# Additional Topics Determining Grid Cell Size

All data sets that are derived and used in analysis in NatureServe Vista are in <u>raster</u> format. (For an explanation of raster data, please see Environmental Systems Research Institute [ESRI] help files). The grid cell size (pixel size) to be used as the default for rasters throughout the project is specified in the <u>Project</u> <u>Properties window</u>. While it is possible to select a different cell size for each NatureServe Vista analysis, it is recommended that the project default be used unless a different size is warranted by particular circumstances (e.g., having a large input data set and limited hard disk space). In such cases, it is important to select the grid cell size there are several considerations, listed and then described in detail below.

- Resolution of inputs
- Snap raster
- Space requirements
- Processing time

### **Resolution of inputs**

No data set can be more precise and accurate than the original source data. If the input data have a cell size of 100 meters, it would be impossible for any derivative data set to be more precise than that 100 m. So, selecting a cell size smaller than this (i.e., <100 m) would cause unnecessary processing without increasing the reliability of the data. Similarly, if the input source data are in vector format, selecting a cell resolution that represents a scale more precise than the input data sets would result in unnecessary processing, and could falsely imply more precision than is actually represented in the data set.

On the other hand, selecting a cell size that is too large for input data can cause the "loss" of information. When a vector layer is rasterized, it is possible for an entire vector feature to be positioned in the new grid such that it completely disappears from the data set. The process implemented by a GIS system to determine which cells will be attributed with a vector's value works like this:

- An imaginary line is drawn horizontally through the grid cells
- Any cell whose centerline is overlapped by a vector feature is attributed with that feature's attribute

The following example illustrates how a cell size that is too large for the input data can cause information to be unrepresented in the resulting raster. The upper polygon completely disappears from the resulting raster data set because of its size and position in the grid.



### Snap raster

NatureServe Vista utilizes the snap raster functionality in ESRI's ArcView application to tie spatial data layers as closely as possible so that relationships can be maintained between the layers throughout analyses, and results will be reliable. To insure this, the same cell size as that in the snap raster, or an even subdivision of that size (a power of 2, i.e., 1/8, 1/4, 1/2, 2, 4, 8) should be used for layers in analyses. (See the section on <u>Snap</u> <u>Raster</u> for more details.)

### Space requirements

Using a larger cell size means that fewer cells are required to cover the project area. Fewer cells correspond to less space required on the hard drive for each analysis. For example: Halving the cell size used for a data set may increase the disk space required to house it by up to 4 times (depending on storage type).

### **Processing time**

Since using smaller cell sizes requires more cells to be used to cover a project area, the cell size directly affects the processing time required for each analysis. More cells mean longer processing time. A decrease in cell size can cause a dramatic increase in the time that it takes for an analysis to run.

#### Assessing space and time requirements for analyses

While it is very important that the results of analyses are as precise as possible, determining the cell size to be used for an analysis will likely be dependent to some degree on the speed of the processor and the space available on the computer to be used for running analyses, as well as on the cell size used for snap raster. The objective in selecting a cell size is to, then, balance the need for precision against the practical factors of disk space and processing speed.

There are different methods for determining the "best" cell size to be used for a particular analysis, described below. It should be recognized, however, that because of the great variability in input data - both element distributions as well as land use and policy layers - used to develop rasters, using these methods may, at best, provide only a very rough estimate of the time and space requirements for the analysis using a particular cell size.

#### Conservation Value Analyses:

- 1. Determine the smallest feature in the distribution layers for elements to be included in the analysis that needs to be represented in the raster developed for the analysis. This will help to ensure that all the input data is represented in the resulting rasters.
- 2. Divide the area of that feature by 4, or its length by 2 if it is an arc.
- 3. Adjust this value slightly as needed for snap raster. This will be the cell size to be evaluated.
- 4. Develop an <u>Element Conservation Value</u> (ECV) layer for a representative element using this cell size and take note of the time required to finish processing.
- 5. Browse to the resulting layer on the computer hard drive and take note of its size.
- 6. Inspect the resulting layer to insure that occurrences were not "lost."

This method will provide a baseline cell size for the analysis. If the decision is made to use this cell size for the Element Conservation Value rasters to be included in a <u>Conservation Value Summary</u> (CVS), a rough calculation of the space and time required for developing the layers can be calculated as follows:

# of elements \* baseline processing time

or

*#* of elements \* baseline size of resulting raster

If the estimated time and/or space requirements for the analysis are impractical, increase the cell size and re-evaluate. The cell size that strikes an appropriate balance between precision and processing requirements is the size appropriate for use in the analysis. Note that unless specifically set, a Conservation Value Summary will utilize the minimum cell size of the raster Element Conservation Value layers that are used as input. This size should only be changed if there are problems with disk space and/or processing time. In cases when the cell size is changed, it should be changed consistently for all Conservation Value Summaries that cover the same area.

#### Scenario Evaluations:

- 1. Determine the smallest feature in the distribution layers for elements to be included in the analysis, and the smallest planning unit on which decisions will be based (e.g., parcel), and then use the smaller of these two features. This will help to ensure that all the input data is represented in the resulting rasters.
- 2. Divide the area of that feature by 4, or its length by 2 if it is an arc.
- 3. Adjust this value slightly as needed for snap raster. This will be the cell size to be evaluated.
- 4. <u>Define a scenario</u> (land use and/or policy depending on the scenario evaluation to be performed) using this cell size and take note of the time required to finish processing.
- 5. Then <u>evaluate the scenario</u> using a single element, again taking note of the time required to finish processing.
- 6. Browse to the resulting layers on the computer hard drive and take note of their sizes individually.

This method will provide a baseline cell size for the analysis. If the decision is made to use this cell size for defining and evaluating scenarios, a rough calculation of the space and time required for each part of the analysis can be computed as follows:

### Defining scenarios:

# of scenarios to be defined \* baseline processing time for import process

or

# of scenarios to be defined \* baseline size of resulting raster(s)

#### Evaluating scenarios:

# of elements \* baseline processing time for evaluation \* # of scenarios evaluated (considering different goal sets)

or

# of elements \* baseline size of resulting raster(s) \* # of scenarios evaluated (considering different goal sets) The total estimated space and processing time for scenario evaluation analyses might then be calculated by summing the values for the separate scenario processes of defining and evaluating scenarios. Note that it may be complicated to determine accurate totals for scenario evaluations due to the fact that different numbers of elements can be evaluated with the same or different scenarios, using the same or different goal sets.

If the estimated time and/or space requirements for the analysis are impractical, increase the cell size and re-evaluate. The cell size that strikes an appropriate balance between precision and processing requirements is the size appropriate for use in the analysis.

It should be recognized that there can be great variability in the input data - both element distributions as well as land use and policy layers - used to develop rasters, and so using either of the above methods may, at best, provide only a very rough estimate of the processing time and space requirements for an analysis using a particular cell size.

# **SNAP RASTER**

Internally, all analyses in NatureServe Vista utilize layers in raster format. The information a user can designate for element distributions or scenario inputs, however, can be either in raster or vector format. (For information on raster and vector data, see the Environmental Systems Research Institute (ESRI) help files.) Vista converts all vector data layers received into raster layers before processing them during an analysis. This conversion can lead to the introduction of positional error. To minimize this error, Vista utilizes the snap raster functionality in ESRI's ArcView application.

It is important to tie the differing layers in space as closely as possible so that relative spatial relationships can be maintained throughout analyses and results will be reliable. To accomplish this, each imported layer is "snapped" to the raster layer designated in the **Snap Raster** field of the <u>Project properties window</u>. When a snap raster is utilized, the extents of an imported layer are essentially rounded off so that a corner falls exactly on a cell boundary of the snap raster, specifically the closest intersection of four cells in the snap raster, as illustrated below.



Layers associated without snap raster.



Layers aligned usin snap raster.

While a snap raster improves the correspondence between different data layers, the results of analyses become even more reliable the closer the cell size designated for imported layers is to that of the snap raster. The best way to insure alignment of spatial data for analyses is to use the same cell size as the snap raster, or an even subdivision of that size (a power of 2, i.e., 1/8, 1/4, 1/2, 2, 4, 8) for imported layers, as illustrated below.



If the snap raster and analysis cell sizes are the same, the layers will line up exactly even if the original extent of the data layer did not.

When selecting a snap raster, make sure that the cell size is appropriate for the project.

# METADATA

Metadata is data about data. More specifically, metadata provides a user of the data with information on all of the important characteristics of the data set (e.g., when it was created, what its limitations are, what attributes are stored in the data, etc).

The metadata created by Vista conforms to the metadata standards developed by the Federal Geographic Data Committee (FGDC), referred to as the FGDC Content Standard for Digital Geospatial Metadata (CSDGM). The CSDGM standard has been adopted by all federal agencies, and is quickly becoming the most widely-used and accepted metadata standard in the United States. (Additional information on the FGDC can be found at <u>http://www.fqdc.gov</u>.)

The metadata for derived layers in Vista are stored with the data set they describe. Since all the derived layers are in raster format, the files are found within the raster's directory and are named "metadata.xml." The format of these files is extensible markup language (xml), so they can be read by any xml reader software. One such reader is included in the Environmental Systems Research Institute (ESRI) ArcCatalog software.

To display metadata associated with a Vista data set in an easily readable form:

1. Open ArcCatalog (AC) from the Tools menu or using the 🔊 ArcCatalog button.



- 2. Navigate to the raster data set through the directory hierarchy in the left portion of the AC window, and double-click to select the data set.
- 3. In the right hand section of the window, choose the metadata tab.

ArcCatalog - ArcView					
Eile Edit View Go Iools Window Help					
1 8 8 4 8 × 1 1	🌐 部 🔒 🚳 🖬 😽 🖉 🍳 🧶 🖑 🐠 😰 😹				
Location: Catalog	<b>_</b>				
Stylesheet: FGDC ESRI 💌	Stylesheet: FGDCESRI 💽 🚽 🖆 🍟				
FGDC FGDC Classic	ontents Preview Metadata				
GLC ESH GLC FGDC FAQ FGDC Geography Network ISO ISO Geography Network Market Science Shares Science Shares Science Scienc	Conservation Value Summary - Rare Animals Raster Dataset - ESRI GRID				
plantrichn1     rare_animals	Description Spatial Attributes				
	Keywords Theme: raster, area, animal, conservation value, population, rare, threatened, imperiled Place: United States, U.S. Counties, Counties Temporal: 1999, 1990, 2000, 1987, 1989 Description Abstract "Conservation Value Summary - Rare Animals" represents the areas within the county that contain locations of rare animals, based on NatureServe global conservation status				
Choose the stylecheet you want to you to y	iou metateta				

4. Select the desired format for viewing the metadata from the **Stylesheet:** drop-down list.

Different metadata can be viewed for the data set by selecting the **Description**, **Spatial**, and **Attributes** labels displayed in the right portion of the AC window.

# **PROJECT MANAGEMENT FUNCTIONS**

# **DETACH / ATTACH A VISTA PROJECT**

When a Vista project is created, it is associated with an ArcView map document. Whenever this map document is opened, the Vista project will be loaded. However, a map document can be either detached from or re-attached to a Vista project, as described below:

## Detach a Vista project

To detach a Vista project from its associated map document, select **Project Detach...** from the NatureServe Vista menu. Detaching the project will cause the map document to become a regular map document ( i.e., opening the map document will not cause a Vista project to load).

Save Ma	np Document 🔣
?	This action will save the current map document (including changes made to the NatureServe Vista database). Do you want to continue?

Click **Yes** in the Save Map Document window to finalize the detach process.

## Attach a Vista project

To re-attach a map document to a Vista project, select **Project •Attach...** from the NatureServe Vista menu.

Save Ma	ap Document	
?	This action will save the current map document. Do you war	nt to continue?
	Yes No	

Click **Yes** in the Save Map Document window to continue the attach process.

A window will open for browsing to the Vista project database; typically the window will open to the appropriate folder for the Vista project. In some cases, however, the application may be unable to find the Vista project database that

was associated with the map document; this typically results when the individual Vista project database or map document has been moved. However, if an entire directory containing both the map document and the project database is moved, then the application should be able to find the Vista project.

Please pick a V	ista database	to attach to this docum	ient.		? 🛛
Look in:	Vista_DCSr	nall	•	🗢 🔁 💣 📰 •	
My Recent Documents Desktop	Backup GIS_Dataset Logs Templates DCSmall.mdt	s ntory.mdb			
My Documents					
My Computer					
	File name:	DCSmall mdb		-	Open
Places	Files of type:	MS Access(*.mdb)			Cancel

Navigate to the Vista project database, select the appropriate database file, and click **Open**. Once the correct Vista project database has been opened, it will be attached to the map document automatically.

# **BACKUP AND RESTORE A VISTA PROJECT**

## **Backup a Vista project**

Every time a Vista project is opened or created, backup copies of the database are created automatically as two Microsoft Access files: Projectname.mdb and ProjectnameInventory.mdb. These files are stored in the Vista project location in the **VistaDatabaseHistory** folder within a **Backup** folder. When a new set of backup files are created, those in the VistaDatabaseHistory folder are replaced by the more current backup files, and those that were in that folder are moved to the VistaDatabaseHistory1, while those in the VistaDatabaseHistory1 folder are moved to the VistaDatabaseHistory2 folder. This process, then, automatically stores the last three backups of the database.



The actual replacement of backup database files with more current edited versions only occurs when the ArcMap document for the Vista project is saved (that is, **Yes** is selected in the Save Vista Project window). However, if ArcMap is exited without saving the revised project data, or if **No** is selected in the Save Vista Project window, then any changes made after the last ArcMap save will be rolled back. A Vista project will also roll back to the most recent backup database if ArcMap crashes for any reason.

## **Restore a Vista project**

The backup databases for Vista projects described above can be used in worst case scenarios, such as when the current Vista database becomes corrupted or is accidentally deleted. In such cases, the database files in VistaDatabaseHistory folder can be copied to the Vista project location to replace the missing or corrupted database.

# **SUMMARY LIST OF VISTA WINDOWS**

# **CAPTURE SOLUTION RESULTS WINDOW**

The **Capture Solution Results** window is displayed by selecting **Capture Conservation Solution...** from the NatureServe Vista menu. This window is used to load results generated by external conservation solution software, specifically <u>MARXAN</u> and <u>SPOT</u> (the Spatial Portfolio Optimization Tool). These applications evaluate different units of land according to criteria to determine which sets, when combined into larger units (e.g., portfolios or reserve systems) result in optimal conservation solutions in terms of several factors, including cost and representation of conservation targets. The results used in Vista can consist of separate runs identifying analysis units that were selected for the solution, or can be a summed solution that indicates, for each unit, the number of runs in which it was selected. In capturing results generated by an external software, Vista produces a shape file that can be used to more easily visualize the results, as well as to define new <u>Vista scenarios</u>, which can then be utilized in <u>Scenario Evaluations</u>.

For more detailed information on the MARXAN and SPOT applications, see <a href="http://www.ecology.uq.edu.au/marxan.htm">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.conserveonline.org/workspaces/spot</a>, respectively.

### Capture solution results:

- 1. Specify the location of the solution results generated from the external application in the **Solution Result Location** field, or click the **Browse** button to navigate to the location and select it.
- Specify the location to be used for shape file that will result from conversion of the generated solution in the **Solution shape file** field, or click the **Browse** button to navigate to the location. Enter a file name, and click **Save**.

Capture Solution Results		
NatureServe Vista will convert the results of a solution generation that was run into a shape file describing land uses and policy types for the area that was included in the run. This shape file can then be used to define a Vista scenario, which can be utilized in a Scenario Evaluation.		OK Cancel
Solution Result Location		Help
Caluian alaga (la	Browse	
Solution snape nie		
	Browse	

3. Click **OK** to convert the conservation solution results into a shape file.

# **CATEGORY SYSTEM LIST WINDOW**

The **Category System List** window is displayed by selecting **Lists Category System List...** from the NatureServe Vista menu. This window lists all the category systems that have been created for the project. See the <u>Category</u> <u>Systems</u> section for more detailed information on the development and use of category systems in analyses.

Name	Description	Order	1
G-Rank	Heritage Ranking System for GI	1	New
US ESA	United States Endangered Spe	2	Properties
California legal s	California Endangered Species	3	
COSEWIC	Canadian Species Protection S	4	Delete
Scientific Taxono	Heritage Scientific Taxonomic S	5	-
CITES	Convention on International Tra	6	
IUCN	International Union for the Cons	7	Report
Element Type	Type of element (animal, plant,	8	Display Order
			Help
			Close

### **Button functions:**

- **New...** displays a new <u>Category System Properties window</u> that can be used to develop a new category system to be used in the project.
- **Properties...** displays the Category System Properties window showing details and allowing edits to the category system selected in the list.
- Delete... deletes the category system selected in the list.
  - A **Confirm Delete** window is displayed before the deletion is implemented.

A **Cannot Delete** window is displayed in cases when the category system is referenced by another item used in project analyses, as shown in the following example.

Cannot Delete 🛛 🔀
The category system, "G-Rank", cannot be deleted because it is referenced by the following item(s): Filter ("Globally Imperiled", "Rare or Federally Listed", "Rare, Federally Listed, or State Protected",) OK

- **Report...** displays a report for the selected category system that lists the categories within that system. See the <u>Reports</u> section for more details on Category System reports.
- **Display Order...** results in a Display Order window, which can be used to edit the order that the category systems are listed in the Category System List window. Category systems are moved up or down in the order using the appropriate arrow button.

Category Systems		
G-Rank US ESA California legal status COSEWIC Scientific Taxonomy CITES IUCN Element Type	8	1 1
or l	Coursel	1

**Help** opens the on-line documentation. **Close** closes the window.

# <u>Columns displayed</u>:

**Name -** name of the category system.

**Description -** description of the category system, if any.

**Order -** number indicating the display order sequence assigned to the category system.

# **CATEGORY SYSTEM PROPERTIES WINDOW**

The **Category System Properties - <New>** window is displayed by clicking the **New...** button on the <u>Category System List window</u>. The new properties window is used to create a category system for use in the project. See the <u>Category</u> <u>Systems</u> section for more detailed information on the use of category systems in developing <u>filters</u>, <u>goal sets</u>, and <u>weighting systems</u>.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

Category Syste	m Properties - «New»	
Name	Restricted	ОК
Description		Cancel
LIDI		Help
Default Category	Default Code Order:	
🔲 Categories ha	ve codes 🔲 Defines weighting 🔲 Defines conservation goals	Display Order
Categories		
Name	Description	Order
▶		$\diamond$

### Create a category system:

- Specify a name for the new category system in the Name field. The <New> on the window title will change to the name of the new category system as the entry is typed in.
- 2. If the ability to edit the category system should be limited to members of the data development team, place a check in the **Restricted** checkbox.
- 3. Enter a brief description of the category system in the **Description** field, if desired.

- 4. Enter a web address in the **URL** (Uniform Resource Locator) field. The button can be used to open an explorer window that goes directly to the URL entered in the field, or if there is no address specified, the explorer default window will open.
- 5. Enter the category to be used as the default for elements not explicitly categorized in this system in the **Default Category** field. For example, if an element does not have an assigned global NatureServe conservation status, in the category system G-Rank that element would have an assigned category of Unknown (which would be the value entered in this Default Category field for the G-Rank category system). Most category systems utilize "Unknown" or "Unranked" as the default category.
- 6. If codes will be assigned to categories in this category system, place a check in the **Categories have codes** checkbox. Checking this item will result in the addition of a Code column to the Categories table, shown in the window below. Note that this box can be checked at any time if it is later determined that codes should be assigned for categories in the category system.
- 7. If codes are to be assigned for categories within the system (indicated using the checkbox described in item 6 above), then enter a code in the **Default Code** field to be used for elements not explicitly categorized in this system. The default code indicated in this field is based on the entry in the Default Category field (described in <u>step 5</u> above). For example, if the default category is "Unknown", the default code entered could be "UK", as shown below.
- 8. If the category system will be used to define a weighting scheme, place a check in the **Defines weighting** checkbox. (See the <u>Weighting Systems</u> section for detailed information on weighting.) Checking this item will result in the addition of a Weighting column to the Categories table in the lower half of the window. However, this will not automatically cause weights to be added to elements during the process of creating a <u>Conservation Value Summary</u>, but will aid in the creation of weighting schemes later. Note that this box can be checked at any time if it is later determined that the category system will be used to define a weighting scheme.
- 9. If the category system will be used to define conservation goals, place a check in the **Conservation goals** checkbox. (See the <u>Goal Sets</u> section for detailed information on goals.) Checking this item will result in the addition of a Goal column to the Categories table in the lower half of the window. However, this will not automatically cause goals to be added to elements during the process of creating scenarios for use in <u>Scenario Evaluations</u>, but will aid in the creation of goal sets later. Note that this box can be checked at any time if it is later determined that the category system will be used to define conservation goals.
- 10.Using the Categories table in the lower half of the window, enter the name of each category in the new category system, along with a brief description, if desired. In addition, entries should be made as appropriate

in any columns added for defining codes, goals, and/or weightings associated with each category. Note that if a value for code is not assigned for a particular category, Vista will use the default code specified in <u>step 7</u> above. The value in the Order column of the Categories table is automatically generated as each new category is entered.

11.If it is necessary to delete a category, move the cursor to the column to the left of the Name column in the Categories table and click next to the entry to be deleted; the entire line for the category should be highlighted. Click the **Delete** button on your keyboard to delete the category. A **Cannot Delete** window is displayed in cases when the category is referenced by another item used in project analyses, as shown in the following example.

Cannot Delete	
The category system, "California legal status", because it is referenced by the following item(s Filter ("Rare, Federally Listed, or State Protec OK	cannot be deleted ;): :ted")

- 12.If the order that the different categories within the category system are listed needs to be changed, use the **Display Order...** button to invoke the Display Order window. Although an order column is shown in the Categories table on the Category System Properties window, changes to the order of listed categories can only be made using the Display Order window. Categories are moved up or down in the order using the appropriate arrow button.
- 13. The value displayed for Order (located to the right of the Default Code field) indicates the position of the default code in the list of categories for the system. For example, if the category system is G-Rank, the default category is "Unknown," and the display order for categories was set by the user to be G1, G2, Unknown, G3, G4, then the value would be "Order: 3" indicating that the default category and code are in the third position in the display order. If there is no order specified for the default category, then the value for Order is automatically set to the last position in the category sequence.

G-Rank US ESA	t
California legal status CDSEWIC Scientific Taxonomy CITES IUCN Element Type	<u> </u>
OK Canad	

- 14.To close the window and save the data entered for the category system click **OK**; otherwise, click **Cancel**.
- 15.To review details on the new (saved) category system, select the system on the <u>Category System List window</u> and click the **Report** button. Settings for the category system, as well as goals and/or weights assigned to specific categories will be displayed. See the <u>Reports</u> section for more details on Category System reports.

### Edit a category system:

- 1. Select the category system from the list on the **Category System List** window (e.g., Element Type) and click the **Properties...** button. The resulting properties window displays data for each category in the category system.
- 2. Data for the existing category system displayed in this window can be edited using the processes described above for creating a new category system as guidelines.
- 3. To close the window and save any changes made to the category system click **OK**; otherwise, click **Cancel**.

