    - ii. If not included at all (mostly for newly described taxa) include "Not in TJM2" without link
  - e) For plants not included in The Jepson Manual 1993, include text "Not in JM93"
  - f) For plants not included in the Flora of North America, include text titled "Not in FNA"
2. When included in multiple flora's use "+" between them to save space (as seen in Calflora), and use a comma between floras when not included
  - a) Example 1: "Flora Status: Included in JM93+TJM2+FNA"
  - b) Example 2: "Included in JM93+TJM2. Not in FNA"
  - c) Example 3: "Included in JM93. Not in TJM2, FNA"
  - d) Example 4: "Not in JM93, TJM2, FNA"

---

**EXHIBIT F**

**Requested Tasks and Requirements: Plant Profile – New Taxonomy Section**

Sample image of new taxonomy section:

*Arctostaphylos malloryi* MALLORY'S MANZANITA

Taxonomy 	
<b><u>Scientific Name:</u></b>	<i>Arctostaphylos malloryi</i> (W. Knight & Gankin) P.V. Wells
<b><u>Common Name:</u></b>	Mallory's manzanita
<b><u>Family:</u></b>	<a href="#">Ericaceae</a>
<b><u>Synonyms:</u></b>	<i>Arctostaphylos canescens</i> ssp. <i>malloryi</i>
<b><u>Element Code:</u></b>	<a href="#">PDERI042V0</a>
<b><u>PLANTS Symbol:</u></b>	<a href="#">ARMA31</a>
<b><u>Flora Status:</u></b>	Included in <a href="#">JM93</a> , <a href="#">TJM2</a> , <a href="#">FNA</a>