# **COMPATIBILITY LIST WINDOW**

The **Compatibility List** window is displayed by clicking the **Responses...** button on the Compatibility tab of the <u>Element Properties window</u>, and is used to create and edit the set of Land Use Intent (LUI) compatibility responses used for <u>Scenario Evaluations</u>. For more details on compatibility, see the <u>Land Use and</u> <u>Conservation Scenario Evaluations</u> section.

😴 Compatibility List		
Name	Compatibility Value	
negative		New
neutral	2	Properties
positive	3	
		Delete
		Up
		Down
		Help
		Close

#### **Button functions:**

- **New...** displays an <u>Edit Compatibility Response window</u> that can be used to develop a new compatibility response to be used in the project analyses.
- **Properties...** displays the <u>Edit Compatibility Response window</u> showing details of existing compatibility responses and allowing edits to the response selected in the list.

**Delete** deletes the compatibility response selected in the list.

A window is displayed in cases when the compatibility response is assigned to one or more LUI categories in the <u>Element Properties window</u> and cannot be removed.

This response i	s in use in the element edit	form.

- **Up** Moves the selected compatibility response higher in the list of responses, and changes the associated sequential number accordingly. The resulting order of responses is displayed on the Compatibility tab of the <u>Element Properties</u> <u>window</u>.
- **Down** Moves the selected compatibility response lower in the list of responses, and changes the associated sequential number accordingly. The resulting order of responses is displayed on the Compatibility tab of the <u>Element</u> <u>Properties window</u>.

**Help** opens the on-line documentation.

**Close** closes the window.

## Columns displayed:

Name - name of the compatibility response.

**Compatibility Value -** sequential number associated with a particular compatibility response.

# **CONDITION SYSTEM LIST WINDOW**

The **Condition System List** window is displayed by selecting **Lists Condition Systems List** from the NatureServe Vista menu. This window lists all the condition models that have been created in the project. See the <u>Landscape</u> <u>Condition Models</u> section for more detailed information on condition models.

🚭 Condition System List		
Name	Description	New
		Properties
		Delete
		Help
		Close

## **Button functions:**

- **New...** displays a new <u>Edit Condition System</u> window that can be used to create a condition model.
- **Properties...** displays the Edit Condition System window showing details and allowing edits to the condition model selected in the list.

**Delete** deletes the condition model selected in the list.

**Help** opens the on-line documentation.

**Close** closes the window.

### Columns displayed:

**Name -** name of the condition model.

**Description -** description of the condition model, if any.

# **CONFIRM PROCESSING WINDOW**

Message displayed by Vista when the layer used to represent an element's distribution, specified on the <u>Spatial tab</u> of the <u>Element Properties window</u>, has been changed such that the <u>Element Conservation Value</u> (ECV) layer needs to be recalculated using the new layer.

Confirm Processing	
The inputs have changed so that the element conservation value layer	must be recalculated.
Click 'OK' to being processing now, click 'Delay' to delay processing, or processing.	click 'Cancel' to cancel
OK Delay C	ancel Help

### **Button functions:**

**OK** causes the recalculation process for the ECV layer to begin.

Delay defers the recalculation process to a later time.

**Cancel** closes the window without retaining any changes.

**Help** opens the on-line documentation.

# **CONSERVATION VALUE SUMMARY WINDOW**

The **Conservation Value Summary - <New>** window is displayed by selecting **Summarize Conservation Value...** from the NatureServe Vista menu. This window is used to create <u>Conservation Value Summaries</u>, which indicate the conservation value of specific locations in the planning region based on attributes of elements and/or their occurrences. For more detailed information on the use of weightings, and the viability/integrity and confidence attributes in creating a Conservation Value Summary and their influence on the results, see the <u>Different Types of Conservation Value Summaries</u> section.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

nservatio	n Value Summary - <new></new>	
Name	Restricted	OK
Description		Cancel
	Input Options Filter Species at Risk Weighting Rarity Incorporate element viability/integrity Incorporate distribution confidence	Preview Elements
	Function • Sum     Average       Output Options       Cell size • Minimum based on input layers	
	Sq. meters      Perform site-level analysis (for Site Explorer)      Site Layer <     None>      Perform site-level analysis (for Site Explorer)      Site Layer <     None>      Perform site-level analysis (for Site Explorer)	

### Create a Conservation Value Summary:

- Enter a name for the Conservation Value Summary (CVS) being created in the Name field. The <New> on the window title will change to the name of the new CVS as the entry is typed in.
- 2. Enter a brief description for the new CVS in the **Description** field.
- 3. If the ability to edit the CVS should be limited to members of the data development team, place a check in the **Restricted** checkbox.
- 4. Select the <u>filter</u> to be applied to the data set from the drop-down menu of the **Filter** field located in the *Input Options* group box, or select the **<Add New...>** value to create a new filter, or the **<Show List...>** value to display all existing filters (in order to select and modify an existing filter).
- 5. Select the <u>weighting system</u>(s) to be applied to the data set from the dropdown menu of the **Weighting** field located in the *Input Options* group box, or select the **<Add New...>** value to create a new weighting system, or the **<Show List...>** value to display all existing weighting systems (in order to select and modify an existing system).
- 6. Click the **Preview Elements...** button to see a <u>Filtered Weighting System</u> <u>Report</u> showing the set of elements to be included in the summary and the weightings that have been set for these elements, based on the values selected in the **Filter** and **Weighting** fields. This knowledge can be helpful prior to running the CVS. The greater the number of elements included in a

summary, the longer it will take to process; adjusting/creating a filter that will limit the CVS to just those elements that are needed will ensure the most efficient use of processing time.

- 7. If <u>element viability/integrity</u> values are to be included in the new CVS, place a check in the **Incorporate element viability/integrity** checkbox.
- 8. If <u>confidence</u> is to be included in the new CVS, place a check in the **Incorporate distribution confidence** checkbox. The confidence attribute can be useful in determining if sufficient information exists to make conservation decisions for a particular location.
- Indicate the function to be used in determining values for grid cells in the CVS by selecting either the **Sum** or **Average** radio button. Note that if confidence is to be incorporated in the CVS and the operation selected is **Average**, richness will not be calculated in the CVS.
- 10. Select the appropriate radio button to indicate whether the grid cell size in the CVS output is to be the **Minimum based on input layers**, or if the size is to be a specified area; if the latter, the system will automatically display the default cell set for the project in the <u>Project Properties window</u>. If an alternate cell size is desired, enter the area to be used for a grid cell. For more detailed information on cell sizes, see the <u>Determining Grid Cell Size</u> topic.
- 11.If the CVS will be used in <u>Site Analyses</u>, place a check in the **Perform site-level analysis (for Site Explorer)** checkbox.
- 12. If appropriate, specify a layer to be used in Site Analyses from the drop-

down menu of the **Site Layer** field, or by using the ArcCatalog button to browse to the layer. The land units in the layer selected will be used for detailed examination of conservation value by unit, and the contributing biodiversity elements present in those units.

- 13.Select a map context to be used in creating the CVS report from the **Map Context** drop-down menu, or select the **<Add New...>** value to create a new map context, or the **<Show List...>** value to display all existing map contexts (in order to select and modify an existing context).
- 14.Generate the CVS by clicking **OK**; otherwise press **Cancel**. Results are displayed in a CVS report. See the <u>Conservation Value Summary Report</u> for more detailed information.

### Edit a Conservation Value Summary:

- Select the CVS from the NatureServe Vista Table of Contents (TOC), rightclick, and choose Conservation Value Summary Properties... from the context window. The resulting window displays the CVS.
- 2. Edit the CVS using the processes described above for creating a new Conservation Value Summary as guidelines.
- 3. Generate the revised CVS by clicking **OK**; otherwise click **Cancel**.

# **CONSERVATION VALUE SUMMARY LIST**

The **Conservation Value Summary List** window is displayed by selecting **Lists Conservation Value Summary List...** from the NatureServe Vista menu. This window lists all the Conservation Value Summaries (CVS) that have been created for the project. See the <u>Conservation Value Analyses</u> section for more detailed information on this analysis.

escription	New Properties
	Properties
	Properties
	Delete
ea of low average confidence d	
	Report
	Help

## **Button functions:**

- **New...** displays a new <u>Conservation Value Summary window</u> that can be used to develop a new CVS for the project.
- **Properties...** displays the Summarize Conservation Value window showing details and allowing edits to the CVS selected in the list.

Delete deletes the CVS selected in the list.

A **Confirm Delete** window is displayed before the deletion is implemented.

delete the conse	rvation value summary,	"Element Richness"?
Yes	No	
	delete the conse	) delete the conservation value summary,

**Report** displays a report for the selected CVS that lists the settings for the summary as well as details on the individual elements that were included. See the <u>Reports</u> section for more details on Conservation Value Summary reports.

**Refresh...** displays the <u>Refresh Selected Results</u> window that can be used to refresh the data for selected CVS analyses.

Help opens the on-line documentation.

**Close** closes the window.

# **DATA SOURCE PROBLEMS WINDOW**

The **Data Source Problems** window may appear when a project is opened. It indicates that there is an issue with Vista accessing one of the data layers it needs. This may be a result of files being moved on the server on which the data is held, a network problem, a deletion of data, or a possible change in drive lettering. In order for Vista to proceed without errors, the application must be redirected to find the files in question.

Name	Туре	
Northwestern Pond Turtle Rarity Weighted - with confidence Rarity Weighted - with confidence Riparian-Serpentine Value Riparian-Serpentine Value Rarity evaluation	Element:Con Conservation Conservation Conservation Scenario Eva	C:\- · Work Files\VISTA\SampleData\Sample_D C:\- · Work Files\VISTA\SampleData\Sample_D C:\work files\vista\sampledata\scenario layers\p. C:\- · Work Files\VISTA\SampleData\Sample_D C:\work files\vista\sampledata\scenario layers\p. C:\work files\vista\sampledata\sampledata_small.

### To fix a data source problem:

- 1. Select the name of a layer to be fixed from the list in the window. If the problem has been corrected and the application can access the file without any changes to the database (e.g., fixing a drive letter on the server), then clicking the **Reconnect to Same Source** button will allow another attempt by Vista to access the file in question.
  - If the file is found, a Repaired Datasources window will be displayed; click **OK** to close.

- However, if the file still cannot be found, an Unrepaired Datasources window will be displayed. If this happens, click **OK** to close the window and continue with step 2.
- A change must be made in the database to allow Vista to locate the file (e.g., the file has been moved to another location on the server). Click the Set New Data Source... button to open up the Select Data Input window. Browse to the desired file, select, and click Add.

Select Data Input	
Look in: 🖾 Base	- <u>•</u> •
<ul> <li>Distributions</li> <li>10mibuff.shp</li> <li>ag_land.shp</li> <li>buffer_hydroline_all.shp</li> <li>clip_hill1</li> <li>Developed_Land.shp</li> <li>ExistingProtected.shp</li> <li>hydropoly.shp</li> <li>napa_c.shp</li> </ul>	<ul> <li>napa_hill</li> <li>parcels_sample_data.shp</li> <li>Proposed_wilderness.shp</li> <li>roads.shp</li> <li>slope_50_or_more.shp</li> <li>terr_li</li> <li>viewable2_dissolve.shp</li> <li>zoning_def.shp</li> </ul>
Name: Show of type: Data	Add Cancel

- If the new data source can be substituted for the old one, the information will be saved to the database and layer will disappear from the list in the Data Source Problem window. To resolve a datasource issue for another file, select the file and click the Set New Data Source... button again to continue.
- If the new data source cannot be substituted for the old one, an informational error message will appear to diagnose the problem. To resolve a datasource issue for another file, click the **Close** button on the Error window. Then press the **Set New Data Source...** button again.
- 3. To close the Data Source Problems window, click the **X** in the upper right corner of the window.

### To fix a data source problem after the project has opened completely:

1. Select the layer to be fixed in the Vista Table of Contents (TOC) and rightclick. A context menu will be displayed and if there is a data source problem, the **Repair Spatial Data...** option in the menu will be enabled. 2. Select the **Repair Spatial Data...** option to display the Data Source Problems window. Use the steps described above to fix the data source problem.

# DELETE LAYER?

Message displayed by Vista when the layer used to represent an element's distribution, specified on the <u>Spatial tab</u> of the <u>Element Properties window</u>, has been changed to one that is invalid for use in calculating an <u>Element</u> <u>Conservation Value</u> layer.

Delete Layer?		×
The inputs to computing conservation the conservation value layer is no long Would you like to delete this layer's da	value for this element have changed such th er valid and will not be used in analyses. asource and remove it from the map docum	iat ient?
ОК	Cancel	

## **Button functions:**

- **OK** &endash; deletes the distribution layer associated with the element and remove it from the map document.
- **Cancel** & endash; closes the window without retaining any changes.

# **DOCUMENTATION WINDOW**

The Documentation window is displayed by clicking the  $\bigotimes$  button located next to a data field in a window. Note that the title of the window includes the name of the associated field.

Entries in the Documentation window can be optionally included in various reports (see the topic <u>How to Include Associated Documentation in Reports</u>).

Documentation : Default Goal	
Wednesday, January 05, 2005 3:38 PM Author Jane Wildebeest	OK Cancel Help
	Save Entry
Date/Time Author Text	Add Entry

Documentation is entered in the upper portion of the window. As information is added to the grid in the lower half of the window, the system automatically populates the Date/Time and Author columns. In this way, documentation can be added over time as data in the project changes.

## **Button functions:**

**OK** saves changes made to the documentation and closes the window.

**Cancel** closes the window without saving any documentation changes. **Help** opens the on-line documentation.

Save Entry saves the documentation entered to a row in the grid below.

**Add Entry** saves the documentation entered to a row in the grid below.

A **Confirm** window is displayed before moving the entry to the grid. **Delete Entry** deletes the selected row in the grid.

A **Confirm** window is displayed before removing the row.

After information has been saved and the window closed, the button image next to the field changes to indicating that related documentation has been recorded.

The Documentation window may be useful for entering descriptive information related to attributes values and decisions made (see examples).

## **EDIT COMPATIBILITY RESPONSE WINDOW**

The **Edit Compatibility Response** window is displayed by clicking the **New...** or **Properties...** buttons on the <u>Compatibility List window</u>, and is used to create and edit Land Use Intent (LUI) compatibility responses used for <u>Scenario Evaluations</u>. For more details on compatibility, see the <u>Land Use and Conservation Scenario</u> <u>Evaluations</u> section.

💽 Edit Compatibility	/ Response	
Compatbility Value:	4	
Name:		
	ОК	Cancel

#### Create a compatibility response:

- 1. When the Edit Compatibility Response window opens to create a new response, the next numeric compatibility value to be associated with a compatibility response is automatically displayed. Enter the label for the new response in the **Name** field.
- To close the window and save the new compatibility response, click OK; otherwise, click Cancel.

### Edit a compatibility response:

- Select the compatibility response to be changed on the <u>Compatibility List</u> <u>window</u> and click the **Properties...** button. The resulting edit window displays the response name and sequential numeric value.
- 2. Edit the label for the response as desired in the Name field.

**Note**: The numeric compatibility value cannot be edited in this window. However, this sequential value will automatically change for a particular compatibility response by changing the order of the responses using the **Up** and **Down** buttons on the <u>Compatibility List window</u>.

3. To close the window and save any changes made to the compatibility response click **OK**; otherwise, click **Cancel**.

# **EDIT CONDITION SYSTEM WINDOW**

The **Edit Condition System** window is displayed by clicking the **New...** or **Properties** buttons on the <u>Condition System List window</u>. This edit window is

used for applying individual condition models to elements. When a new condition system is being created for the first time, Vista will ask you to select or create a default category system. Categories are assigned when creating elements and provide a system whereby elements are grouped and viewed. This can be changed later if you wish to create different condition system lists on another category type; which is defined in the Vista pulldown (<u>Vista -> Project -></u> <u>Preferences -> Default Category System</u>). User may vary the Element display sort.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

😸 Edit Condition Syst	em		
Condition System Name			ок
Description			Cancel
		<u>~</u>	Help
Element		Condition Model	
⊡∽ High			^
- Important Agricultur	e		
Bald Eagle			=
En Medium			=
HISTORIC Sites			
Viewsheds			
⊡- Not Rated			
- California Annual G	rasslands Alliance		
California Coast Ranges Cliff and Canyon			
— California Freshwat	er Shrimp		
— California Mesic Ch	aparral		
— Central Valley Mixed	l Oak Savanna		_
🦳 🖳 Central Valley Ripa	ian Woodland and Shrubland		~

Create or modify a condition model by clicking the blank area in the condition model to the right of an element. The user options are to select an existing condition model, new Distance Intensity, new Value Range Factor, and edit an existing model, or delete a model.

😸 Edit Condition System				
Condition System Name	phos2		ок	
Description		_ ⊘	Cancel	
		<b>V</b>	Help	
Element		Condition Model		
🚊 Not Rated			^	
- California Annual Grasslands Alliance				
- California Coast Ranges Cliff and Canyon				
California Freshwater Shrimp				
California Mesic Chaparral		phos2	-	
<ul> <li>Central Valley Mixed Oak Savanna (None)</li> </ul>				
<ul> <li>Central Valley Riparian Woodland and Shrubland</li> </ul>		(New Distance Intens	sity)	
Coastal Closed-cone Conifer Forest and Woodland (New Value Range Factor)			actor)	
Eucalyptus Alliance (E dit phos2)				
<ul> <li>Lower Montane Pir</li> </ul>	(Delete phos2)			
Mediterranean California Foothill and Lower Montane Riparian Woc				
Mediterranean California Mixed Oak Woodland				
Mediterranean California Serpentine Foothill and Lower Montane R				
<ul> <li>Mesic Serpentine Grassland</li> </ul>				
Mesic Serpentine Woodland and Chapparal				

See <u>Using the Condition Systems window</u> for instructions on data entry for this window.

# EDIT LAND-USE INTENT WINDOW

The **Edit Land-use Intent** window is displayed by selecting **Lists**  $\blacktriangleright$  **Land Uses List...** from the NatureServe Vista menu. This window displays the default Vista land use intent (LUI) categories (described in <u>Appendix F</u>), which are utilized in land use and conservation <u>Scenario Evaluations</u>.

This window is used to customize the LUI categories in order to better capture the important conservation impacts of specific land uses and/or management practices in the planning region. LUI categories are used specifically in assigning land use compatibility for elements (described under the <u>Compatibility tab</u> section of the <u>Element Properties window</u>), and for developing translators that are used to define land use scenarios (described in the <u>Translators</u> section, with details on creating translators found in the <u>Translator Properties window</u> topic).



## **Button functions:**

**OK** saves changes made to the LUI categories and closes the window.

**Cancel** closes the window without saving any changes made to the LUI categories.

**Help** opens the on-line documentation.

**Add Peer** adds a new LUI category at the same hierarchical level as that of the selected land use. The new category will appear as a new entry at the end of existing LUI categories at that level, and can then be labeled as desired. In the following example, selecting the minor category "Biodiversity conservation" and clicking the **Add Peer** button will result in a new LUI category at the same level, added after those already existing beneath the "Maintain Primarily for Natural Values" major category to which it belongs.



Add Child adds a new LUI category within, or under, the hierarchical level of the selected land use. The new category will appear as a new entry at the end of any existing child categories beneath the selected category, and can then be labeled as desired. In the following example, selecting the LUI category "Unknown specific natural use" and clicking the Add Child button will result in a new child land use category within/under that selected LUI.



Delete deletes the land use category selected in the LUI hierarchy.

A **Confirm Delete** window is displayed before the deletion is implemented. In cases when the LUI selected for deletion contains child (minor) categories, the **Confirm Delete** window informs the user so that inadvertent deletion of these subcategories can be avoided.

A **Cannot Delete** window is displayed in cases when the LUI category is referenced by one or more items, as shown in the following example.

Cannot Delete	
The land use, "Biodiversit because it is referenced l Translator ("GreenInfo l	y conservation", cannot be deleted y the following item(s): and Use", "LU_Biodiversity Conservation") OK

# **EDIT POLICY TYPE WINDOW**

The **Edit Policy Type** window is displayed by selecting **Lists** Policy Type List... from the NatureServe Vista menu. This window displays the default Vista policy type (PT) categories (described in <u>Appendix G</u>), which are utilized in land use and conservation <u>Scenario Evaluations</u>.

This window is used to customize the PTs in order to better capture the important conservation impacts of specific policy mechanisms in the planning region. PTs are used specifically for developing translators that define policy scenarios (described in the <u>Translators</u> section, with details on creating translators found in the <u>Translator Properties window</u> topic).



## **Button functions:**

**OK** saves changes made to the PTs and closes the window.

**Cancel** closes the window without saving any changes made to the PTs.

**Help** opens the on-line documentation.

**Add Peer** adds a new PT at the same hierarchical level as that of the selected type. The new PT will appear as a new entry at the end of existing PTs at that level, and can then be labeled as desired. In the following example, selecting the type "Voluntarily protected" and clicking the **Add Peer** button will result in a new PT at the same level, added after those already existing.
## Summary List of Vista Windows

Edit Policy Type		Edit Policy Type	
Legislatively/Administratively mandated lan     Revocable legislatively/administratively ma     Statutory enforced land use plan     Institutionally managed easement or holding     Resident Managed Easement     Land use restricted by regulation     Land use restricted by temporary incentive     Voluntarily protected     Unrestricted from conversion to higher inter     Unknown	OK Cancel Help	Legislatively/Administratively mandated lan Revocable legislatively/administratively ma Statutory enforced land use plan Institutionally managed easement or holding Resident Managed Easement Land use restricted by regulation Land use restricted by temporary incentive Voluntarily protected Unrestricted from conversion to higher inter Unknown	OK Cancel Help
< >	Add Peer Add Child Delete		Add Peer Add Child Delete

**Add Child** adds a new PT within, or under, the hierarchical level of the selected type. The new PT will appear as a new entry at the end of any existing child types beneath the selected PT, and can then be labeled as desired. In the following example, selecting the PT "Voluntarily protected" and clicking the **Add Child** button will result in a new child PT within/under that selected type.

Edit Policy Type	Edit Policy Type
Legislatively/Administratively mandated lan	Legislatively/Administratively mandated lan Revocable legislatively/administratively ma
Statutory enforced land use plan Institutionally managed easement or holding	Statutory enforced land use plan     Institutionally managed easement or holding     Cancel
Resident Managed Easement Help	Resident Managed Easement     Land use restricted by regulation
<ul> <li>Land use restricted by temporary incentive</li> <li>Voluntarily protected</li> <li>Unrestricted from conversion to higher inter</li> <li>Unknown</li> </ul>	Land use restricted by temporary incentive     Voluntarily protected     Inew Protection Type     Unrestricted from conversion to higher inter     Unknown
Add Peer	Add Peer
Add Child	Add Child
Delete	Delete

**Delete** deletes the PT selected.

A **Confirm Delete** window is displayed before the deletion is implemented. In cases when the PT selected for deletion contains child types, the **Confirm** 

**Delete** window informs the user so that inadvertent deletion of these subtypes can be avoided.

A **Cannot Delete** window is displayed in cases when the PT is referenced by one or more items, as shown in the following example.

Cannot Delete	
The policy type, "Legislatively/Administratively mandated land use", cannot b because it is referenced by the following item(s): Translator ("GreenInfo Protection", "PP_Legislative/Administratively Mandat OK	e deleted ed")

## **EDIT SUB-REGIONAL GOAL SET WINDOW**

The **Edit Sub-Regional Goal Set** window, displayed by clicking the **Sub-goals...** button on the <u>Goal Set List window</u>, is used to create a new set of conservation goals for a defined group of elements in a specific area of interest within the planning region. Goal sets can be utilized in <u>Land Use and Conservation Scenario</u> <u>Evaluations</u> for comparing existing land use statuses and scenarios for future land uses, and tracking conservation progress over time. See the <u>Goal Sets</u> section for more detailed information on the development and use of goals in analyses.

🛃 Edit Sub-Regional Goal Set				
Source Goal Set Name	G-Rank animals	<b>•</b>		ок
Source Filter	< Unfiltered >	•		Cancel
Sub-Regional Layer	<none></none>	•	٨	
Sub-Regional Goal Set Name	1	<u> </u>		Help

### Create a sub-goal set:

 The value in the Source Goal Set Name field will default to the goal set selected in the Goal Set List window, but can be changed using the dropdown menu, which includes the option to use < None >, create a new goal set (<Add New...>), or to open the Goal Set List window displaying all existing goal sets (<Show List...>) in order to select and modify an existing set of goals.

- 2. Choose the filter to be used, if any, to define the new sub-regional goal set by changing the default value of **<Unfiltered>** to the appropriate choice from the **Source Filter** drop-down menu. The setting selected will restrict the elements that will be included in the sub-regional goal set to those permitted by that filter. The menu includes the option to <u>create a new filter</u> (**<Add New...>**), or to open the Filter List window displaying all existing filters (**<Show List...>**) in order to select and <u>modify an existing filter</u>.
- 3. Use the **Sub-Regional Layer** field to indicate the spatial layer to be used to define specific areas within the planning region for use in sub-regional goal sets. Although the default value in the field is **<None>**, a layer is required to create a sub-regional goal set. Select a layer from the drop-

down menu, or by using the Recent ArcCatalog button to browse to the layer. To add additional values to the drop-down menu, add a layer to the table of contents. Note that the layer used must contain more than one polygon feature (e.g., parcels) in order to be used to define a sub-regional goal set.

4. To close the window, saving the sub-regional goal set click **OK** to begin processing; otherwise, click **Cancel**.

Processing	
Translating vector	
Cancel	

## **ELEMENT IMPORT FORM**

The **Element Import Form** is displayed by clicking **Project > Import Element Properties from File...** from the Vista menu. The form is used to import properties from multiple elements using a shapefile containing their attributes.

📰 Element Import Form		
File Selection Select an element data file		2
Select an element file for import into this project		
Shape file:		Browse.
	< Back Next > Cancel	Help

## **Import element properties:**

 Click the **Browse...** button to navigate to a shapefile containing one or more element distributions, select the file, and click **Open**, or alternatively, enter the name of a shapefile directly into the **Shape File** field. Click **Next>**.



2. Edit EO rank to quality/integrity score conversions. Click **Next>**. CAM THIS IS AS FAR AS I GOT

Map input attributes to input types			1
Set the attributes to the appropriate nput type or to ignore to skip them. 20 Rank, Unique Element ID, and	FID		
Primary Name are required.	Shane		
	odc id		
	Tipo	Ignore 💽	
	Descript	Ignore 💌	
	Cond	Ignore 💌	
	Conf	Ignore 💌	
	MinSize	Ignore 💌	
	Primary_Na	Ignore 🗾	
	Altern_Nam	Ignore 🗾	
	GRank	G-Bank	
	Srank	S-Rank	

3. Review the attributes that Vista cannot parse, and designate which to import manually. Click **Next>**.

lement Import Form			
Category Info Category Info			1
303 category assignments resolved.			
0 category system can't be resolved: 21 category can't be resolved. Please check them in th	e following list if you want to import them	ĸ	
GRank: G1G2			
G-Rank G3G4			
G-Rank G3T1			
G-Rank: G3T2			
G-Rank: G47			
G-Bank: G4T2			
G-Rank: G4T3			
G-Rank: G4T3?			
G-Rank: G5?			
G-Rank: G5T1			
G-Rank G5T1Q			
G-Bank G512			
G-Bank: G5T4			
S-Rank: S1S2			
S-Rank: S2S3			
S-Rank: S3?			
1 S-Rank \$3\$4			<u> </u>
J⊡ S-Rank S3S4			
	/ Back	Maria C	anaal Hala

- 4. After the import process, separate element records will be created for each element in the shapefile. A spatial distribution layer must be specified for each element record before the element can be used in any Vista analyses. By opening the <u>Element Properties window</u> for each element, or by using the **Edit Multiple...** button on the <u>Element List window</u>, additional information can be added or edited.
- 5. Once the import process has completed and any related data have been entered, all of the elements must be processed by clicking the **Refresh...** button on the <u>Element List window</u>. See <u>Refresh Selected Results</u> for additional information on refreshing elements in Vista.

## **ELEMENT LIST WINDOW**

The **Element List** window is displayed by selecting either **Lists > Element List...** or **Manage Elements...** from the NatureServe Vista menu. This window lists all of the elements that have been entered into Vista for use in the project. See the <u>Element Selection</u> section for more detailed information on elements to be included in a project.

😔 Element List				
Name	Alternate Name	ECV	•	
Bald Eagle	Haliaeetus leucocephalus			New
California Annual Grasslands Al	California Annual Grasslands Allianc	~		Properties
California Coast Ranges Cliff an	California Coast Ranges Cliff and Ca	~		
California Freshwater Shrimp	Syncaris pacifica			Delete
California Mesic Chaparral	California Mesic Chaparral	~		
Central Valley Mixed Oak Sava	Central Valley Mixed Oak Savanna	~		
Central Valley Riparian Woodla	Central Valley Riparian Woodland an		_	Report
Coastal Closed-cone Conifer Fo	Coastal Closed-cone Conifer Forest	~		Befresh
Eucalyptus Alliance	Eucalyptus Alliance	~		
Historic Sites		~		E dit Multiple
Important Agriculture		~		
Lower Montane Pine - Oak Woo	Lower Montane Pine - Oak Woodlan			· · · · · · · · · · · · · · · · · · ·
Mediterranean California Dry-M	Mediterranean California Dry-Mesic	~		Help
Mediterranean California Foothil	Mediterranean California Foothill and	2		
Mediterranean California Mixed	Mediterranean California Mixed Oak	~		Close
Mediterranean California Serpe	Mediterranean California Serpentine	~	-	

## **Button functions:**

- **New...** displays a new <u>Element Properties</u> window that can be used to add a new element to the project.
- **Properties...** displays the Element Properties window showing details and allowing edits to the element selected in the list.

Delete deletes the element selected in the list.

A **Confirm Delete** window is displayed before the deletion is implemented, which includes information on any analytical tools and/or analyses that reference the element to be deleted, as shown in the following example.

Confirm Delete
The element, "California Freshwater Shrimp", is referenced by the following item(s): Scenario Evaluation ("Species at Risk - baseline", "Species at Risk ") Goal Set ("Rarity") Weighting System ("Rarity")
Are you sure you want to delete it? If you choose to delete, you should refresh any analyses listed here.
Yes No

**Report** displays a report for the selected element that provides data related to the element, including its spatial attributes and distribution, as well as its

inclusion in category systems used in analyses. See the <u>Reports</u> section for more details on Element Details reports.

- **Refresh...** displays the <u>Refresh Selected Results</u> window that can be used to refresh the data for selected elements.
- **Edit Multiple** displays the <u>Multi-Element Property Edit window</u> that can be used to set the value for a selected property across a specified group of elements at the same time.

**Help** opens the on-line documentation.

**Close** closes the window.

## Columns displayed:

- **Name -** name of an element that will be used in Vista input windows; this is typically the common name for the element.
- **Alternate Name -** secondary name of the element, frequently the scientific name for the element.
- **ECV** checkbox that indicates that an <u>Element Conservation Value</u> layer has been created for the element.

## **ELEMENT PROPERTIES WINDOW**

The **Element Properties - <New>** window is displayed by either clicking the **New...** button on the <u>Element List window</u> or choosing **Selection >New Element** from the NatureServe Vista menu while an element is highlighted in the Vista Table of Contents. The new properties window is used to add a new element, along with associated distribution layers and attribute data, to the project for use in analyses.

The Element Properties window consists of four tabs for recording specific types information on elements <u>General</u>, <u>Spatial</u>, <u>Categories</u>, and <u>Compatibility</u>. Depending on the analyses to be performed, different fields may be used, and data input may occur at different times. Specifically, some of the items on the General and Spatial tabs are completed for <u>Conservation Value analyses</u> only, while the Compatibility tab is used strictly for <u>Land Use and Conservation</u> <u>Scenario Evaluations</u>.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

## Add an element:

**GENERAL TAB INPUT** 

General Spatial	Categories Compatibility	1	OK
Name   Alternate Name			Cancel
URL	Restricted	🗭	Help
Description		8	
[	Measured by		
Г	Has a minimum size for viability Min Size acres		
Г	Has a condition threshold     Condition threshold	-	

- Specify a name for the element in the Name field. Typically this will be the common name used for the element. The <New> on the window title will change to the name of the new element as the entry is typed in.
- 2. Specify another name for the element in the **Alternate Name** field. Provided that the previous Name field contains the common name for the element, this field is generally used for its scientific name.
- Enter a web address in the URL (Uniform Resource Locator) field that provides information related to the element (e.g., NatureServe Explorer).

The \_\_\_\_\_ button can be used to open an explorer window that goes directly to the URL entered in the field, or if there is no address specified, the explorer default window will open.

- 4. If the ability to edit the element data should be limited to members of the data development team, place a check in the **Restricted** checkbox.
- 5. Enter a brief description of the element in the Description field, if desired.

**Note**: If records are being created for selected elements before additional data has been obtained/developed, data entry for the remaining fields on this tab, as well as for the <u>Spatial tab</u> and <u>Compatibility tab</u> (if needed), can be deferred until distribution layers have been developed for elements (see the <u>process for</u> <u>developing distribution layers</u>), and any attributes have been assigned (see processes for assigning <u>viability/integrity values</u> and <u>confidence values</u>). It may be a more effective use of data entry time to open each element record only once

to enter all of this information at the same time, rather than repeating the process several times to enter each of these items separately.

- Indicate whether the distribution of the element is represented by area or by distinct occurrences using the appropriate **Area** or **Occurrences** radio button.
- 7. Indicate whether there is a minimum size required for viability of the element in the checkbox, and if so, enter the **Minimum Size**. This minimum size value is used to exclude occurrences (i.e., 1 occurrence = 1 record in a distribution shapefile) that do not overlap with both a "compatible" land use and a "reliable" policy in <u>Scenario Evaluation</u> analyses, AND that fail to meet the element's condition threshold, from the total to be compared with the minimum size. If the area of the occurrence is less than the designated minimum size, the entire occurrence is not considered to be viable and is excluded from analyses.
- 8. Indicate whether there is a threshold for condition of the element in the checkbox, and if so, enter a value (ranging from 0.0 to 1.0, low to high threshold, respectively) for **Condition Threshold**. The condition threshold value is used to exclude data to be included in analyses on the basis of failing to meet minimum condition requirements to be considered viable. Condition threshold values specified in this field should result from running models in the system, rather than from element quality data.
- 9. To close the window and save the data entered in the element record click **OK**; otherwise, click **Cancel**.

#### SPATIAL TAB INPUT

Distribution Layer <none>  Cell size to use for conversion  Contribute of Distribution  Confidence in Distribution</none>	ment Properties - <new> meral Spatial Categories Compatibility</new>		1
Cell size to use for conversion       1 acres       Cance         Viability/Integrity       Image: Constribution       Image: Constribution       Image: Constribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Di	Distribution Layer <none></none>	0	
Viability/Integrity       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution       Image: Confidence in Distribution         Image: Confidence in Distribution       Image: Confidence in Distribution	Cell size to use for conversion 1 acres		Cancel
Attribute of Distribution     Raster Layer     None>     Map Context < None>     Map Context < None>	Viability/Integrity		Usia
Raster Layer (None>     Mone>     Mone>     Map Context < None>     Map C	Attribute of Distribution		Heip
Confidence in Distribution         Image: Confidence in Distribution	C Raster Layer (None)		
Attribute of Distribution     Attribute of Distribution     Raster Layer     None>     Map Context     None>	Confidence in Distribution		
Raster Layer     None>     Map Context     None>     Map Context	Attribute of Distribution	$\bigcirc$	
← Single Value Map Context < None > ▼	C Raster Layer (None) 🝸 🔊		
Map Context < None >	C Single Value		
	Map Context < None >		

1. Select the distribution layer for the element from the drop-down menu of

the **Distribution Layer** field, or by using the ArcCatalog button to browse to the layer. (Layers will be displayed in the drop-down menu only if the layer is the correct feature type and is included on the Display Type tab of the Table of Contents [TOC].) See the <u>Element Distributions</u> section for more details on distribution layers.

2. Enter a value indicating the cell size to be used for conversion. For a discussion of optimal cell size to be used for a planning project, see the <u>Determining Grid Cell Size</u> topic.

**Note:** If <u>Land Use and Conservation Scenario Evaluations</u> are to be performed, the grid cell size used to create the visualization layers generated by a <u>Scenario Evaluation</u> is set in this field. If this cell size differs greatly from the cell size specified for the scenario used in the evaluation (set in the <u>Scenario Properties window</u>), the visualization layers may not overlay the scenario correctly.

If <u>Conservation Value analyses</u> are to be performed, data entry for the fields contained in the *Viability/Integrity* and *Confidence in Distribution* group boxes (described in the following steps 3 and 4) can be deferred until values for these attributes have been assigned (see the sections on <u>Viability/Integrity</u> and <u>Confidence</u> for details on these attributes).

3. If Conservation Value analyses are to be performed, indicate whether the viability/integrity value is an attribute of the distribution

layer for the element, or is represented by a **raster layer** using the appropriate radio button.

If a raster layer is used, select the layer from the drop-down menu associated with the raster layer, or browse to the layer using the ArcCatalog button.

See the <u>Viability/Integrity</u> section for more details on this attribute.

4. If Conservation Value analyses are to be performed, indicate whether the confidence value is an **attribute of the distribution** layer for the element, is represented by a **raster layer**, or will consist of a single assigned value for all occurrences of the element, using the appropriate radio button.

If a raster layer is used, select the layer from the drop-down menu associated with the raster layer, or browse to the layer using the ArcCatalog button.

If a single value for confidence is to be used, record that value in the field next to the **Single Value** radio button.

See the <u>Confidence</u> section for more details on this attribute.

- Select from the Map Context drop-down menu an existing context to be used in creating reports for the element, if any. If a map context needs to be created for the element, see the topic entitled <u>Map Context Properties</u> <u>Window</u>.
- 6. To close the window and save the data entered in the element record click **OK**; otherwise, click **Cancel**.

#### **CATEGORIES TAB INPUT**

G.Bank v		Sustem	Catagoni	ок
Critically Imperiled (G1)	ا بىر	System	Calegoly	Cancel
Critically Imperiled(subspecies or Imperiled (G2)	AOO			
Imperiled(subspecies or varieties) Vulperable (53)	Del			Help
Vulnerable(subspecies or varietie				
Apparently Secure(subspecies or Secure(subspecies or				
Secure (ub) Secure(subspecies or varieties) (				
Unrankable (GU) Unrankable (subspecies or variel				
Unranked (GNR) Unranked(subspecies or varietie:				
Possibly Extinct (GH) Possibly Extinct(subspecies or va				
Presumed Extinct (GX) Presumed Extinct(subspecies or				
Not applicable (GNA)				
Not applicable(subspecies of Var				
< >				

Information on <u>Category Systems</u> to which an element belongs can be entered at any time once the element record has been created. Several default categories are provided in Vista, so it may be useful to indicate any of the default categories that apply initially, and then create additional categories and assign elements later as needed for developing <u>Filters</u>, conservation <u>Goal Sets</u>, and <u>Weighting Systems</u>, and performing analyses. To create a new category system, see the <u>Category System Properties window</u> section for details.

- To specify a category system to which the element belongs, select the <u>Category System</u> from the drop-down list in the upper left of the window. A list of the categories within that system will be displayed below the system name.
- Select the category to which the element belongs, and then click the Add button. The name of the system and category to which the element belongs will be displayed in the right pane of the window.
- 3. Repeat the system/category selection and add process to specify additional categories as needed.
- 4. To delete an element from a category system, select the system and category in the right pane and click the **Del** button.
- 5. To close the window and save the data entered in the element record click **OK**; otherwise, click **Cancel.**

	Inegative	- 1	01
O Maintain Primarily for Natural Values:	neutral		UK
<ul> <li>Biodiversity conservation:</li> </ul>	positive		Cancel
<ul> <li>0 Natural area recreation and open spac</li> </ul>			
<ul> <li>0 Unknown specific natural use:</li> </ul>			Help
B Maintained Primarily for Working/Occupied			
<ul> <li>O Low intensity working landscape:</li> </ul>			
- 0 Intensely managed working landscape			
- 0 Low-density development:			
0 Unknown specific working/occupied u			
O Utilized Primarily for Infrastructure:			
O Cleared transmission corridor:			
Minor road:			
- 0 Major road:	L		
🖉 🖌 🖌 🖌 🗹	0	1	
	Responses		

## COMPATIBILITY TAB INPUT

An indication of the degree to which implementation of a specific Land-use Intent (LUI) category (described in <u>Appendix F</u>) is compatible with an element - that is, will permit the element to persist - is recorded using this window. More specifically, implementation of compatible LUIs will permit a species to remain viable or an ecological element to maintain ecological integrity. <u>Scenario</u> <u>Evaluations</u>, used to assess element compatibility with various land use scenarios in terms of meeting conservation goals, are dependent upon these compatibility assignments for accurate results, so it is strongly recommended that only experts on the element assign compatibility. <u>Any</u> decisions related to

compatibility should be recorded (using the  $\bigcirc$  button to access the associated <u>Documentation Window</u>) to allow peer review and/ or legal review.

For more details on compatibility, see the <u>Land Use and Conservation Scenario</u> <u>Evaluations</u> section.

1. **If Land Use and Conservation Scenario Evaluations are to be performed**, indicate the degree to which the element is compatible with each of the NatureServe Vista LUI categories by clicking on the LUI to be assigned, and selecting the appropriate compatibility response from the list in the column to the right.

Assigning a response value to a major LUI category (e.g., "Maintain Primarily for Natural Values") will cause the system to automatically assign the entire category the same value (i.e., both the major category name and all of its associated child [minor] categories). However, assigning a compatibility response for a minor category LUI (e.g., "Biodiversity conservation") will not cause any other items in the category to be automatically designated.

- 2. To edit or add a new value to the list of compatibility responses, click the **Responses...** button to open the <u>Compatibility List window</u>.
- 3. To close the window and save the data entered in the element record click **OK**; otherwise, click **Cancel**.

### **Edit Element Information:**

Element properties can be edited either individually, or for multiple elements simultaneously, as described below.

## Edit an individual element:

- Navigate to the Element Properties window populated with existing data for the element by either right-clicking the element name in the NatureServe Vista table of contents and selecting **Element Properties...** from the resulting menu, or by clicking **Manage Elements...** from the Vista menu, selecting the element in the <u>Element List window</u> that opens, and clicking the **Properties...** button. The resulting properties window displays data for the element.
- Edit element properties data using the processes described above for adding an element as guidelines. More detailed descriptions of elements and related data can be found in the <u>Element Selection</u>, <u>Element</u> <u>Distributions</u>, <u>Viability/Integrity Attributes</u>, and <u>Confidence Attributes</u> sections.
- 3. To close the window and save any changes made to the element record click **OK**; otherwise, click **Cancel**.

### Edit multiple elements:

 Click Manage Elements... from the Vista menu to open the <u>Element List</u> <u>window</u>, and click the Edit Multiple... button to set property values for a designated set of elements simultaneously. See the <u>Multi-Element Property</u> <u>Edit window</u> for details on the process for editing properties for a group of elements.

## **EVALUATE SCENARIO WINDOW**

The **Evaluate Scenario- <New>** window is displayed either by selecting **Evaluate Scenario...** from the NatureServe Vista menu or clicking the **Evaluate...** button on the <u>Scenario List window</u>. This window is utilized for evaluating different land use and conservation scenarios (see the <u>Scenario Evaluations</u> section for more detailed information).

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

Evaluate Scena	rio - Baseline			
Name Description	Baseline			OK Cancel
Scenario Filter Goal Set	< None > < Unfiltered > Rarity	•		Help
Evaluate Compatible Elen	<ul> <li>Element/Land Use Compatibility</li> <li>Effective Element Protection</li> <li>ment Responses</li> </ul>	Reliable	Policy Types gislatively/Administrative vocable legislativel atutory enforced lan titutionally manager sident Managed E a nd use restricted by nd use restricted by luntarily protected restricted from con-	Mark All Clear All Clear All duse plan deasement or holding asement regulation temporary incentive program
Results Site Layer Categorize By Map Context	<none> Economic Value &lt; None &gt;</none>	• •		Preview Elements

#### Evaluate a scenario:

- Enter a name for the evaluation being performed in the Name field. The <New> on the window title will change to the name of the new scenario evaluation as the entry is typed in.
- 2. Enter a brief description for the new evaluation in the **Description** field.
- 3. Select the scenario to be evaluated from the **Scenario** drop-down list, or select the **<Add New...>** value to <u>develop a new scenario</u>, or the **<Show**

**List...>** value to display all developed scenarios (in order to select and modify an existing scenario).

- 4. Select the <u>Filter</u> (which determines the elements to be included in the evaluation) from the **Filter** drop-down list, or select the **<Add New...>** value to <u>create a new Filter</u>, or the **<Show List...>** value to display all existing filters (in order to select and modify an existing filter).
- 5. Select the <u>Goal Set</u> for the evaluation (which will be used to assess whether viable element occurrences are adequately conserved in different locations) from the **Goal set** drop-down list, or select the **<Add New...>** value to <u>create a new Goal Set</u>, or the **<Show List...>** value to display all existing goal sets (in order to select and modify an existing set of goals). Note that to evaluate multiple goal sets, a separate evaluation will need to be created for each set.
- 6. Click the **Preview Elements...** button to see a <u>Filtered Goal Set Report</u> showing the set of elements to be included in the evaluation and the goals that have been set for these elements, based on the values selected in the **Filter** and **Goal Set** fields. This knowledge can be helpful prior to running the scenario evaluation. The greater the number of elements included in an evaluation, the longer it will take to process; adjusting/creating a filter that will limit the evaluation to just those elements that are needed will ensure the most efficient use of processing time.
- Indicate whether the scenario will be evaluated for <u>compatibility</u> of elements with the land uses (indicated on the <u>Compatibility tab</u> of the <u>Element Properties window</u>) and/or for <u>protection</u> in the region by checking one or both of the **Element/Land Use Compatibility** and **Effective Element Protection** checkboxes.
- 8. If element protection will be evaluated (denoted using the Effective Element Protection checkbox in the previous step), indicate which policy types are considered to reliably protect viable occurrences if elements in the scenario during the planning time frame by utilizing the appropriate checkboxes in the Reliable Policy Types section. To check all the boxes with one keystroke, click the Mark All button; clicking the Clear All button will remove any checkmarks from the boxes. At least one protection type must be selected as valid for the evaluation or an error indicator<sup>®</sup> will be displayed.

This is a subjective process that separates scientific knowledge (<u>land use</u> <u>intent</u> [LUI] compatibility) from sociopolitical considerations (<u>policy types</u> [PT]). Whether a particular policy provides adequate protection for viable occurrences of elements is determined by judging the degree to which the policy mechanism guides the implementation of LUI designations, allowing or preventing land uses of greater intensity (that would fail to protect viable occurrences). For example, a zoning policy may be generally reliable in enforcing a particular land use but, because it can be changed with relative ease, it may not effectively insure implementation of a particular LUI over the planning time frame; thus, it may not offer adequate protection for viable occurrences from a conservation perspective. In comparison, lands held by nongovernment conservation organizations are typically managed for much less intense uses than are allowed under the local zoning regulations; such lands would, thus, offer better protection for viable occurrences than the allowable uses that would likely occur with different ownership/management.

Any assumptions made in designating specific PTs as reliable for protection should be documented (e.g., "zoning is now more strictly enforced than it was in previous years, and so was designated 'reliable' in this project"). The ability to designate different PTs as reliably providing protection can be used to test the benefits of enforcing particular policies in the planning region by creating separate evaluations for different combinations of reliable PTs and then comparing the results.

- 9. Specify a layer to be used in <u>Site Analyses</u> from the drop-down menu of the **Site Layer** field, or by using the ArcCatalog button to browse to the layer. The land units in the layer selected will be used for detailed examination of land use/policy type and element goals by unit.
- 10.Indicate how the Scenario Evaluation report should be summarized by selecting a category system from the **Categorize By** drop-down list, or selecting the **<Add New...>** value to create a new system, or the **<Show List...>** value to display all existing category systems (in order to select and modify an existing system).
- 11.Select a map context to be used in creating the scenario evaluation report from the **Map Context** drop-down menu, or select the **<Add New...>** value to create a new map context, or the **<Show List...>** value to display all existing map contexts (in order to select and modify an existing context).
- 12.Generate the Scenario Evaluation by clicking **OK**; otherwise press **Cancel**. Results are displayed in a Scenario Evaluation report. See the <u>Scenario</u> <u>Evaluation report</u> for more detailed information.

**Note:** The grid cell size used to create the visualization layers generated by the Scenario Evaluation is set on the <u>Spatial tab</u> of the <u>Element Properties window</u>. If that cell size differs greatly from the cell size specified for the scenario used in the evaluation (set in the <u>Scenario Properties window</u>), the visualization layers may not overlay the scenario correctly.

### Edit a Scenario Evaluation:

 Select the Scenario Evaluation from the NatureServe Vista Table of Contents (TOC), right-click, and choose Scenario Evaluation Properties... from the context window. The resulting window displays the evaluation.

- 2. Edit the Scenario Evaluation using the processes described above for creating a new evaluation as guidelines.
- 3. Generate the revised Scenario Evaluation by clicking **OK**; otherwise press **Cancel**.

# FILTER LIST WINDOW

The **Filter List** window is displayed by selecting **Lists → Filter List...** from the NatureServe Vista menu. This window lists all the filters that have been created for the project. See the <u>Filters</u> section for more detailed information on the development and use of filters in analyses.

😸 Filter List		
Name	Description	
Globally Imperiled		New
US Federally Liste		Properties
Rare or Federally		
Animals - All		Delete
Plants - All		
Ecological Commu		
Rare, Federally Lis		Report
Species at Risk	G1-G3 species and subspecies	
selected communit		
		Help
		Close

## **Button functions:**

- **New...** displays a new <u>Filter Properties window</u> that can be used to develop a new filter to be used in the project.
- **Properties...** displays the Filter Properties window showing details and allowing edits to the filter selected in the list.

**Delete** deletes the filter selected in the list.

A **Confirm Delete** window is displayed before the deletion is implemented.

A **Cannot Delete** window is displayed in cases when the filter is referenced by another item used in project analyses, as shown in the following example.

Cannot Delete	
The filter, "Globally Imperiled", can because it is referenced by the foll Conservation Value Summary ("El OK	not be deleted owing item(s): ement Richness")

**Report** displays a report that describes the selected filter and lists the elements that are included for analysis when the filter is applied. See the <u>Reports</u> section for more details on Filter reports.

**Help** opens the on-line documentation.

Close closes the window.

## Columns displayed:

Name - name of the filter.

**Description -** description of the filter, if any.

## **FILTER PROPERTIES WINDOW**

The **Filter Properties - <New>** window is displayed by clicking the **New...** button on the <u>Filter List window</u>. The new properties window is used to create a filter that can be used to define the set of elements to be included in analyses. See the <u>Filters</u> section for more detailed information on the development and use of filters in analyses.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

Add Filter Setting	Preview Results	Cancel Help
Add Filter Setting	ression	
Element Categories	ilter Setting Value	
US ESA   Endangered (E)  Threatened (T)		1
Proposed Endangered (PE)     Proposed Threatened (PT)     Candidate (CA)     Concern (CO)     None (NO)		

### Create a filter:

- 1. Specify a name for the filter in the **Name** field. The **<New>** on the window title will change to the name of the new filter.
- 2. If the ability to edit the filter should be limited to members of the data development team, place a check in the **Restricted** checkbox.
- 3. Enter a brief description of the filter in the **Description** field, if desired.
- 4. Choose the expression to be used to define the new filter by selecting the appropriate type from the **Add Filter Setting** drop-down menu. The setting selected will restrict the values that can be used to create that expression to those permitted by that filter. Available settings are as follows:
  - **Element Categories** used to select categories of elements
  - Individual Elements used to select specific elements
  - **Spatial Filter** used to designate a specific area within which elements must be located
  - Existing Filter used to select an existing filter
- 5. Select the appropriate value(s) to be used to define the elements and/or area to be included in an analysis. This process may differ based on the setting identified in the previous step, as follows:

**Element Categories** setting will cause a drop-down menu to be displayed containing all of the <u>category systems</u> defined in Vista. Select the category system to be used, and the categories within that system will be displayed with checkboxes. Check the box(es) for the category(ies) to be used in the expression. The categories selected will be automatically added as a row in the **Filter Expression** table. If desired, select another category system from the drop-down list and select categories from that system; another row will be added to the table.

**Individual Elements** setting will cause the list of elements in the Vista database to be displayed with checkboxes. Check the box(es) for the element(s) to be used in the expression, and the elements selected will be automatically added as a row in the Filter Expression table.

**Spatial Filter** setting will result in radio buttons that indicate the area to be used in the filter expression. The Project Boundary, or Default Boundary, is automatically included in all analyses and does not need to be selected from the spatial filter menu. To designate an area smaller than the project boundary, use the **Sub-Region** radio button

to select a layer from the drop-down menu, or by using the ArcCatalog button to browse to the layer. Note that if a sub-region is to be specified, the layer used must contain only a single feature (e.g., the county shape), and that only one layer can be used in the filter expression. Selecting another layer will result in its substitution for the layer originally chosen for the expression. In addition, spatial filters cannot be nested or included in sub-expressions, and can only be related to other rows in the **Filter Expression** table using the **AND** operand (see step 7 for information about operands).

**Existing Filter** setting will cause a drop-down menu to be displayed containing all of the filters already defined in Vista. Select the filter to be used and the expressions within that filter system will be displayed, and the filter automatically added as a row in the Filter Expression table. If desired, select another filter from the drop-down list and another row will be added to the table.

- 6. Repeat steps 4 and 5 as needed to create additional rows in the Filter Expression table. In some cases, different values from the same filter setting need to be represented by separate rows in the filter expression (e.g., when different operands need to be applied). In such cases, after selecting the values to be included in a row, reset by selecting a different filter setting and then select the desired setting again. Check off the desired values, and these will be displayed in a separate row in the Filter Expression table.
- 7. Once there is more than one row in the table, relationships between criteria in the different rows should be indicated. Click on the last column to the right in the table (before the column displaying the documentation icons) and select the appropriate operand, if any, to be used for different

rows, with **AND** indicating that all criteria defined in that row and following one must be met and **OR** indicating that criteria in at least one of the two rows must be met. Note, however, that **AND**s and **OR**s cannot be mixed in the same sub-expression. Click in the appropriate ( and ) columns to add brackets where needed in the expression. Entire rows can be moved up and down using the arrow buttons. A selected row can be deleted using the X button.

Moving the cursor from row to row in the **Filter Expression** table will cause the categories, elements, or other filters in the row to be automatically displayed in the lower left portion of the window for editing purposes, but the setting in the Add Filter Setting box will not change from the last one used to select values.

8. Once you have completed the entries and defined relationships in the

**Filter Expressions** table, validate the expression by clicking the validate button. If the expression cannot be validated, a window will be displayed indicating that the expression is not valid. Click **OK** and point to any column indicators **1** in order to display a brief statement describing the issue with the expression that prevents its validation. Correct the expression and recheck the validation.

If the filter expression is valid, a window will be displayed indicating that the expression is valid. Click **OK**.

- 9. To review the elements and/or area that will be included in analyses when the filter is applied, click the **Preview Results...** button. The resulting report will display the entire expression including brackets and operands, as well as any spatial filter used. See the <u>Reports</u> section for more details on Filter reports.
- 10.To close the window and save the expression developed for the filter click **OK**; otherwise, click **Cancel**.

### Edit a filter:

- 1. Select the filter from the list on the **Filter List** window (e.g., Element Type) and click the **Properties...** button. The resulting properties window displays the criteria defined for the filter.
- 2. Edit the filter using the processes described above for creating a new filter as guidelines.
- 3. To close the window and save any changes made to the filter click **OK**; otherwise, click **Cancel**.

## **GENERATE CONSERVATION SOLUTION WINDOW**

The **Generate Conservation Solution** wizard is displayed by selecting **Generate a Conservation Solution...** from the NatureServe Vista menu. This window is used to prepare the necessary input data for analysis by external conservation solution software, specifically <u>MARXAN</u> and <u>SPOT</u> (the Spatial Portfolio Optimization Tool). These applications evaluate different units of land according to criteria to determine which sets, when combined into larger units (e.g., portfolios or reserve systems) result in optimal conservation solutions in terms of several factors, including cost and representation of conservation targets. Once the input data are generated by Vista, the user is walked through the process of initiating solution runs using the external application.

For more detailed information on the MARXAN and SPOT applications, see <a href="http://www.ecology.uq.edu.au/marxan.htm">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.ecology.uq.edu.au/marxan.htm</a> and <a href="http://www.conserveonline.org/workspaces/spot">http://www.conserveonline.org/workspaces/spot</a>, respectively.

## Prepare for generating a conservation solution:

Before beginning the solution generation process, two or more attribute columns must be added to the analysis unit layer (identified in step 2 below) that will be used in the process.

- One or more columns must be added to represent different types of costs (e.g., effort [in days], mitigation costs), with values associated with units to be considered in the solution (indicated in step 4, below).
- One column must be added to represent the attribute selection status (indicated in step 5, below); values for this attribute are limited to Locked In, Locked Out, or may be null. The selection status attribute serves to identify units to be included (Locked In) or excluded (Locked Out) when a solution is generated; null values will permit the solution generator to choose whether or not to include the unit in the solution.



Note that at any time during the process of generating a solution, the previous step in the process can be revisited (and data changed, if desired) by clicking the **<Back** button, or the action can be canceled altogether by clicking the **Cancel** button.

### Generate a conservation solution:

 Indicate which application should be used as the basis for the solution to be generated by Vista using the appropriate MARXAN or SPOT radio button. Click Next>.

enerate Conservation Solution				
Solution Generation Tool Choose the solution generation software on which to b	pase the Vista outp	out.		Ģ
MARXAN MARXAN designs reserve systems by identifying ecological, social, and economic criteria. Scores based on both economic costs and the inclusion assigned when ecological objectives are not met. <u>http://www.ecology.ug.edu.au/marxan.htm</u>	g component units s are assigned to r n of conservation t	that meet eserve systems argets. Penalties	are	
SPOT SPOT designs portfolios comprised of analysis un values for a cost function that will be applied to p sum of (1) base cost, which increases as more un representing penalties for failure to meet ecologic which longer lengths indicate increased fragment http://www.conserveonline.org/workspaces/spot	nits, which are use possible portfolios, units are included, cal goals, and (3) I ation.	ed to determine This function is t (2) shortfall cost poundary cost in	he	
	< Back	Next>	Cancel	Help

 Indicate whether a new or existing <u>site analysis</u> will be used to generate the solution using the appropriate **Use Existing Site Analysis** or **Create a new Site Analysis** radio button. If an existing analysis will be used, select the analysis from the **Site Analysis** drop-down list. Click **Next>**.

erate Conservation	Solution					
put: Vista Site Analys Specify the Vista site be included in the solu	<b>iis</b> analysis that defines ution generation, or i	s both the ele	ments whose dist a new analysis wil	ributions will be I be created.	e used and the are	ea to
<ul> <li>Use Existing Site</li> <li>Site Analysis</li> <li>Create a new Sit</li> </ul>	e Analysis < None > e Analysis	•	An existing site filter (which de used. Data pre;	analysis alread lines the elemen paration will be	dy specifies the un nts and spatial bou faster with this op	nit layer and undary) to be tion.
			< Back	Next >	Cancel	Help

- If an existing analysis is being used for the solution, select the layer to be used from the drop-down list in the **Analysis Unit Layer** field, or by using the ArcCatalog button.
- Select the attribute (column) to be used to represent the costs associated with different units in the solution from the drop-down list in the Cost Attribute field.
- 5. Select the attribute (column) to be used to indicate whether units are to be included or excluded in the solution from the drop-down list in the **Selection Status** field. Click **Next>**.

Analysis Unit Layer Select a unit layer to be used for a ne for each unit in the analysis layer.	w analysis, and indicate the cost and existing protection status attributes
Analysis Unit Layer 🤇 Kone 🕻	
Cost Attribute	×
Selection Status	×
	Valid values for the Selection Status attribute are "Locked In", "Locked Out", or null. If null, the solution generator can choose whether or not to include the unit in the solution.
	KBack Next > Cancel Help

- 6. If a new analysis is being created for the solution, select the <u>filter</u> to be used in generating the solution from the drop-down list in the **Filter** field.
- 7. Select the <u>element conservation goals</u> to be used in the solution from the drop-down list in the **Goal Set** field. Click **Next>**.

Generate C	onservation Solution
Inputs: Go Select a	al Set and Filter goal set to be used in the solution generation and, for a new analysis, select a filter as well.
Filter	A filter defines the elements that will be included in the analysis, and a spatial boundary for their distributions.
Goal Set	A goal set defines the target conservation goals for each element.
	< Back Next > Cancel Help

- 8. Indicate whether a <u>weighting system</u> that assigns a penalty for each element is to be used in generating the solution, or a single penalty factor should be utilized for all elements using the appropriate radio button.
  - If an element-specific penalty is to be used, select the appropriate system from the **Weighting System** drop-down list.
  - If a penalty is to be assigned to all elements in the solution, specify the value to be used in the **Single Value field**.

Click **Next>**.

nalty Factor Select a weighting system defining prioritize element goal achievment	penalty factors per e relative to: other ele	ement, or one ments, minimiz	e value for all ting cost, and	elements. Penalty minimizing fragme	factors intation.
C Element-specific pe	nalty factor based on	a weighting s	ystem		
Weighting System	< None >		-		
One penalty factor	for all elements				
Single Value	15				
			2		

- 9. Specify the value to be used as the boundary length modifier in generating the solution.
- 10.Specify the number of iterations to be performed per run in the generation process.
- 11.Specify the number of runs to be performed in generating the solution. Click **Next>**.

Generate Conservation Solution				
Run Parameters Specify a set of parameters t	o control the run of th	e solution generation tool.		
Boundary Length Modifier Number of Iterations Number of Runs	0	The boundary length modifier indicates the relative importance of fragmentation in the solution. Number of iterations specifies the number of times inputs will be processed for a run. Number of runs specifies how many times a set of interations will be processed for the solution.		
		<back next=""> Cancel Help</back>		

12. If a solution has already been generated using the same analysis layer as that specified for this solution, the generation time can be reduced by utilizing the boundary layer that was produced from the previous run. In such an instance, check the box to indicate that an existing layer will be used, and enter its path in the **Boundary layer** field, or click the **Browse** button to navigate to the layer (found in the "r;boundary\_shapefile" folder) and select it. Click **Next>**.

nerate Conservation Solution Computed Boundary Layer If a solution has already been genera that run (located in the "boundary_sh	ated for the same analysis unit layer, the boundary layer produced from apefile" folder) can be reused in this solution generation.
Use existing boundary layer to sa Boundary layer	ave time
	Browse
	≪Back Next > Cancel Help

13.Specify the location to be used for folders created for the solution generation in the **Result location** field, or click the **Browse** button to navigate to the location. Click **Next>**.

Generate Conservation Solution				
Conservation Solution Result Specify the location to be used for the solution ge	neration input and resu	ult data folders.		$\bigcirc$
Result location				
		Browse .		
	< Back	Next >	Cancel	Help

14.To begin the generation process for the solution, click **Next>**.

Generate Conservation Solution
To run the conservation solution generation tool, click Finish. This will open a Ready window that lists all of the input parameters that were set in the preceding steps for review. Click OK. A Begin processing? window will open. If the parameters that were displayed in the previous window are correct for the solution generation process, click OK to continue initiating the run. If adjustments need to be made to the parameters, click No to return to the beginning of the wizard. Click Cancel to exit the solution generation tool. If OK was clicked to continue the generation process, Vista will next generate inputs. A final window will then open that says Now run, MARXANI or Now Run, SPOTI as appropriate. Below this first line will be additional information specific to the generation tool that was selected for the run.
KBack Next > Cancel Help

15.A **Ready** window will open that displays the parameters set for solution generation using the specified external solution generating application. Review the list of parameters for accuracy and click **OK**.

Ready 🛛 🔀
Ready to generate a conservation solution! Parameters:
Generator type: SPOT
Analysis unit layer name: DC_Wards
Cost attribute: Effort
Protection status attribute: SelSatus
Filter: < Species at Risk >
Goal set: < Rarest Protected >
weighting System: < Global Rank >
Doundary length modifyer: 0
Number iterations: 100
Number of runs: 10
Solution (result) nath: C()SolutionGen(results)2.14.06
Solution (Cosary Parin C, Solution Convesuits 2-14-00
OK

16.A **Begin Processing?** window will open. If the parameters that were displayed in the previous window are correct for the solution generation process, click **Yes** to continue initiating the run. If adjustments need to be made to the parameters, click **No** to return to the beginning of the wizard. Click **Cancel** to exit the solution generation tool.

Begin Processing?				
NatureServe Vista will n Choose 'Yes' to continue	ow prepare e, 'No' to ac	the inputs for th ljust input param	he solution generato neters or 'Cancel' to	r. exit the operation.
	Yes	No	Cancel	
		W	630 N	

If **Yes** was clicked to continue the generation process, Vista will next generate inputs.

17.A final window will then open that says **Now run, MARXAN!** or **Now Run, SPOT!** as appropriate. Click **OK** to begin generating a solution using the designated external software application.

Now, run MARX C:\marxanloc\ma	(ANI arxan.exe c:\patht	torun\inputs\input.dat
	OK]	]

	X
Now, run SPOT!	
There are batch files created in the inputs folder that will automatically invoke SPOT with your parameters.	
"standalone.bat" is for running on your computer.	
"distributed.bat" can be used if you wish to distribute runs across many computers. (See the SPOT documen	tation)
(OK]	

# GOAL SET LIST WINDOW

The **Goal Set List** window is displayed by selecting **Lists** • **Goal Set List...** from the NatureServe Vista menu. This window lists all the goal sets that have been created for the project. See the <u>Goal Sets</u> section for more detailed information on the development and use of goal sets in analyses.

😪 Goal Set List			
Name	Description		
G-Rank anima	ls	New	
test a ecologi	ical el	Properties	
		Delete	
		Report	
		Sub-goals	
		Help	
		Close	

### **Button functions:**

- **New...** displays a new <u>Goal Set Properties</u> window that can be used to develop a new goal set to be used in the project.
- **Properties...** displays the Goal Set Properties window showing details and allowing edits to the goal set selected in the list.
- **Delete** deletes the goal set selected in the list.
  - A **Confirm Delete** window is displayed before the deletion is implemented.

A **Cannot Delete** window is displayed in cases when the goal set is referenced by another item used in project analyses, as shown in the following example.

Cannot Delete 🛛 🔀
The goal set, "Rarity", cannot be deleted because it is referenced by the following item(s): Scenario Evaluation ("Rarity evaluation", "Species at Risk ", "Species at Risk - baseline") OK

- **Report** displays a report that describes the selected goal set and its settings, as well as any elements with explicit goals to be included in analysis when the goal set is utilized. See the <u>Reports</u> section for more details on Goal Set reports.
- **Sub-goals...** displays the <u>Edit Sub-Regional Goal Set window</u> that can be used to develop a new goal set to be used for a specific sub-region defined in the project.

Help opens the on-line documentation.

**Close** closes the window.

## Columns displayed:

**Name -** name of the goal set.

**Description -** description of the goal set, if any.

## **GOAL SET PROPERTIES WINDOW**

The **Goal Set Properties - <New>** window is displayed by clicking the **New...** button on the <u>Goal Set List window</u>. The new properties window is used to create a new set of conservation goals for elements of interest in the planning region. The goal set can be utilized in <u>Land Use and Conservation Scenario evaluations</u> for establishing a baseline against which both the existing land use status and scenarios for future land use can be compared, and conservation progress tracked over time. See the <u>Goal Sets</u> section for more detailed information on the development and use of goals in analyses.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).
Goal Set Prope	erties - «New	/>				
Name			$\checkmark$	Γ	Restricted	OK
Description					~	Cancel
					~	Lists [
Default Goal	100 pe	ercent 🚫				нер
Category System	< None >		•	Appl	y Goals	Element Report
Element Goals						
Name					Goal	▲
Historic Sites				ĺ	<default></default>	
Important Agricult	ture				<default></default>	<u>6</u>
<u>Viewsheds</u>					<default></default>	🤌 🔄
Mediterranean (	California Dry-M	esic Mixed Co	onifer Forest a	nd Wo	<default></default>	$\sim$
Xeric Serpentine	<u>Chapparal</u>				<default></default>	ø
Napa Western Fl	ax				<default></default>	ø
Central Valley Mix	<u>ked Oak Savann</u>	a			<default></default>	🧆
Mesic Serpentine	Woodland and	<u>Chapparal</u>			<default></default>	Ø
Northwestern Por	nd Turtle				<default></default>	Ø
California Annual	Grasslands Allia	ance			<default></default>	<u> </u>
California Coast F	Ranges Cliff and	Canyon			<default></default>	— 🍳 🗉
Conservation G	oal	✓ Percer	nt			Apply Goal
Occurrence	es					Reset to Default
C sq. meters						

### Create a goal set:

- 1. Specify a name for the goal set in the **Name** field. The **<New>** on the window title will change to the name of the new goal set as the entry is typed in.
- 2. If the ability to edit the goal set should be limited to members of the data development team, place a check in the **Restricted** checkbox.
- 3. Enter a brief description of the goal set in the **Description** field, if desired.
- 4. Enter a value in the **Default Goal** field to be used in cases when a specific goal is not assigned to an element. The default value in this field is 100 percent.

# *If a category system is to be used to create the goal set, continue with step 5; if not, skip to <u>step 7</u>.*

5. From the **Category System** drop-down menu select a category system to be used to define conservation objectives for the goal set. Only category

systems that define goals are shown in the drop-down list, such as the default "G-Rank" system displayed in the <u>Category System Properties</u> window below, although the option to create a new category system (**Add New...>**) or to display all existing systems (**Show List...>** in order to select and modify an existing system by adding goals) are included in the drop-down list.

Category System	Properties - G-Rank				
Name G-	Rank	Restricte	d 🗌	OK	
Description Heritage Ranking System for Global Rarity			3	Cancel	
LIBI http://www.natureserve.org/explorer/ranking.htm					
Default Category No	Global Rank 🔗 Default Code	Order:	20		
Categories have	codes 🔽 Defines weighting 🔽 Defines conse	rvation goals	Displa	y Order	
i Calegones nave		rvation goals			
Categories		10			
Name	Description	Weight	Goal	Order 🔺	
Critically Imperiled	Critically imperiled globally because of extre	1.00	100% 🚫	1	
Critically Imperiled	Critically imperiled globally because of extre	1.00	100% 🚫	2	
Imperiled	Imperiled globally because of rarity or beca	0.90	100% 🚫	3	
Imperiled(subspe	c Imperiled globally because of rarity or beca	0.90	100% 🚫	4	
Vulnerable	Vulnerable globally either because very rare	0.80	80% 🚫	5	
Vulnerable(subsp	e Vulnerable globally either because very rare	0.80	80% 🚫	6	
Apparently Secur	e Uncommon but not rare (although it may be	0.60	40% 🚫	7	
Apparently Secur	e Uncommon but not rare (although it may be	0.60	40% 🚫	8	
Secure	Common, widespread, and abundant (altho	0.40	10% 💋	9	
Secure(subspecie	s Common, widespread, and abundant (altho	0.40	10% 🚫	10	
Unranked	Global rank not yet assessed	0.30	0% 💋	11	
Unranked(subspe	c Global rank not yet assessed	0.50	0% 💋	12	
Not applicable	A conservation status rank is not applicable	0.20	0% 🔨	13	

The advantage of using a category system is that goals can be assigned for groups of elements (e.g., all elements that are Critically Imperiled will have a conservation goal of 100%) instead of element by element individually (e.g., goal assigned for Burrowing Owl is 80% of viable occurrences, goal assigned for California Black Rail is 90%, etc.).

Once a category system has been selected, Category and Cat:Goal columns are displayed for elements listed in the Goal Set Properties window, and the name and conservation goal associated with the category to which each element belongs are displayed in these columns, respectively.

6. If it is preferable to begin using goals set for elements in the category system instead of just <default> values, use the **Apply Goals** button to the right of the **Category System** field to replace values in the Goal column with those displayed in the Cat.Goal column. Note that this action will result in an "Apply to All?" window that prompts the use to decide

whether to replace any new values entered in the Goal column with the pre-existing goals assigned to the category (Yes), or retain any newlydefined values for the goal set being defined (No).

Apply to All?				
Apply the category goa Select "No" if you want	ls to all elements? to apply the cate Yes	gory goals to or	nly those elements c	urrently without a goal.

If the **Apply Goals** button is used before any specific element goals have been defined, it makes no difference whether the user chooses **Yes** or **No** since there are no new goals to be overwritten. (If specific goals have been defined, however, see <u>step 7</u>.) Category goal values will be displayed in the Goal column.

Name FY06 County Element Goals Description	s 😥	Г	Restricted	OK Cano	el
Default Goal 60 percent 🧭	3		×	Help	)
Category System G-Rank	•	App	oly Goals	Element Re	port
Element Goals		50000000000			112
Name	Category	Cat:Go	Goal		
Historic Sites	No Global Ra		<default></default>	<u>(</u>	2
Important Agriculture	No Global Ra		<default></default>	0	2
<u>Viewsheds</u>	No Global Ra		<default></default>	0	- <
Mediterranean California Dry-Mesic Mixed	No Global Ra		<default></default>	0	2
Xeric Serpentine Chapparal	No Global Ra		<default></default>	0	2
Napa Western Flax	Critically Imp	100%	100% of 0	ccurrence 🤇	2
Central Valley Mixed Oak Savanna	No Global Ra		<default></default>	0	2
Mesic Serpentine Woodland and Chappar	No Global Ra		<default></default>	0	2
Northwestern Pond Turtle	Apparently S	40%	40% of Occ	urrences 🤇	2
California Annual Grasslands Alliance	No Global Ra		<default></default>	0	2
California Coast Ranges Cliff and Canyon	No Global Ra		<default></default>	0	١.
Conservation Goal Units • Occurrences • sq. meters	cent			Apply Gr Reset to Dr	oal efault

7. To assign a specific conservation goal to an element for this goal set:

- Highlight the element
- Enter (or change) the value in the Conservation Goal field in the lower left corner of the window. The value will be changed in cases when the Goal has been previously populated with the category value using the Apply Goals button, or when a value has been previously specified for the element.
- Indicate whether the goal represents viable occurrences or viable area to be conserved for the element by selecting either the **occurrences** or **area** radio button, respectively, in the Units group box in the lower left corner of the window.

If a category system is being used to create goals, the appropriate occurrences or area radio button in the Units group box will be automatically selected based on the goal in the category system. Changing this default setting may significantly impact the actual viability (or integrity, for ecological communities and systems) of an element to be conserved in the region of interest if the goal is not appropriate for the type of data associated with that element. The first time such a change is made during the process of defining the conservation goal for a specific element, the following warning message is displayed:

Warning	
Changing the conservation unit from may cause significant changes in t done in consultation with the elem	m that set in the element properties dialog ne viability of the element and should be ent expert. OK

• If the goal is to be applied as a *percentage* of viable occurrences or viable area to be conserved rather than the *number* of viable occurrences or viable area, place a check in the **Percent** checkbox. Note that if the element has an assigned category goal, the **Percent** checkbox will be checked by default since category goals always represent a percentage, rather than a number, of occurrences or area.

Goal Set Proper	ties - FY06 County I	lement Goal	S		
Name F	Y06 County Element Goals	s 💋	Г	Restricted	ОК
Description				~	Cancel
				-	
Default Goal 6	0 percent 🧭				Help
Category System G	i-Rank	•	Арр	ly Goals	Element Report
Element Goals					
Name		Category	Cat:Go	Goal	
Historic Sites		No Global Ra	-	<default></default>	
Important Agricultur	e	No Global Ra		<default></default>	
Viewsheds		No Global Ra		<default></default>	
Mediterranean Calif	fornia Dry-Mesic Mixed	No Global Ra		<default></default>	
Xeric Serpentine Ch	napparal	No Global Ra		<default></default>	
Napa Western Flax		Critically Imp	100%	100% of Occurrence 😣	
Central Valley Mixed	<u>d Oak Savanna</u>	No Global Ra		<default></default>	
Mesic Serpentine	Woodland and Chappar	No Global Ra		<default></default>	
Northwestern Pond	Turtle	Apparently S	40%	40% of Occ	urrences 😣 💧
California Annual G	irasslands Alliance	No Global Ra		<default></default>	
California Coast Ra	nges Cliff and Canyon	No Global Ra		<default></default>	🧭 🚽
Eonservation Go	al 90 Perc	papt			Apply Goal
Units • Occurrences C sq. meters	90% of	Occurrences			Reset to Default

• Once these items have been completed, click the **Apply Goal** button in the lower right corner of the window to assign the conservation goal to the element. Note that a specified conservation goal for a particular element can be changed back to the original <default> value by highlighting the element and clicking the **Reset to Default** button in the lower right corner of the window.

Name FY06 County Element Goal	s 🚫	Г	Restricted	0	ж
Description			~	Ca	ncel
Default Goal 60 percent 🤘	2		<u>×</u>	Н	elp
Category System G-Rank	•	App	bly Goals	Element	Report
Element Goals					
Name	Category	Cat:Go	Goal		
Historic Sites	No Global Ra		90% of Occ	urrences	0
Important Agriculture	No Global Ra		<default></default>		D
<u>Viewsheds</u>	No Global Ra		<default></default>		Ø.
Mediterranean California Dry-Mesic Mixed	No Global Ra		<default></default>		D
Xeric Serpentine Chapparal	No Global Ra		<default></default>		D
Napa Western Flax	Critically Imp	100%	100% of Oc	courrence	D
Central Valley Mixed Oak Savanna	No Global Ra		<default></default>		D
Mesic Serpentine Woodland and Chappar	No Global Ra		<default></default>		0
Northwestern Pond Turtle	Apparently S	40%	40% of Occ	urrences	Q.
California Annual Grasslands Alliance	No Global Ra		<default></default>		Q
California Coast Ranges Cliff and Canyon	No Global Ra		<default></default>		Q.
Conservation Goal 90 🔽 Per	cent			Apply	Goal
Units     Occurrences     Sa. meters	Occurrences			Reset to	Defau

# *If a category system is <u>not</u> being used to create goals, skip to <u>step</u><u>9</u>.*

8. If, after specific element goals have been defined, there are <default> values remaining in the Goal column that need to be replaced with the goal values defined for the category system instead of simply using the value in the **Default Goal** field, use the **Apply Goals** button to the right of the **Category System** field. This will replace the <default> values in the Goal column with those displayed in the Cat.Goal column. Note that this action will result in an "Apply to All?" window that prompts the user to decide whether to replace any new values entered in the Goal column with the pre-existing goals assigned to the category (**Yes**), or retain any newly-defined values for the goal set being defined (**No**).



Unless specifically defined goals should be overwritten, the user should choose **No** to replace only <default> values in the Goal column.

- To view a report on a specific element, highlight the element and the Element Report button. See the <u>Element Details Report</u> for more detailed information.
- 10.To close the window and save the goal set click **OK**; otherwise, click **Cancel**.
- 11.To review details on the new (saved) goal set, open the <u>Goal Set List</u> <u>window</u>, select the set, and click the **Report** button. Settings for the goal set, as well as goals assigned to specific elements will be displayed. See the <u>Reports</u> section for more details on Goal Set reports.

### Edit a goal set:

- 1. Select the goal set from the list on the <u>Goal Set List window</u> and click the **Properties...** button. The resulting properties window displays the goals defined for elements in the goal set.
- 2. Edit the goal set using the processes described above for creating a new goal set as guidelines.
- 3. To close the window and save any changes made to the goal set click **OK**; otherwise, click **Cancel**.

### **INITIAL CONDITIONS WINDOW**

The Initial Condition Model list is accessed through the Vista main menu -> Lists -> Initial Condition Model List.

🛃 InitialConditions	
Scenario <mark>&lt; None &gt; ▼</mark> Output folder … Condition models	Run model Close

See <u>Using the initial condition modeler</u> for instructions on data entry for this window.

# LANDSCAPE CONDITION MODEL PROPERTIES WINDOW

The Landscape Condition Model Properties window is accessed by clicking the blank area in the condition model next to an element and selecting new model.

🔜 Edit Condition Model Properties			
Condition Model Name			OK
Value Range Thresholds		Combine Using: Acci	umulated Sum 📃
Value Range Factor Name	Lower Bound	Upper Bound	Condition Loss
New Factor	Edit Selected	Delete Selec	sted

See <u>Creating distance intensity models</u> for instructions on data entry for this window.

# MAP CONTEXT LIST WINDOW

The **Map Context List** window is displayed by selecting either **Lists > Map Context List...** or **Reports> Map Context List...** from the NatureServe Vista menu. This window lists all the map contexts that have been created for the project to be used in creating reports, if any. A map context is a stored legend that can be used to help ensure that certain features are consistently included in specific reports. Note that Vista can apply map context individually for elements in the database. Thus, a specific map context can be defined and named for every element, if desired. For example, a map context could be created for a particular element, such as bald eagle, which would include layers that should always be displayed in a report on bald eagles (e.g., hillshade, rivers, county boundaries, watersheds).

😪 Map Context List	
Name	New
	Properties
	Delete
	Help
	Close

### **Button functions:**

- **New...** displays a new <u>Map Context Properties window</u> that can be used to develop a new map context to be used in the project.
- **Properties...** displays the Map Context Properties window showing details and allowing edits to the context selected in the list.
- **Delete** deletes the map context selected in the list. A **Confirm Delete** window is displayed before the deletion is implemented.

Help opens the on-line documentation.

Close closes the window.

### **MAP CONTEXT PROPERTIES WINDOW**

The **Map Context Properties - <New>** window is displayed by clicking the **New...** button on the <u>Map Context List window</u>. The new properties window is used to create a new map context that can be used to help ensure that certain features are consistently included in specific reports.

Map Context Prope	rties - <new></new>
Name Layers:	
<content layer=""></content>	<pre></pre>
ОК	Cancel Help

### Create a map context:

- 1. Specify a name for the new map context in the **Name** field. The **<New>** on the window title will change to the name of the new map context as the entry is typed in.
- 2. Select the content layers to be displayed when the map context is applied by either

selecting the layers from the drop-down menu, or by using the ArcCatalog button to browse to the layer. (Layers will be displayed in the drop-down menu only if the layer is the correct feature type and is included on the Display Type tab of the left pane of the Vista application, referred to as the Table of Contents [TOC].)

- 3. Using the up and down arrow buttons, set the order in which features will draw by changing the order of the layers as needed. Click the delete button (red X) to remove any layers.
- 4. If the application should automatically display the full extent of the content layers selected when the map context is applied, check the **Zoom to Content Extent** checkbox.
- 5. To close the window and save the data entered for the map context click **OK**; otherwise, click **Cancel**.

### Edit a map context:

- 1. Select the map context from the list on the <u>Map Context List window</u> and click the **Properties...** button. The resulting properties window displays the map context.
- 2. Edit the map context using the processes described above for creating a new map context as guidelines.

3. To close the window and save any changes made to the map context click **OK**; otherwise, click **Cancel**.

### **MULTI-ELEMENT PROPERTY EDIT WINDOW**

The **Multi-Element Property Edit** window, displayed by clicking the **Edit Multiple...** button on the <u>Element List window</u>, is used to set values for a selected group of elements simultaneously.

Multi-Element Property Edit		
<ul> <li>bald eagle</li> <li>california mesic chapparal</li> <li>central valley mixed oak savannah</li> <li>central valley riparian woodland and shrubland</li> <li>napa false indigo</li> <li>napa western flax</li> <li>northwestern pond turtle</li> <li>purple martin</li> <li>townsend's big-eared bat</li> <li>xeric serpentine chapparal</li> </ul>	General       Spatial       Categories       Compatibility         Name       Image: Compatibility       Image: Compatibility         Alternate Name       Image: Compatibility       Image: Compatibility         URL       Image: Compatibility       Image: Compatibility         URL       Image: Compatibility       Image: Compatibility         Image: Compatibility       Image: Com	OK Cancel Help

### Edit properties for multiple elements:

- 1. Select the set of elements that is to be assigned the same values for specific properties by clicking either on each element to be included or on the checkbox for each of these elements.
- 2. Choose the appropriate tab(s) that contain properties to be changed for the designated group of elements. You will notice that the attributes that can be edited are limited, with many "grayed out" and unavailable. In addition, there are no values displayed in any of the fields that can be edited, even if the existing values for the selected elements are the same to begin with. Properties that can be edited for the designated set of elements simultaneously are as follows:

On the **GENERAL** tab, can edit:

Measured by Area or Occurrences Has a minimum size for viability Minimum Size Has a condition threshold Condition threshold On the **SPATIAL** tab, can edit:

Viability/Integrity - Attribute of Distribution or Raster Layer Map Context

On the **CATEGORIES** tab all Category Systems can be edited

On the **COMPATIBILITY** tab element compatibility can be edited

- 3. Edit properties in the records of the selected elements simultaneously by clicking the appropriate radio buttons or checkboxes, entering values, and/or choosing values from drop-down menus for any properties that are to be set to a single value for these elements. Guidance for editing elements is provided in the processes described for adding new elements using the <u>Element Properties window</u>.
- 4. To close the window and save the edits made in the records of each of the selected elements simultaneously, click **OK**; otherwise, click **Cancel**.

### **PREFERENCES WINDOW**

The **Preferences** window is displayed by selecting **Project Preferences...** from the NatureServe Vista menu. This window lists the default behavior of commonly used fields in the project. Setting these preferences can save time during data entry.

Default Site Layer			
Default Category System	< None >	<u> </u>	ОК
Default Filter	< Unfiltered >	•	Cancel
Default Weighting System	< None >	<u> </u>	
Default Goal Set	< None >	•	Help
Default Map Context	< None >	•	
Default Site Layer	<none></none>		
ement TOC Category System	< None >	•	
Log Level	Error	-	

### Set project preferences:

- Select the category system to be used as the project default from the Default Category System drop-down list. The selected category system will be the default displayed on the Categories tab of the <u>Element</u> <u>Properties window</u> when creating a new element, on the <u>Filter Properties</u> window when creating a new filter, and as the value in the Summarize Report By field on the <u>Evaluate Scenario window</u> when creating a new evaluation report.
- 2. Select the filter to be used as the project default from the **Default Filter** drop-down list. The selected filter will be the default displayed on the <u>Summarize Conservation Value window</u> and the <u>Evaluate Scenario window</u>.
- 3. Select the weighting system to be used as the project default from the **Default Weighting System** drop-down list. The selected system will be the default displayed on the <u>Summarize Conservation Value window</u>.
- Select the goal set to be used as the project default from the Default Goal Set drop-down list. The selected goal set will be the default displayed on the <u>Evaluate Scenario window</u>.
- 5. Select the map context to be used as the project default from the **Default** Map Context drop-down list. The selected context will be the default displayed on the Spatial tab of the <u>Element Properties window</u> when creating a new element, on the <u>Summarize Conservation Value window</u>, and on the <u>Evaluate Scenario window</u>.
- 6. Select the layer to be used as the project default from the Default Site

**Layer** drop-down list, or use the ArcCatalog button to browse to the a layer to be used as the default site layer for <u>Site Analyses</u>, displayed on the <u>Summarize Conservation Value window</u> and on the <u>Evaluate Scenario</u> window.

- 7. Select the category system to be used as the default for the project Table of Contents (TOC) from the **Element TOC Category System** drop-down list. The selected category system will be the grouping used for the elements listed in the TOC. This setting can be altered by selecting the **Elements** header in the TOC, right-clicking, selecting **Element Properties...** from the context menu, choosing the Group tab from the resulting Group Layer Properties window, and then manually altering the list of elements displayed.
- 8. Select the level of detail to be used for information logged for errors, stored in the <project location>\Logs\Vista.log file from the Log Level drop-down list, specifically Error, Warning, Info, and Verbose. The values indicate an increasing level of detail to be logged, with the Error level logging only error messages and the Verbose level logging everything. The log file is created to help identify the cause of any errors.

### Edit project preferences:

1. Select **Project Preferences...** from the NatureServe Vista menu. The resulting window displays the current preferences for the Vista project.

- 2. Edit the project preferences using the parameters described above for setting preferences.
- 3. To close the window and save any changes made to the values click **OK**; otherwise, click **Cancel**.

## **PROJECT PROPERTIES WINDOW**

The **Project Properties-Untitled** window is displayed by selecting **ProjectNew...** from the NatureServe Vista menu. The properties window contains information that is used to help insure that the project database and associated files are set up properly.

Before creating a NatureServe Vista project, one or more spatial data layers must be added to the Display tab of the Table of Contents.

Project Name Untitled	ОК
Project Area Units Acres	Cancel
Default Cell Size 0 acres	Help
Snap Raster None>	
Data Frame	

Note that all the fields in the Project Properties window must be completed before the Vista project can be created.

### Set properties for a new project:

- 1. Specify a name for the project in the **Project Name** field.
- Select the unit of area that is to be used for the project from the **Project Area Unit** drop-down list. The value selected determines how all areas
   are calculated in the database and is fixed once the project has been
   created. After this value is saved, all windows in the project will reflect
   the unit type selected.

# Note that once a unit has been selected for a project and saved, IT CANNOT BE CHANGED.

3. Enter a value in the **Default Cell Size** field. This is a time-saving device used when layers are created in Vista. The value entered in this field will be displayed as the default cell size in all Vista windows used to produce layers; the default value can then be changed in any of those windows to

a size more appropriate for a particular analysis. See the <u>Determining</u> <u>Grid Cell Size</u> topic for more information on selecting cell sizes.

4. Select a value from the **Snap Raster** drop-down list that <u>displays</u> the

layers already in the Table of Contents (TOC), or use the ArcCatalog button to browse to the a layer to be used as the project snap raster. See the <u>Snap Raster</u> topic for more information on selecting the appropriate snap raster for the project.

- 5. All of the derived layers in Vista must be loaded into the same ArcMap data frame. Select the appropriate value from the **Data Frame** drop-down list. The default value for an ArcMap data frame in a new project is **Layers**.
- 6. Select a value from the **Project Boundary** drop-down list that displays

the layers already in the Table of Contents (TOC), or use the ArcCatalog button to browse to the layer to be used to define the boundary of the project area. The layer to be used as the project boundary can only contain one feature. Note that this selection cannot be later replaced by a smaller boundary layer or one that is offset from the original boundary layer selected. In cases when the boundary for a project is uncertain, it is recommended that this selection be conservative initially since a larger encompassing layer can be utilized later if needed.

7. To close the window and save the properties data entered for the project click **OK**; otherwise, click **Cancel**.

Clicking **OK** will result in the following units confirmation window:

Selecting Unit	s for the Proje	ct	
The unit selectic Once establishe Click OK to acce	n determines how d, the selection ca pt the current sele OK	amounts are stored in nnot be modified in this ction or Cancel to char Cancel	the database. s project. ige it.
	OK	Cancel	

Accepting the unit selection (clicking **OK**) will be followed by:

Save Current Map Document?	
In order to create a new NatureServe Vista project, the current map document must b Do you want to save it now? OK Cancel	ie saved,

Clicking **OK** will result in creation of a new NatureServe Vista project, indicated by a confirmation window:

New NatureServe Vista Project Created	
A new NatureServe Vista project has been successfu Files\VISTA\SampleData\Sample_Data_Smaller\Vista_ OK	created in C:\ Work apaCountyFY06.

#### Edit existing project properties:

- 1. Select **Project Properties...** from the NatureServe Vista menu. The resulting window displays the current properties settings for the Vista project.
- 2. Edit the project properties using the information on appropriate alternate values for the fields described above.
  - The Project Area Units field in an existing project cannot be altered.
  - If the value in the **Snap Raster** field is edited, the following warning is displayed:

Warning		
Changing the snap raster for an e	existing project can produce inconsist	ent results in analysis.

To continue, click **OK**.

• If the value in the **Project Boundary** field is edited, the following warning is displayed:

Warning	
Changing the default boundary for an existing p Specifically, all elements' spatial data should be r	pject can produce inconsistent results in analysis. freshed in order to update the distribution statistics. DK

### To continue, click **OK**.

If the new project boundary layer selected is smaller or offset from the original boundary layer, a warning indicator  $\Theta$  will be displayed with the message: "Once established in the project, the project boundary can only be increased. It cannot be decreased or shifted" and the

disallowed layer must be replaced by another valid selection in order to continue.

If the new project boundary layer selected contains more than one feature, a warning indicator **9** will be displayed with the message: "Spatial filter layer must contain exactly one feature (this layer may not be selection-based). Parameter name: "and the disallowed layer must be replaced by another valid selection in order to continue.

3. To close the window saving any changes made to the properties click **OK**; otherwise, click **Cancel**.

## **RANGEDLOSS FACTOR FORM**

This window is accessed by Selecting New Value Range Factor from the Value Range Factor form.

🔜 RangedLossFactorForm		
	Value Range Condition Factor Definition	
Value Range Factor Name	NSPECT Phosphorus	
Value Range Factor Raster File	<none></none>	
	OK Cancel	

See <u>Creating value range factors</u> for instructions on data entry for this window.

### **REFRESH SELECTED RESULTS WINDOW**

The **Refresh Selected Results** window can be opened several ways, depending on the item(s) to be refreshed.

- To display the Refresh Selected Results window listing all items that can be refreshed in the project (that is, elements, <u>Conservation Value Summaries</u> (CVS), and <u>Scenario Evaluations</u>, seen by scrolling down the list), click **Refresh Results...** from the NatureServe Vista menu.
- To display the Refresh Selected Results window listing only elements in the project to be refreshed, click the **Refresh...** button on the <u>Element List</u> window, or right-click on the major heading "Elements" on the NatureServe Vista tab in the Table of Contents (TOC) and choose **Refresh Results...** from the context window.

- To display the Refresh Selected Results window listing only CVS in the project to be refreshed, click the **Refresh...** button on the <u>Conservation</u> <u>Value Summary List window</u>.
- To display the Refresh Selected Results window listing only scenarios and Scenario Evaluations in the project to be refreshed, click the **Refresh**... button on the <u>Scenario List window</u> or the <u>Scenario Evaluation List window</u>, or right-click on the major heading "Evaluations" on the NatureServe Vista tab in the TOC and choose **Refresh Results...** from the context window.

### Refresh data:

- Indicate which data are to be refreshed by using the check-box(es) associated with the element(s) and/or project analyses. The Select All button can be used to select the entire list of items; using the Select None button will de-select any items that have been selected.
- 2. Indicate whether the refresh process should be cancelled if an error should occur using the **Abort upon any error** checkbox.
- 3. Click the **Refresh** button to begin the data refresh process.

If the refresh process completes without errors, the following message is displayed:

×
essfully.

If an error occurs during the refresh, the following message will be displayed



and an error log will be displayed in the lower half of the Refresh Selected Results window.

Select items for next to their nar click the "Refre	refresh by checking boxes nes. When you're ready, sh'' button.
Refresh	Abort upon any error
Select All	Help
Select None	Error Details
	Click the "Refre Refresh Select All Select None

If more detailed information on the error(s) encountered is desired, click on the error log and then click the **Error Details...** button to display an Error Detail window.



Note that elements, CVS, and Scenario Evaluations in the project can be refreshed *without* opening the Refresh Selected Results window. To accomplish this, right-click on a single element or analysis on the NatureServe Vista tab of the Table of Contents and select **Refresh Result** from the context menu. A Confirm Processing window will be displayed.

Confirm Processing			
The element spatial data can now be calculated.			
Click 'OK' to being processing now, or click 'Cancel' to cancel processing.			
ОК	Cancel		

Click **OK** to continue with the refresh process; otherwise, click **Cancel**.

Scenarios in the project can also be refreshed *without* opening the Refresh Selected Results window. To accomplish this, right-click on a single scenario on the NatureServe Vista tab of the Table of Contents and select **Refresh Result** from the context menu. A Refresh Evaluations? window will be displayed.

aluations. Ref	resh all evaluation r	esults as well?
No	Cancel	
	aluations. Refi No	aluations. Refresh all evaluation r

Click **Yes** to refresh both the scenario as well as any Scenario Evaluations that utilize the scenario; click **No** to refresh only the scenario; otherwise, click **Cancel**.

## **REPORT OPTIONS WINDOW**

The **Report Options** window is displayed by clicking the **Customize** button on the toolbar displayed in a report. This window provides the ability to set options for data to be included in a report.

🖂 laskula Dasumantalian	OK
Numeric Precision 2	Cancel
	Halo

#### Set report options:

- Indicate that documentation is to be included in the report by checking the Include Documentation checkbox. The term "documentation" refers specifically to any information entered in a <u>Documentation window</u> associated with data included in the report.
- Enter a number in the Numeric Precision field that indicates the digits to be displayed to the right of the decimal point for numeric values in the report.
- 3. To close the window, saving any changes made to the options click **OK**; otherwise, click **Cancel**.

### **SCENARIO EVALUATION LIST WINDOW**

The **Scenario Evaluation List** window is displayed by selecting **Lists >Scenaria Evaluation List...** from the NatureServe Vista menu. This window lists all the Scenario Evaluations that have been created for the project. See the <u>Conservation and Land Use Scenarios</u> section for more detailed information on this analysis.

Scenario Ev	valuation List		
Name	Description	Scenario	
Rarity evaluation		Napa County baseline	New
Species at Risk Species at Risk -	Species at Risk evaluated again Species at Risk evaluated again	Proposed Wilderness Napa County baseline	Properties
			Delete
			Report
			Refresh
			Help
			Close

### **Button functions:**

- **New...** displays a new <u>Evaluate Scenario window</u> that can be used to develop a new evaluation for the project.
- **Properties...** displays the Evaluate Scenario window showing details and allowing edits to the analysis selected in the list.

**Delete** deletes the Scenario Evaluation selected in the list.

A **Confirm Delete** window is displayed before the deletion is implemented.

Confirm Delete	
Are you sure you want to delete the	e scenario evaluation, "Rarity evaluation"?

- **Report** displays a report for the selected Scenario Evaluation that displays the land use or policy scenario that was evaluated in terms of element goals. See the <u>Reports</u> section for more details on Scenario Evaluation reports.
- **Refresh...** displays the <u>Refresh Selected Results</u> window that can be used to refresh the data for selected Scenario Evaluation.

**Help** opens the on-line documentation.

**Close** closes the window.

### Columns displayed:

**Name -** name of the Scenario Evaluation.

**Description -** description of the evaluation, if any.

Scenario - name of the scenario used in the evaluation.

### **SCENARIO LIST WINDOW**

The **Scenario List** window is displayed by selecting **Lists Scenario List** from the NatureServe Vista menu. This window lists all the scenarios that have been imported into the project. See the <u>Land Use and Conservation Scenario</u> <u>Evaluations</u> section for more detailed information on defining and using scenarios.

🗟 Scenario List		
Name	Description	
Napa County base		New
Proposed Wildern	Baseline conditions with the additi	Properties
		Delete
		Report
		Сору
		Evaluate
		Refresh
		Help
		Close

### **Button functions:**

- **New...** displays a new <u>Scenario Properties window</u> that can be used to define a new scenario to be imported into the project.
- **Properties...** displays the Scenario Properties window showing details and allowing edits to the scenario selected in the list.

**Delete** deletes the scenario selected in the list.

A **Confirm Delete** window is displayed before the deletion is implemented.

A **Cannot Delete** window is displayed in cases when the scenario is referenced by one or more Scenario Evaluations, as shown in the following example.

Cannot Delete	
The scenario, "Napa because it is referer Scenario Evaluatio	County baseline", cannot be deleted ced by the following item(s): ("Rarity evaluation", "Species at Risk - baseline") OK

- **Report** displays a report for the selected Scenario that displays the settings used to create the scenario. See <u>Reports</u> section for more details on Scenario reports.
- **Copy** creates a copy of the scenario selected in the list, which can then be edited to create a new scenario for import.

- **Evaluate** opens a new <u>Evaluate Scenario window</u> that uses the scenario selected in the list.
- **Refresh...** displays the <u>Refresh Selected Results</u> window that can be used to refresh the data for the selected scenario.

**Help** opens the on-line documentation.

**Close** closes the window.

### Columns displayed:

**Name -** name of the scenario.

Description - description of the scenario, if any.

### **SCENARIO PROPERTIES WINDOW**

The **Scenario Properties - <New>** window is displayed by either clicking the **New...** button on the <u>Scenario List window</u> or choosing **Define Scenario...** from the NatureServe Vista menu. The new properties window is used to define new scenarios that can be utilized in <u>Land Use and Conservation Scenario Evaluations</u>. Note that typically a baseline scenario (representing current conditions in the planning region) will be defined first. See the section on <u>Scenarios</u> for more detailed information on defining and using scenarios in analyses.

New scenarios can be defined using scenarios that have already been developed in Vista. The process for defining a new scenario based on an existing one involves first copying the existing scenario using the **Copy** button on the <u>Scenario</u> <u>List window</u>, and then renaming and modifying the copy in the Scenario Properties window before defining it as a new scenario (see the section below on <u>editing a scenario</u> for more details).

Override nodes function in order of precedence. If layers are stacked in an Override node and there are instances of overlap between the layers, whichever layer is higher in the scenario list, will override, or trump the one below it.

Combine nodes function as additive features. Any number of land uses can exist in one place if they are stacked in a Combine node. Element compatibility and response to multiple land uses is discussed in the <u>Scenario Evaluations</u> section of this manual.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

Scenario Name Scenario Description				Defrect and the	0K
			8	V Defines Policy Type	Lance
Cell size (for conversion)	500 acres			in comos cons 1990	Help
.ayet		Component	Land Use	Policy	
(None)	•				
Land Use Translator					
< None >					
	2				
	4				
Policy Type Translator					
Policy Type Translator < None >					
Policy Type Translator < None >					

### Define a scenario:

- 1. Specify a name for the new scenario in the **Name** field. The **<New>** on the window title will change to the name of the new scenario as the entry is typed in.
- Enter a brief description of the scenario in the **Description** field, if desired.
- Indicate whether both land use and policy type evaluations will be performed using the scenario (the default), or only a single type of evaluation will be performed, by using the **Defines Land Use** and/or **Defines Policy Type** checkboxes.
- 4. If desired, edit the value in the **Cell size (for conversion)** field, which displays the default grid cell size specified for the project in the <u>Project</u> <u>Properties window</u>. Note that if this cell size differs greatly from the cell size used to create the visualization layers generated by a <u>Scenario</u> <u>Evaluation</u> (which are set in the <u>Spatial tab</u> of the <u>Element Properties</u> <u>window</u>), the visualization layers may not overlay the scenario correctly. For a discussion of optimal cell size to be used for a planning project, see the <u>Determining Grid Cell Size</u> topic.
- 5. Select a layer to be added to the scenario from the drop-down list in the Layer field, or by using the ArcCatalog button. Values in the drop-down list are determined by what is in the Table of Contents (TOC), or a subset thereof (by layer type). If the ArcCatalog button is used, a Select Polygon or Raster Input window is displayed; browse to the appropriate layer, select, and click the Add button.

- 6. Select the translator(s) to be applied to the selected layer for this scenario.
  - If land use evaluations will be performed using the scenario, select the land use translator to be applied to the layer from the Land Use Translator drop-down list, or select the <Add New...> value to create a new translator, or the <Show List...> value to display all existing translators ( in order to select and modify an existing translator).
  - If policy type evaluations will be performed using the scenario, select the policy translator to be applied to the layer from the **Policy** 
     Type Translator drop-down list, or choose the <Add New...> or

     Show List...> values as described above.

The box below the drop-down list will display information on the selected translator.

same same highly reading	Baseline				0K.
Scenario Description			8	Defines Land Use     Defines Policy Type	Cancel
ell size (for conversion) 500 ac	res 😥			in constructive 🔽	Help
syer	Component	Land Use	Policy		
eveloped_Land 💌 🔊					
and Use Translator					
eveloped Land					
anslate all layer contents to faintained Primarily for forking/Occupied Natural					
olicy Type Translator					
evelopment 💌					
ansiate all layer contents to Inrestricted from conversion to gher intensity uses"					

If a selected translator was defined on the basis of attributes that are not contained in the layer, the following message may be displayed:

Modify Translator?	
The selected layer contains some attribute value combinations that cannot be translated by the selected translator. Choose OK to modify this translator or Cancel to select a differ OK Cancel	ent translator.

Click **OK** to edit the translator to add translations for the attributes that are lacking; otherwise, click **Cancel** to choose another translator.

7. When the selection of either or both translators for the layer has been completed, decide whether the land use layer overrides other land uses or whether it is a co-occuring land use using the Add Override or Add Combine buttons respectively (See Define scenarios using Vista combine and override functionality for more information). Click the Add Layer button to add the layer, along with the selected translator(s), to the Scenario Layers grid.

Scenario Name Napa County	Baseline			OK OK
Scenario Description	es 😥		×	Defines Land Use     Cance     Defines Policy Type     Help
ayer	Component	Land Use	Policy	
varcels 💌 🔊	🖂 🞑 (Combined)	(	(	
and Use Translator	Darcels	Low-density develo	pment Statutory enforce	ed land use plan
ouses 🔹	Deneaded	Card Crantown species (	conceptioned ind	in correction to higher memory uses
Vorking/Occupied Natural				
ranslate all layer contents to Statutory enforced land use plan"				

8. Continue the process of selecting layers, specifying translator(s) for them, and then adding them to the grid as desired for the scenario. Note that the same layer can be reused in the scenario, as long as the associated translator(s) are different each time. Similarly, the same translator can be reused in the scenario, as long as the layer(s) to which it is applied are different each time.

Note: It is important to include the boundary layer specified for the project in every scenario, with all features of both the Land Use and Policy Type attributes translated to the single value "Unknown." If such translators have not yet been created, use the **<Add New...>** value in both the Land Use and Policy Type Translator drop-down lists to create new translators to accomplish this (as described in step 6 above). Including the project boundary layer with these translations in all scenarios will insure that no area within the project boundary will fall out as "unspecified" in a <u>Scenario Evaluation</u>.

Scenario Name Napa County B	aseline				0K
Scenario Description			-	Defines Land Use     Defines Patient Time	Cancel
ell size (for conversion) 500 acres	ı 😥			-	Help
ayer	Component	Land Use	Policy		
eveloped_Land 💌 🔊	🖂 💽 (Combined)	(			
and Use Translator	Developed_L	and Unknown specific working	g/o Unrestricted from	conversion to higher intensity uses	
eveloped Land	10mbe/f	Low-density development	Unrestricted from	d land use plan conversion to higher intensity uses	
alicy Type Translator					
olicy Type Translator evelopment metalate all layer contents to phereintensity uses"					
olicy Type Translator evelopment Instatuted from conversion to gher intensity uses"					

9. Use the up and down arrow buttons to change the order of layers in the grid as needed to ensure that LUI and/or PT attributes for overlapping areas are obtained from the layer representing the dominant policy. Because data is processed beginning with the first layer in the list, then the second, third, and so forth, each layer takes precedence over (i.e., modifies) the layer directly below it. Thus, layers should be sequenced so that those representing dominant policies (or those that are not subject to such policies) are placed higher than subordinate layers. In almost all cases, the dominant layer in a planning region should be a converted lands layer, since changes in policy will rarely result in making such lands immediately compatible with biodiversity.

**Note:** The project boundary layer in which all features are translated to LUI and PT values of "Unknown" should always be positioned at the bottom of the list, that is, as the "base" layer.

- 10.To delete a selected layer, use the **X** button.
- 11.To close the window and save the developed scenario click **OK**; otherwise, click **Cancel**.

The Scenario Properties window can be used to edit existing scenarios, for example, in cases when data sources have been changed in the project after scenarios were first defined. This window can also be used to define a new scenario using an existing one (e.g., the baseline scenario). However, the existing scenario must first be copied using the **Copy** button on the <u>Scenario List</u> <u>window</u> before being renamed and modified in the Scenario Properties window. Making changes to the name and other information for an existing scenario rather

than to a copy will result in actual modifications to the original scenario instead of a separate, new scenario.

Typically the baseline scenario is first defined, next copied, and then the copy modified (as described below) to define other scenarios, although any scenario can be used as the basis for a new one.

#### Edit an existing scenario:

 Select the scenario to be edited, or the copy of a scenario to be used for defining a new one, from the list on the <u>Scenario List window</u> and click the **Properties...** button, or select the scenario from the NatureServe Vista Table of Contents (TOC), right-click, and choose **Scenario Properties...** from the context window. The resulting properties window displays the scenario.

In cases when data sources have been changed in the project after the scenario was originally defined, the following message may be displayed:

Warning
Some of the layers contained in this scenario are no longer associated with valid data sources. In the table, those layers are prefixed with a " in their name. Repair the scenario by removing those layers and adding them back again based on a valid data source. OK

In such cases, click **OK**; edit the scenario by removing the layers lacking data sources and then redefining the scenario so that the layers utilized have valid sources.

2. Edit the scenario using the processes described above for defining a new scenario as guidelines.

If the type of translator (i.e., land use or policy type) is changed, the following message may be displayed:

Reset Translator Values?		
This change will reset all of the "Ti Do you want to continue? OK	ranslate To" values in t	he translator.

Click **OK** to continue with the revision and the previously assigned values for attributes will be deleted; otherwise, click **Cancel**.

In cases when the newly specified layer is lacking attributes previously defined for the translator, the following message may be displayed:



Click **OK** to continue with the revision and the previously assigned values for attributes will be deleted; otherwise, click **Cancel**.

In cases when a translator cannot translate all of the attributes in the newly specified layer, the following message may be displayed:

Error	
The layer "zoning_def" can no longer be translated by the translator "_Zoning_LU".	
Edit the translator using this layer to define the missing translations.	
Llose	Details

In such cases, click **Close** to cancel the process, or **Details** to view information on the error.

3. To close the window and save the edited scenario click **OK**; otherwise, click **Cancel**.

If **OK** was clicked to save the revised scenario, one of the following messages may be displayed:

Scenario Update	
The inputs to this scenario have changed so that i land status layers will now be recalculated. OK	the

Click **OK** to continue with the revision, and layers in the scenario will be recalculated; otherwise, click **Cancel**.



Click **OK** to refresh the Scenario Evaluations that utilize the scenario; **No** if evaluations should not be refreshed; otherwise, click **Cancel**.

### SITE ANALYSIS LIST WINDOW

The **Site Analysis List** window is displayed by selecting **Lists >Site Analysis List** from the NatureServe Vista menu. This window lists all of the analyses in the project, specifically <u>Conservation Value Summaries</u> and/or <u>Scenario Evaluations</u>, that can be examined in detail using the Site Explorer tool. In order to be included in this list, a site layer must be specified for the analyses. See the <u>Site</u> <u>Analyses</u> section for more detailed information on the use of Site Explorer.

😪 Site Analysis List			
Name	TypeName	Def.	
Element Richness	Conservation Value Summary		Explore
Riparian-Serpentine Value	Conservation Value Summary		
Rarity evaluation	Scenario Evaluation		
			Report Help Close

### **Button functions:**

- **Explore...** displays the <u>Site Explorer window</u> with data from the analysis that is selected.
- **Report** displays the report for the selected analysis. See the <u>Reports</u> section for more details on Conservation Value Summary and Scenario Evaluation reports.

**Help** opens the on-line documentation.

**Close** closes the window.

### Columns displayed:

Name - name of an analysis that can be evaluated using Site Explorer tool.

- **TypeName -** type of analysis, specifically Conservation Value Summary or Scenario Evaluation.
- **Def.** (Default) checkbox used to designate an analysis as the default displayed in the Site Explorer window.

# SITE EXPLORER WINDOW

The **Site Explorer** window is used to evaluate the conservation properties of a specified site or set of sites that are of interest, with functionality and results that differ depending on the type of Vista analysis that is examined, specifically a <u>Conservation Value Summary</u> (CVS) or <u>Scenario Evaluation</u>). When used for a CVS, the Site Explorer window displays details on the conservation value for the site selection, along with information on the contributing biodiversity elements present on the selection. For a Scenario Evaluation, the Site Explorer tool provides data on the land use and/or policy types for the site selection along with detailed information on elements occurring on the selection in terms of conservation goals achieved, and enables the user to examine the effects on goal achievement if alternative land statuses are used.

The Site Explorer window can be opened several ways:

- Clicking the **Explore...** button on the <u>Site Analysis List window</u> will display the Site Explorer window with data from the analysis (CVS or Scenario Evaluation) that is selected.
- Right-clicking on a CVS or Scenario Evaluation displayed on the NatureServe Vista tab of the Table of Contents and selecting **Site Explorer...** from the resulting menu will display the Site Explorer window with data for that analysis.
- Selecting **Explore Sites...** from the NatureServe Vista menu will display the Site Explorer window with data for the analysis marked as the default in the Site Analysis List window.
- Clicking the button on the NatureServe Vista toolbar will open the Site Explorer window with data for the analysis marked as the default in the Site Analysis List window.

[ <u>Name of selected analysis</u> ] [Type of analysis]	Selection	n Attributes	- Options Help
Site Layer [Name of site layer]			Repor
Element Name	Total	Viable Area	% Viable

### **Button functions:**

- **Options...** displays the <u>Site Explorer Options window</u> to set the attributes (columns of data) to be displayed for elements and the site selection.
- Help opens the on-line documentation.
- **Report** displays the report for the attribute data resulting from the exploration. See the <u>Reports</u> section for more details on Site Selection reports.

### Explore sites related to a Vista analysis:

The basic process for exploring sites related to a CVS and a Scenario Evaluation is the same. Additional functionality is provided when evaluations are explored, permitting the user to examine the effects on element goals caused by altering land uses and/or policy types for the site selection, and then save the results as new scenarios for use in Scenario Evaluations.

The process for exploring either a CVS or a Scenario Evaluation is described below. Following the process steps that are common to both types of analyses is a description of <u>how to evaluate alternative land statuses for a Scenario</u> <u>Evaluation</u>.

1. Open the Site Explorer window for the desired analysis using one of the methods described above.

Rarity Weighted - with confidence	Selecti	ion Attributes	- Options Help
Conservation Value Summary ite Layer parcels	-		Веро
lement Name	Total	Viable Area	% Viable

- Click the **Options...** button to set the attributes to be displayed for elements and the site selection in the Site Explorer window for the analysis. See the <u>Site Explorer Options window</u> for details on the process for selecting element attributes.
- 3. Using the Site Explorer pointer, select one or more land units in the site layer (parcels in this example) to be examined, or choose the desired site from the Site Layer drop-down menu (populated only if a site attribute has been specified on the Site Explorer Options window). Holding the button while selecting sites with the pointer will permit multiple sites to be considered together. The pointer can also be dragged to define a rectangle to indicate multiple sites to be examined as a set. To deselect units, click outside of the area included in the analysis, or select one or more different sites to be explored.

Data for the identified site selection will be displayed in the Site Explorer window.

Rarity Weighted - with Conservation Value S Site Layer parcels FID	<u>h confidence</u> Summary	•	Selection FID: 0 FID: 1	) Attributes		Options	Help Report
Element Name	Total	Viable	Occ	Viable Area	% Viable		Selection Avg
Northwestern Pond T	1 occ's.; 29 sq. mi.				100% oc	c's; 100%	0.49
Bald Eagle	2 occ's.; 5.1 sq. mi.				50% occ	's; 98%	0.04
Napa False Indigo	4 occ's.; 98 sq. mi.				100% oc	c's; 100%	0.25
Carlifornia Freshwate	3 occ's.; 1 sq. mi.				100% oc	c's; 100%	0.01
Napa Blue Grass	1 occ's.: .7 sa. mi.				100% oc	c's; 100%	0.09

Attribute definitions that will describe briefly what the column data represent can be found in the topics <u>Element Inventory Data for a CVS</u> <u>Exploration</u> and <u>Element Inventory Data for a Scenario Evaluation</u>.

#### Back to process steps

#### <u>above</u>

#### Evaluate alternative land statuses and their effects on element goals:

Once the Site Explorer window has been opened and sites selected for a Scenario Evaluation, the functionality related to evaluation of alternative land uses and policy types can be utilized, as described below.

Rarity evaluation		Selection Attributes FID: 10874	Selection Attributes FID: 10874		
Scenario Evaluation Site Layer parcels		FID: 10921	=		Report
FID	<u>.</u>	FID: 10929	<u> </u>		More >>
Element Name Co	ompatible Area	% Compat	Protected Area	% Prot	
Northwestern Pond Tur		100% occ's; 43.4%		100% occ's,	41.9%
Bald Eagle		100% occ's; 89.8%		100% occ's;	89.8%
Napa False Indigo		75% occ's; 28.9% area		50% occ's; 14.7% are	
California Freshwater S		33.3% occ's; 12.8%		0% occ's; 0	% area
Napa Glue Grass		100% occ's; 43% area		100% occ's;	43% area

Click the **More>>** button to expand the window to display composition details for the scenario used for the evaluation, including the land status(es) assigned to the layer(s) that comprise that scenario.
Rarity evaluation			Selection Attrib FID: 10874	outes	~	Options	Help
Scenario Evaluation Site Layer parcels			FID: 10921		=		Report
FID		•	FID: 10929		<u> </u>		More >>
Element Name	Compatible Area	i)	% Compat		Protected Area	% Prot	
Northwestern Pond Tur			100% occ's; 43.	4%		100% occ	s; 41.9%
Bald Eagle			100% occ's; 89.	8%		100% occ	c's; 89.8%
lapa False Indigo			75% occ's; 28.9	% area		50% occ's	s; 14.7% area
California Freshwater S		33.3% occ's; 12.8%		0% occ's;	0% area		
Napa Glue Grass			100% occ's; 43%	% area		100% occ	s; 43% area
Scenario Composition Layer		Land Us	e	Policy Ty	pe	sq. meter	Apply
slope_50_or_more		Unknow	n	Land use	e restricted by re	3500	Undo
ExistingProtected Developed_Land		Biodiver General	sity conservatio urbanization: h	Land use Unrestric	e restricted by re ted from conver	142000 · 28500 ·	Review
		-		1	the second s	1	and the second sec

### Button functions for the Scenario Composition portion of the Site Explorer window:

- **Apply** changes land use statuses to those selected in the **Override** fields.
- **Undo** returns any land statuses changed by "Override" values back to their original statuses.
- **Review...** opens a <u>Site Change List window</u> used to modify statuses for individual layers.
- **Save** opens a <u>Save Changes to Shape File window</u> to capture the modified layers and land statuses as a shape file.

### **Response attribute functionality**:

Provided the **Response** attribute is included in the site exploration and displayed as a column, selecting a single row in the Scenario Composition portion of the Site Explorer window will display each element's specific response to the land use in that row.

# 1. Change land use status(es)

Using the Scenario Composition portion of the Site Explorer window, select a different land use and/or policy type to be applied to scenario layers by selecting value(s) from the appropriate **Override** drop-down list(s) and clicking **Apply**.

Laver	Land Use	Policy Type	sa, meter	Apply
slope_50_or_more	Low intensity working I	Land use restricted by re	3500	110.00
ExistingProtected	Low intensity working I L	and use restricted by re	142000	Undo
Developed_Land	Low intensity working I t	Inrestricted from conver	28500	Review

The land status value(s) selected in the **Override** field(s) will be applied to the layers that comprise the scenario used for the Scenario Evaluation. Any resulting changes to the element attribute data for the site exploration will change accordingly, as shown in the example below (compared with the initial results, above).

Rarity evaluation			Selection Attrit FID: 10874	outes	~	Options	Help
Scenario Evaluation Site Layer parcela	1 S		FID: 10921				Report
FID		•	FID: 10929		<u> </u>		More >>
Element Name	Compatible Area		% Compat		Protected Area	% Prot	
Northwestern Pond	Tur		100% occ's; 0%	area		100% occ	c's; 0% area
ald Eagle		50% occ's; 0.1% area		50% occ's; 0.1%			
Napa False Indigo			25% occ's; 0.1% area		25% occ's; 0.1%		
California Freshwater S			0% occ's; 0% ar	ea		0% occ's;	: 0% area
Napa Glue Grass			100% occ's; 0.2% area		100% occ	c's; 0.2%	
Scenario Compositior Layer	1	Land U	se	Policy Typ	be	sq. meter	Apply
slope_50_or_more		Low int	ensity working I	Land use	restricted by re	3500	Undo
ExistingProtected		Low inte	ensity working l	Land use	restricted by re	142000	UTIOU
		Low int	ensitu working	Unrestrict	ed from conver	28500	Review
Developed_Land		LOW III	choicy montaing r	omesaice	og nom comor		10000000000

2. Review land status changes

Click **Report** to display the Site Selection report showing the effects of the alternative land status(es) on element attributes and goal achievement. See the <u>Reports</u> section for more details on Site Selection reports.

If desired, click **Review...** on the Site Explorer window to display the Site Change List window, which lists all layers that have modified land status(s) resulting from any override values selected in the Site Explorer window. Modify the change list if desired using the buttons provided on the window, described below.

Site Cha	ange List			
Id	Land Use	Policy Type	FID	ок
6	Low intensity working la	Land use restricted by re	10874	
5	Low intensity working la	Land use restricted by re	10921	Cancel
4	Low intensity working la	Unrestricted from convers	10929	
3	Low intensity working la	Unrestricted from convers	10922	Bemove
2	Low intensity working la	Voluntarily protected	10876	
1	Low intensity working la	Land use restricted by re	10881	Undo
0	Low intensity working la	Statutory enforced land u:	10922	

# Button functions for the Site Change List window:

**OK** saves any revisions to the list of land use status changes.

- **Cancel** closes the window without retaining any revisions made to the land status change list.
- **Remove** removes a selected layer (row) with modified land status values from the list. As a result, this layer will now be displayed in the Scenario Composition part of the Site Explorer window with its original land status(es); that is, the land status(es) in effect before any override values were specified.
- **Undo** restores a layer removed from the Site Change List window back to the list, again with the land status modified by override values.

### 3. Determine optimal land statuses

Repeat the process of selecting new land status(s) for the layers in the site exploration by changing override value(s), and reviewing and accepting any values (steps 1 and 2, above) that result in desirable changes to element goal achievement.

### 4. Save alternative scenario layers

Once a combination of land statuses in the site exploration is deemed to be acceptable/useful, use the **Save...** button in the Scenario Composition portion of the window to display the **Save Changes to Shape File** window. Designate a folder and file name for the location of the saved data, and click **Save**.

Save Changes t	o Shape File				? 🔀
Save in:	DC 🔁		•	+ 🗈 💣 📰+	
My Recent Documents Desktop	GIS				
My Documents					
My Computer					
	File name:	I.		<b></b>	Save
Places	Save as type:	Shape file (*.shp)			Cancel

The saved shape file and associated land status data can then be used to <u>define new scenarios</u> for use in Scenario Evaluations.

# SITE EXPLORER OPTIONS WINDOW

The **Site Explorer Options** window is displayed by clicking the **Options** button on the <u>Site Explorer window</u>, and is used to set attributes related to the element and site information displayed for a particular analysis (i.e., a <u>Conservation Value</u> <u>Summary</u> (CVS) or <u>Scenario Evaluation</u>).

#### Set options:

#### **ELEMENT DETAILS TAB INPUT**

Site Analysis Site layer	Rarity evaluation parcels		
Site selection attribute	FID	•	
Element Details Site Att	ributes		
Available Columns		Selected Columns	
Selection Selection Average CV Selection Minimum CV Goal Viable % Viable Selection Viable Selection %Viable Chart: Viable Occurren Chart: Viable Area Compatible % Compatible % of Goal: Compatible	ces	Total Chart: Protected Area % Protected Response	<ul> <li><b>a</b></li> <li><b>b</b></li> </ul>
Number of occurrences	intersecting the site sele	ection and their area within the sele	ction

 Indicate the attributes (i.e., columns) of data to be displayed for elements that occur in the site selection, using the right arrow button to move one or more highlighted attributes from the **Available Columns** list to the **Selected Columns** list, and the left arrow to remove attribute(s) from the set to be displayed. The up and down arrow buttons can be used to set the order for the attributes to be displayed in the <u>Site Explorer window</u>. While an attribute is selected, a brief description for the attribute is displayed near the bottom of the tab. A complete list of attributes and their definitions can be found in the topics <u>Element Inventory Data for a CVS Exploration</u> and <u>Element Inventory Data for a Scenario Evaluation</u> <u>Exploration</u>.

#### SITE ATTRIBUTES TAB INPUT

šite Analysis šite layer	Rarity evaluation parcels	
ite selection attribute	FID	•
Element Details Site Atl	ibutes	
Available Attributes	Selected Attribu	ites
ASMT LandUse1		*
Use these settings for	all scenario evaluation analyses	

- Select an attribute from the Site selection attribute drop-down list near the top of the window to be used to select land units for Site Explorer. The values for this attribute will then be displayed in the Site Layer drop-down list on the <u>Site Explorer window</u>.
- 3. Indicate the attribute(s) to be displayed for the site(s) selected in the Selection Attributes box, using the right arrow button to move one or more highlighted attributes from the Available Attributes list to the Selected Attributes list, and the left arrow to remove attribute(s) from the set to be displayed. The up and down arrow buttons can be used to set the order for the attributes to be displayed in the Site Explorer window.
- 4. To use the set of attributes specified on both the Element Details and Site Attributes tabs as the default for all site explorations of Conservation Value Summaries or Scenario Evaluations, indicate so using the checkbox near the bottom of the window.
- 5. To close the window and save any changes made to the attribute lists click **OK**; otherwise, click **Cancel**.

# **TRANSLATOR LIST WINDOW**

The **Translator List** window is displayed by selecting **Lists Translator List** from the NatureServe Vista menu. This window lists all the translators that have been created for land use and protection layers in the project, which are used for <u>Scenario Evaluations</u>.

😸 Transla	itors List		
Name	Description	Туре	
Agricultural U	lse	Land-use Intent	New
			Properties
			Delete
			Export
			Help
			Close

### **Button functions:**

- **New...** displays a new <u>Translator Properties window</u> that can be used to develop a new translator for a land use or protection layer to be imported into the project.
- **Properties...** displays the Translator Properties window showing details and allowing edits to the translator selected in the list.
- **Delete** deletes the translator selected in the list.
  - A **Confirm Delete** window is displayed before the deletion is implemented.

A **Cannot Delete** window is displayed in cases when the translator is referenced by another item used in scenario evaluations, as shown in the following example.



**Import...** opens a browse window to locate a translator (developed in another project) to be imported into this project.

**Export...** opens a browse window to find the desired location to place a copy of the selected translator so that it can be imported into another project.

Help opens the on-line documentation.

**Close** closes the window.

### Columns displayed:

Name - name of the translator.

**Description -** description of the translator, if any.

**Type** - type of translator, Land-use Intent or Policy Type.

# **TRANSLATOR PROPERTIES WINDOW**

The **Translator Properties - <New>** wizard is displayed by clicking the **New...** button on the <u>Translator List window</u>. The new properties wizard is used to create a translator used to translate land use/management or policy practices layer into land status types, specifically land use intent (LUI) categories or policy types (PTs) utilized by Vista in <u>Land Use and Conservation Scenario Evaluations</u>. See the <u>Creating Translators</u> section for more detailed information on the development and use of translators for importing scenarios. For detailed descriptions of Vista land use statuses, see <u>Appendix F</u> for LUI categories, and <u>Appendix G</u> for PT. The Translator Properties wizard consists of a series of screens for recording specific information that defines the new translator.

Translator Properties -	<new></new>
<b>Create a new land status</b> A translator translates a NatureServe Vista in ana	E <b>translator</b> layer's features to the land status attributes used by the alysis.
Translator Name Translator Description	
	Translator Type C Land Use C Policy Type
	< Back Next > Cancel Help

Note that at any time during the process of creating a new translator, the previous step in the process can be revisited (and data changed, if desired) by clicking the **<Back** button, or the action can be canceled altogether by clicking the **Cancel** button.

### Create a translator:

- Specify a name for the new translator in the **Translator Name** field. The <**New>** on the window title will change to the name of the new translator as the entry is typed in.
- 2. Enter a brief description of the translator in the **Translator Description** field, if desired.
- Indicate whether the translator will assign land use or policy types using the appropriate Land Use (the default) or Policy Type radio button. Click Next>.

Create a new land status A translator translates a NatureServe Vista in an	<b>translator</b> layer's features to the land status attributes used lysis.	by the
Translator Name Translator Description	Agricultural Use	<u> </u>
	Translator Type C Land Use C Policy Type	
	Prot Newton I Come	a 1 uas

- 4. Indicate, using the appropriate radio button, whether the translator will 1) assign a single Vista land status (i.e., LUI or PT) for the entire group of land use categories or policy types in that layer (the default), or 2) assign an individual Vista type for each of the different land use categories or policy types (i.e., translate all features based on attribute values). Generally, option 1 is most useful for single purpose layers (such as a stream setback regulation), while option 2 is useful for general land use and zoning layers that have different land uses and perhaps policies for specific areas/zones within the layer.
- 5. If the Translate all features to a single land status radio button was chosen, select the appropriate land status type to be used for all features. The most sensitive elements should be used to determine the single value to be assigned for this option. However, this has the effect of reducing the precision of the compatibility assessment for less-sensitive elements. Element-specific response requires greater information but increases the precision of the analysis and flexibility for the client to meet element conservation goals in a variety of land use types. Click Next>, and then Finish to complete the new translator. Disregard the remaining steps in the process.
- 6. If the **Translate features based on attribute values** radio button was chosen, click **Next>**.
- 7. Select the layer to be used for developing the translator from the dropdown list in the **Build translator based on layer** field, or by using the
   ArcCatalog button. Values in the drop-down list are determined by

what is in the Table of Contents (TOC), or a subset thereof (by layer type). If the ArcCatalog button is used, a Select Polygon Input window is displayed; browse to the appropriate layer, select, and click the **Add** button.

Translator Properties - Agricu	ıltural Use			
Select Attributes Choose a representative layer of attributes in the layer that are re	on which to bas elevant to the tra	e the translator anslator.	then select those	Ş
Build translator based on layer	ag_land		-	٨
Attributes	PARCELS AGRICPR ASSDLANI ASSDOTH TOTAL	_LI / D IR		
	LANDUSE     DOCDATE     PRICE			<b>.</b>
	< Back	Next >	Cancel	Help

8. A list of attributes for features in the selected layer is displayed in the **Attributes** box. Indicate the feature attribute(s) to be used to create the translator, i.e., those that are most relevant to land use/management or policy practices, by placing a check in checkbox next to the attribute(s). Click **Next>**.

ranslator Properties - Agricultural Us	e		
Translate Attribute Value Combinations Based on the relevat attributes you selecte values can now be translated to a single lar	ed, each unique combination of attribute	Y	
LANDUSE	Translate To		
AGR,LAND CONTRACT,NON-VINEYARD	Low intensity working landscape		
AGR,LAND CONTRACT, VINEYARD	Intensely managed working landscapes		
AGR,NON-VINEYARD CONTRACT,MISC	<none></none>		
AGR,NON-VINEYARD CONTRACT,W/1	<none></none>		
AGR,NON-VINEYARD CONTRACT,W/2	<none></none>		
AGR,NON-VINEYARD CONTRACT,W/3	<none></none>		
AGR,NON-VINEYARD CONTRACT,W/4	<none></none>		
AGR,NON-VINEYARD CONTRACT,W/5+	<none></none>	-	
		- 10	
< Back	Next > Cancel Help	>	

9. For each type or combination of types listed in the attribute column (in the above example, LANDUSE), select a single translated status from the drop-down menu provided in the Translate To column. Status types displayed in the drop-down menu are determined on the basis of the kind of translator indicated in step 3 above (i.e., LUI or PT), and consist of a single entry for each different type of the attribute/attribute combination selected in the previous step. Every attribute/combination must have a land status selected in order to complete the translator; land status types that are unchanged from the default <None> entry will be flagged <sup>①</sup> as needing an assigned LUI or PT. Any specific interpretations employed for assigning a particular LUI or PT should be documented.

**LUI translators**: Select the Vista type that best describes the unique land use for each attribute or attribute combination. Note, however, that the selected LUI type must be from the lowest (i.e., minor category) level; selection of a major category type will be flagged <sup>(1)</sup> as an invalid entry. Assigning the major category "Unknown" will result in the assumption of "incompatible" in analyses that utilize LUI compatibility information.

**PT translators:** Select the Vista type that identifies the appropriate policy practice for each attribute or attribute combination. The assigned PT indicates the mechanism that guides the implementation of an LUI designation, including processes that prevent or allow land uses of greater intensity. Because some of the policy types are fairly dynamic (e.g., zoning), a conservative approach should be used in assessing whether a PT category is likely to permit LUI changes. Assigning the category "Unknown" will result in the assumption of "unprotected" in analyses that utilize PT information.

Keystrokes that can be used to navigate through the list of land status types for data entry include the following:

- Clicking on an entry in the Translate To column will display a dropdown menu
- Clicking <Tab> twice will move the cursor to the next item and highlight it
- Clicking <Shift><Tab> will move the cursor to the previous item
- The down and up arrow keys can be used to move down or up, respectively, the list of types in the drop-down menu
- 10.Once every attribute has an assigned Vista type, click **Next>**, and then **Finish** to complete the new translator.

Note: It is important to create both a LUI translator and a PT translator that translate all features to the single value "Unknown." These will be used to translate the boundary layer for the project, which should be included in all scenarios to insure that no area within the project boundary will fall out as "unspecified" in a <u>Scenario Evaluation</u>.

### Edit a translator:

- 1. Select the translator from the list on the <u>Translator List window</u> and click the **Properties...** button. The resulting properties wizard displays the translator.
- 2. Edit the translator using the processes described above for creating a new translator as guidelines.
- 3. To close the window and save any changes made to the translator click **OK**; otherwise, click **Cancel**.

Note that if the translator type, that is **Land Use** or **Policy Type** (originally selected in step 3 of the creation process) is changed, the following message will be displayed:

Reset Translator Values?	
This change will reset all of the "Tr Do you want to continue? OK	anslate To" values in the translator.

Clicking **OK** will continue with the change, and an entirely new set of land status types will need to be selected for the attributes (as described in step 9 above); clicking **Cancel** will leave the translator type unchanged.

Note also that if the set of attributes associated with the translator is changed, the following message will be displayed:

Remove Attribute/Value Con	ibinations?			
Modifying the attributes list will re Do you want to continue?	move all attribut	e/value combinatio	ons associated with the translator.	

Clicking **OK** will continue with the change, and an entirely new set of land status types will need to be selected for the attributes (as described in step 9 above); clicking **Cancel** will leave the attributes used for the translator unchanged.

Note also that if the layer to be used for the translator, selected in the **Build translator based on layer** field (step 7, above) is edited, the following message to confirm the change may be displayed:



Clicking **OK** will continue with the edit, and an entirely new set of land status types will need to be selected for the new attributes (as described in step 9 above); clicking **Cancel** will leave the original layer, along with the status types assigned to its attributes, unchanged.

Note also that if the translator is edited such that the full set of attributes previously addressed by the translator will no longer be handled, the following message will be displayed:

Varning	×
Not all of the attribute permutations previously handled by this translator will be handled if the translation is save Any scenarios which have been translated using this translator can not be refreshed without modification. Are you sure you want to continue?	:d,
OK Cancel	

Clicking **OK** will continue with the edit, and scenarios that were defined using the translator will need to be modified; clicking **Cancel** will leave the set of attributes associated with the translation unchanged.

# VALUE RANGE FACTOR FORM

This window is accessed by clicking New Factor... from the Edit Condition Model Properties window.

😸 Value Range Factor Form	
Value Ran	ge Condition Factor
Value Range Factor Name	(New Value Range Factor) 📃
Lower Bound Upper Bound Condition Loss (0-1)	(Edit Value Range Factors) (New Value Range Factor) NSPECT Lead NSPECT Nitrogen NSPECT Phosphorous NSPECT Total Suspended Solids NSPECT Zinc
ОК	Cancel

See <u>Creating value range factors</u> for instructions on data entry for this window.

# VISTA ELEMENT IMPORT WINDOW

The **Vista Element Import** window is displayed by clicking **Project > Import Element Properties from Web Service...** from the Vista menu, and is used to import properties from multiple elements using NatureServe Web Services.

nport Elements from a WebServic: Step 1: Select Elements to import fro	e <b>into your Vista Project</b> om a WebService	
Web Service: ps://services.natureserve.org/idd	Move Available Elements to Selected Items list for import	View Elements by © Common Name © Scientific Name
Nation: CA-Canada 💌 State: AB-Alberta 💌	Available:	Selected:
Name Search		
	Clear All	Clear All

# Import element properties using a web service:

- 1. If the web service location is not populated automatically, enter: https://services.natureserve.org/idd
- 2. Select the desired values from the Nation and State drop-down menus.
- 3. Using the Name Search field, enter the name or part of the name of an element whose properties are to be imported, and click Search Service. Note that either common or scientific names can be used in the search. Note also that the wildcard "r;\*" is permitted for searches, but caution is recommended as its use may result in a longer search time before results are returned.

When the search has completed, the results will be displayed as a list of species in the **Available:** field. The listed species can be displayed by using **Common Name** or by **Scientific Name** by selecting the appropriate radio button in the **View Elements By** area.

port Elements from a Wel Step 1: Select Elements to	Service into your Vista Project import from a WebService	
Web Service: ps://services.natureserve.or	g/idd Move Available Elements to Sele	cted Items list for
Nation: US-United States State: CA-California	Available:     Bigtree Shoulderband Napa blue grass Napa blue curls Napa false indigo Napa false indigo	Selected:
Name Search napa Search Service	Napa western flax no common name	
	Clear All	Clear All

4. Select one or more elements to be imported, and click the button. Multiple elements can be selected together using <Control>-Click, and a range by using <Shift>-Click.

nport Elements from a WebServic Step 1: Select Elements to import fro	e intoyour Vista Project om a WebService	
Web Service: ps://services.natureserve.org/idd	- Move Available Elements to Selected Items list for import	View Elements by  C Common Name  C Scientific Name
Nation: US-United States	Available:	Selected:
State: CA-California <u></u> Name Search napa Search Service	Bigtree Shoulderband Napa blue grass Napa false indigo Napa false indigo Napa omatium Napa western flax no common name	⇒
	Clear All	Clear All

Elements selected for import will be displayed in the **Selected:** list.

🔜 Vista Element Import			
Import Elements from a WebService i Step 1: Select Elements to import from	ntoyour Vista Project a WebService		8
Web Service:	Move Available Elements to Selected Items list for import	View Elements by Common Name C Scientific Name	]
Nation: US-United States State: CA-California Name Search Inapa	Available: Bigtree Shoulderband Napa Iomatium no common name	Selected: Napa blue grass Napa bluecuris Napa false indigo Napa western flax	-
Search Service	Clear All	Clear All	
		< Back. Next > Cancel He	elp

5. Repeat the process from step 4 until all the elements in the **Available:** list that are to be imported have been moved to the **Selected:** list.

To de-select an element from the list to be imported, click on the

element in the **Selected:** list and use the 📛 button to move the element back to the **Available:** list.

To re-start the selection process over at any point, click the **Clear All** button under the **Selected:** list.

6. To begin a new search for available elements, click the **Clear All** button under the **Available:** list. Repeat the search process from step 3 and then the selection process in step 4.

Web Service: ps://services.natureserve.org/idd	Move Available Elements to Selected Items list for import		View Elements by	C Scientific Name
Nation: US-United States	Available:		Selected:	
State: CA-California	Bauer's dotted-blue beautiful bluebells Blue-gray taildropper slug blue alpine phacelia blue chub Blue gendentpod oxytrope blue skullcap Boharts' blue butterfly Death Valley blue-eyed grass delicate bluecup Dtablo Caryon blue grass El Segundo blue butterfly great blue heron Hermandez bluecuts	⇒ ₽	Napa blue grass Napa bluecurls Napa false indigo Napa western flax	
	Hidden Lake bluecuits Hitchcock's blue-eyed grass			Clear All

port Elements from a WebSe Step 1: Select Elements to imp	rvice into your Vista Project ort from a WebService		<u>8</u>
Web Service: ps://services.natureserve.org/ic	Move Available Elements to Selected It import	ems list for	View Elements by      Common Name      C Scientific Name
Nation: US-United States	Available:		Selected
State: CA-California Name Search blue Search Service	Bauer's dotted-blue beautiful bluebells Blue-gray taildropper slug blue alpine phacelia blue chub blue skulicap Bohats' blue butterfly Comstock's blue butterfly delicate bluecup El Segundo blue butterfly great blue heron Hernandez bluecurls Letterman's blue grass long bluebells lotis blue butterfly Marsh's blue grass		Napa blue grass Napa bluecurls Napa false indigo Napa western flax Blue Glass blue pendent-pod oxytrope Death Valley blue-eyed grass Diablo Canyon blue grass Hidden Lake bluecurls Hitchcock's blue-eyed grass
	Mission Caryon bluecup	~	Clear All

 When the Selected: list contains all of the elements to be included for the properties import, click Next>. The data for these elements will be transferred from the web service, and a Category Info report displayed in an Element Import Form, which provides the status of assignments to <u>Category Systems</u>, specifically whether both the Element Type category and G-Rank category systems have been resolved and assigned for each of the elements.

**Note:** This Vista Element Import window has changed at this point in the process to one labeled with the same name as the <u>Element Import</u> <u>Form</u> utilized in Vista to import element properties using a shapefile rather than a web service.

Element Import Form	
Category Info Category Info	2
20 category assignments resolved.	
0 category system can't be resolved: 0 category can't be resolved. Please check them in the following list if you want to import them:	
< Back Next > Can	icel Help

8. Click **Next >**. The system will display a list of the elements transferred.

Napa blue grass         Poa napensis         Y         Edit         Add as new           Napa bluecurls         Trichostema ruygtii         Y         Edit         Add as new           Napa false indigo         Amorpha californica var. napensis         N         Edit         Ignore           Napa western flax         Hesperolinon sp. 1         N         Edit         Add as new           Blue Glass         Nesovitrea binneyana         Y         Edit         Add as new           blue pendent-pod oxytrope         Oxytropis deflexa var. sericea         Y         Edit         Add as new           Death Valley blue-eyed grass         Sisyrinchium funereum         Y         Edit         Add as new           Diablo Canyon blue grass         Poa diaboli         Y         Edit         Add as new           Hiden Lake bluecurls         Trichostema austromontanum ssp. compactum         Y         Edit         Add as new           Hitchcock's blue-eyed grass         Sisyrinchium hitchcockii         Y         Edit         Add as new	Common Name	Scienfic Name	Valid?	Edit	Action
Napa bluecurlsTrichostema ruygtiiYEditAdd as newNapa false indigoAmorpha californica var. napensisNEditIgnoreNapa western flaxHesperolinon sp. 1NEditIgnoreSlue GlassNesovitrea binneyanaYEditAdd as newolue pendent-pod oxytropeOxytropis deflexa var. sericeaYEditAdd as newDeath Valley blue-eyed grassSisyrinchium funereumYEditAdd as newDiablo Canyon blue grassPoa diaboliYEditAdd as newHitdhen Lake bluecurlsTrichostema austromontanum ssp. compactumYEditAdd as newHitchcock's blue-eyed grassSisyrinchium hitchcockiiYEditAdd as new	Napa blue grass	Poa napensis	Y	Edit	Add as new
Napa false indigo       Amorpha californica var. napensis       N       Edit       Ignore         Napa western flax       Hesperolinon sp. 1       N       Edit       Ignore         Blue Glass       Nesovitrea binneyana       Y       Edit       Add as new         blue pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	Napa bluecurls	Trichostema ruygtii	Y	Edit	Add as new
Napa western flax         Hesperolinon sp. 1         N         Edit         Ignore           Blue Glass         Nesovitrea binneyana         Y         Edit         Add as new           blue pendent-pod oxytrope         Oxytropis deflexa var. sericea         Y         Edit         Add as new           Death Valley blue-eyed grass         Sisyrinchium funereum         Y         Edit         Add as new           Diablo Canyon blue grass         Poa diaboli         Y         Edit         Add as new           Jidden Lake bluecurls         Trichostema austromontanum ssp. compactum         Y         Edit         Add as new           Hitchcock's blue-eyed grass         Sisyrinchium hitchcockii         Y         Edit         Add as new	Napa false indigo	Amorpha californica var. napensis	N	Edit	Ignore
Blue Glass       Nesovitrea binneyana       Y       Edit       Add as new         olue pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	Napa western flax	Hesperolinon sp. 1	N	Edit	Ignore
blue pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	Blue Glass	Nesovitrea binneyana	Y	Edit	Add as new
Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	blue pendent-pod oxytrope	Oxytropis deflexa var. sericea	Y	Edit	Add as new
Diablo Canyon blue grass     Poa diaboli     Y     Edit     Add as new       Hidden Lake bluecurls     Trichostema austromontanum ssp. compactum     Y     Edit     Add as new       Hitchcock's blue-eyed grass     Sisyrinchium hitchcockii     Y     Edit     Add as new	Death Valley blue-eyed grass	Sisyrinchium funereum	Y	Edit	Add as new
Hidden Lake bluecurls Trichostema austromontanum ssp. compactum Y Edit Add as new Hitchcock's blue-eyed grass Sisyrinchium hitchcockii Y Edit Add as new	Diablo Canyon blue grass	Poa diaboli	Y	Edit	Add as new
Hitchcock's blue-eyed grass Sisyrinchium hitchcockii Y Edit Add as new	Hidden Lake bluecurls	Trichostema austromontanum ssp. compactum	Y	Edit	Add as new
	Hitchcock's blue-eyed grass	Sisyrinchium hitchcockii	Y	Edit	Add as new

- 9. Review the elements and attributes that were transferred, and, if desired, perform either or both of the following:
  - For any element transferred that lacks an associated valid category, specify or modify a category system by clicking Edit and making changes on the <u>Categories tab</u> of the <u>Element</u> <u>Properties window</u> that opens;
  - Change the displayed value in the Action column using the drop-down menu property in the element list, if appropriate, as follows:
    - Add as new will import the element (not previously existing) and associated properties as a new element in the project;
    - Ignore will cause the element and associated properties to not be imported into the project;
    - Only in cases when the Action initially displayed is Ignore, selecting the additional option to Overwrite existing element will result in replacement of that element and associated attributes already existing in the project with the imported element and properties data.

Common Name       Scienfic Name       Valid?       Edit       Action         Napa blue grass       Poa napensis       Y       Edit       Add as new         Napa bluecurls       Trichostema ruggtii       Y       Edit       Add as new         Napa false indigo       Amorpha californica var. napensis       N       Edit       Add as new         Napa false indigo       Amorpha californica var. napensis       N       Edit       Add as new         Napa western flax       Hesperolinon sp. 1       N       Edit       Add as new         Blue Glass       Nesovitrea binneyana       Y       Edit       Add as new         blue pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	<b>Review elements</b> Review elements for Vista import	:			1
Napa blue grass       Poa napensis       Y       Edit       Add as new         Napa bluecurls       Trichostema ruygtii       Y       Edit       Add as new         Napa false indigo       Amorpha californica var. napensis       N       Edit       Add as new         Napa western flax       Hesperolinon sp. 1       N       Edit       Add as new         Ignore       Daytropis deflexa var. sericea       Y       Edit       Add as new         Jule pendent-pod oxytrope       Dxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium fuereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	Common Name	Scienfic Name	Valid?	Edit	Action
Napa bluecuris       Trichostema ruygtii       Y       Edit	lapa blue grass	Poa napensis	Y	Edit	Add as new
Napa false indigo       Amorpha californica var. napensis       N       Edit       Add as new         Napa western flax       Hesperolinon sp. 1       N       Edit       Add as new         Blue Glass       Nesovitrea binneyana       Y       Edit       Add as new         Jolue pendent-pod oxytrope       Dxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Death Valley blue-eyed grass       Poa diaboli       Y       Edit       Add as new         Jiablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Jidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	lapa bluecurls	Trichostema ruygtii	Y	Edit	-
Napa western flax       Hesperolinon sp. 1       N       Edit       Ignore         Blue Glass       Nesovitrea binneyana       Y       Edit       Add as new         blue pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Jidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	lapa false indigo	Amorpha californica var. napensis	N	Edit	Add as new
Blue Glass       Nesovitrea binneyana       Y       Edit       Add as new         blue pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurts       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	lapa western flax	Hesperolinon sp. 1	N	Edit	Ignore
Dive pendent-pod oxytrope       Oxytropis deflexa var. sericea       Y       Edit       Add as new         Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Caryon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	lue Glass	Nesovitrea binneyana	Y	Edit	Add as new
Death Valley blue-eyed grass       Sisyrinchium funereum       Y       Edit       Add as new         Diablo Canyon blue grass       Poa diaboli       Y       Edit       Add as new         Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	blue pendent-pod oxytrope	Oxytropis deflexa var. sericea	Y	Edit	Add as new
Diablo Canyon blue grass Poa diaboli Y Edit Add as new Hidden Lake bluecurls Trichostema austromontanum ssp. compactum Y Edit Add as new Hitchcock's blue-eyed grass Sisyrinchium hitchcockii Y Edit Add as new	)eath Valley blue-eyed grass	Sisyrinchium funereum	Y	Edit	Add as new
Hidden Lake bluecurls       Trichostema austromontanum ssp. compactum       Y       Edit       Add as new         Hitchcock's blue-eyed grass       Sisyrinchium hitchcockii       Y       Edit       Add as new	)iablo Canyon blue grass	Poa diaboli	Y	Edit	Add as new
Hitchcock's blue-eyed grass Sisyrinchium hitchcockii Y Edit Add as new	Hidden Lake bluecurls	Trichostema austromontanum ssp. compactum	Y	Edit	Add as new
			25254	STREET, STREET	
	Hitchcock's blue-eyed grass	Sisyrinchium hitchcockii	Y	Edit	Add as new

10.Once all desired changes to the elements have been made, click **Next>** to complete the element properties import process. The designated elements and associated properties will be imported into the <u>Element Properties window</u> and a final status report of the import will be shown. (In the example below, 2 of the 10 elements selected for properties import had an Action value of **Ignore**, and the remaining 8 were labeled with the **Add as new action**.)



11.Click **Finish** to close the import window.

# WEIGHTING SYSTEM LIST WINDOW

The **Weighting System List** window is displayed by selecting **Lists** • **Weighting System List...** from the NatureServe Vista menu. This window lists all the weighting systems that have been created for the project. See the <u>Weighting</u> <u>Systems</u> section for more detailed information on the development and use of weighting systems in analyses.

🐼 Weighting Sy	ystem List	
Name	Description	New 1
Rarity		New
Riparian and Serp	Riparian and Serpentine element	Properties
		Delete
		Report
		Help
		Close

### **Button functions:**

**New...** displays a new <u>Weighting System Properties window</u> that can be used to develop a new weighting system to be used in the project.

**Properties...** displays the Weighting System Properties window showing details and allowing edits to the weighting selected in the list.

**Delete** deletes the weighting system selected in the list.

A **Confirm Delete** window is displayed before the deletion is implemented.

A **Cannot Delete** window is displayed in cases when the weighting system is referenced by another item used in project analyses, as shown in the following example.

Cannot Delete	
The weighting system, "Rarity", cannot be deleted because it is referenced by the following item(s): Conservation Value Summary ("Element Richness", "	Rarity Weighted - no confidence", "Rarity Weighted - with confidence")

**Report** displays a report that describes the selected weighting system and its settings. See the <u>Reports</u> section for more details on Weighting System reports.

**Help** opens the on-line documentation.

**Close** closes the window.

# WEIGHTING SYSTEM PROPERTIES WINDOW

The **Weighting System Properties - <New>** window is displayed by clicking the **New...** button on the <u>Weighting System List window</u>. The new properties window is used to create a new weighting system that can be utilized for prioritizing elements in <u>Conservation Value analyses</u>. See the <u>Weighting Systems</u> section for more detailed information on the development and use of weightings in analyses.

Note that the Solution located next to an item can be used to record additional information related to that item (see the <u>Documentation Window</u> topic for more details).

Weighting System Properties - <new></new>	
Name Restricted	в ок
Description	Cancel
	Help
Default Weight 0.5 🚫	
Category System < None >  Apply Weights	Element Report
Element Weights	
Name	Weigh 🔺
Historic Sites	<default> 😣</default>
Important Agriculture	kdefault> 🚫
Viewsheds	<default> 😥</default>
Mediterranean California Dry-Mesic Mixed Conifer Forest and Woodland	<default> 😥</default>
Xeric Serpentine Chapparal	<default> 😥</default>
Napa Western Flax	<default> 😥</default>
Central Valley Mixed Oak Savanna	<default> 😥</default>
Mesic Serpentine Woodland and Chapparal	<default> ڬ 🔛</default>
Northwestern Pond Turtle	<default> 💋</default>
California Annual Grasslands Alliance	<default> 🗭</default>
California Coast Ranges Cliff and Canyon	<default> 😥</default>
California Mesic Chaparral	<default> 🗭</default>
Central Valley Riparian Woodland and Shrubland	<default> 🗭</default>
Coastal Closed-cone Conifer Forest and Woodland	<default> 😥</default>
Eucalyptus Alliance	<default> 😥</default>
Lower Montane Pine - Oak Woodland and Savanna	<default> 😥</default>
Mediterranean California Foothill and Lower Montane Riparian Woodlan	<default> 😥</default>
Mediterranean California Serpentine Foothill and Lower Montane Riparia	<default> 😒 💽</default>

# Create a weighting system:

- 1. Specify a name for the weighting system in the **Name** field. The **<New>** on the window title will change to the name of the new weighting system as the entry is typed in.
- 2. If the ability to edit the weighting system should be limited to members of the data development team, place a check in the **Restricted** checkbox.
- 3. Enter a brief description of the weighting system in the **Description** field, if desired.
- 4. Enter a value in the **Default Weight** field to be used in cases when a specific weight is not assigned to an element. The default value in this field is 0.5.

# *If a category system is to be used to create the weighting system, continue with step 5; if not, skip to <u>step 8</u>.*

5. From the Category System drop-down menu of existing systems, select a category system to be used in developing the weighting system. Only category systems that define weights are shown in the drop-down list, such as the default "G-Rank" system displayed in the <u>Category System</u> <u>Properties window</u> below, although the option to create a new category system (<Add New...>) or to display all existing systems (<Show List...> in order to select and modify an existing system by adding weights) are included in the drop-down list.

Category System P	roperties - G-Rank			
Name G-R	ank	Restricte	ed 🗌	OK
Description Herit	Description Heritage Ranking System for Global Rarity			Cancel
LIBI http:	//www.natureserve.org/explorer/ranking.htm		¥ _	Help
Default Category No G	ilobal Rank 💋 Default Code	Order:	20	
Categories have co	odes 🔽 Defines weighting 🔽 Defines conse	rvation goals	Displa	y Order
Categories				
Name	Description	Weight	Goal	Order 🔺
Critically Imperiled	Critically imperiled globally because of extre	1.00	100% 🚫	1
Critically Imperiled	Critically imperiled globally because of extre	1.00	100% 🚫	2
Imperiled	Imperiled globally because of rarity or beca	0.90	100% 💋	3
Imperiled(subspec	Imperiled globally because of rarity or beca	0.90	100% 🚫	4
Vulnerable	Vulnerable Vulnerable globally either because very rare 0.80		80% 🚫	5
Vulnerable(subspe	Vulnerable globally either because very rare	0.80	80% 🚫	6
Apparently Secure	Uncommon but not rare (although it may be	0.60	40% 💋	7
Apparently Secure	Uncommon but not rare (although it may be	0.60	40% 💋	8
Secure	Common, widespread, and abundant (altho 0.40		10% 🟳	9
Secure(subspecies	Common, widespread, and abundant (altho	0.40	10% 💋	10
Unranked	Global rank not yet assessed	0.30	0% 💋	11
Unranked(subspec	Global rank not yet assessed	0.50	0% 🚫	12
Not applicable	A conservation status rank is not applicable	0.20	0% 🔨	13

The advantage of using a category system is that weights can be assigned for groups of elements (e.g., all elements that are Critically Imperiled will have an assigned weight of 1.0) instead of element by element individually (e.g., weight assigned for Burrowing Owl is 0.5, weight assigned for California Black Rail is 1.0, etc.). Note, however, that regardless of whether weights are assigned to categories of elements or to individual elements, Vista applies the weightings to each element individually during analyses.

Once a category system has been selected, Category and Category Wt. columns are displayed for elements listed in the Weighting System Properties window, and the name and weight associated with the category to which each element belongs are displayed in these columns, respectively.

Weighting Syste	em Properties -	Most Rare		
Name	Most Rare		🔗 🗖 Restric	ted OK
Description				Cancel
				Help
Default Weight	0.9 🚫			
Category System	G-Rank	•	Apply Weights	Element Report
Element Weight	s		2. UZ	
Name		Category	Category W 🕤	Weighi
Napa Western Fla	<u>x</u>	Critically Impe	1.00	<default> 🚫</default>
California Freshwa	ter Shrimp	Critically Impe	1.00	<default> 🚫</default>
Napa Blue Grass		Critically Impe	1.00	<default> 🚫</default>
Napa False Indigo		Imperiled(sub	0.90	<default> 🚫</default>
Townsends Weste	ern Big-eared Bat	Vulnerable	0.80	<default> 🚫 👘</default>
Northwestern Pon	d Turtle	Apparently Se	0.60	<default> 😣 🚽</default>
Bald Eagle		Apparently Se	0.60	<default> 🚫 👘</default>
Purple Martin		Secure	0.40	<default> 🚫 🔛</default>
Historic Sites		No Global Ran		<default> 🚫</default>
Important Agricultu	<u>ire</u>	No Global Ran		<default> 🚫</default>
<u>Viewsheds</u>		No Global Ran		<default> 😥</default>
Mediterranean California Dry-Mesic		No Global Ran		<default> 🚫</default>
Xeric Serpentine Chapparal		No Global Ran		<default> 🚫 👘</default>
Central Valley Mixed Oak Savanna		No Global Ran		<default> 😣 👘</default>
Mesic Serpentine Woodland and Ch		No Global Ran		<default> 🚫 👘</default>
California Annual Grasslands Allianc		No Global Ran		<default> 💋 👘</default>
California Coast F	Ranges Cliff and Ca	No Global Ran		<default> 🚫</default>
California Mesic Cl	haparral	No Global Ran		<default> 🚫 🛛 🧉</default>

6. Determine if the weight assigned for the category system is appropriate for each element. If an alternate weight is preferred for an element, assign a specific value from 0.0 to 1.0 in the Weight column, replacing the

< default>. Clicking on an element name opens its <u>element report</u>, which can aid in setting weights. It may be useful to record the reason(s) for

specifying a certain weight by using the associated  $\bigcirc$  button to access the <u>Documentation window</u>.

7. After any specific weights have been entered for elements, click the **Apply Weights** button.

Apply to All?			
Apply the category weight to all e Select "No" if you want to apply th	ements? e category weight to or s No	nly those elements cur	rently without a weight.

The resulting "Apply to All?" window prompts the user to decide whether to replace newly entered values in the Weights column with the pre-existing weight values previously assigned to the category (**Yes**), or retain the new weight values and use existing category weights only for <default> values in the Weight column (**No**).

Skip to <u>step 9</u>.

Weighting System	Properties -	Most Rare		
Name Mo:	st Rare		🧭 🗆 Restric	ted OK
Description				Cancel
				Help
Default Weight	0.9 🚫			
Category System G-F	lank	· [	Apply Weights	Element Report
Element Weights				
Name		Category	Category W 😙	Weighl 🔺
Napa Western Flax		Critically Impe	1.00	1.00 🚫
California Freshwater S	hrimp	Critically Impe	1.00	1.00 💋
Napa Blue Grass		Critically Impe	1.00	1.00 🞺
Napa False Indigo		Imperiled(sub	0.90	0.90 🚫
Townsends Western Bi	g-eared Bat	Vulnerable	0.80	0.80 🚫
Northwestern Pond Tur	<u>tle</u>	Apparently Se	0.60	0.60 🌭 🔰
Bald Eagle		Apparently Se	0.60	0.60 🚫
Purple Martin		Secure	0.40	0.40 🚫 📃
Historic Sites		No Global Ran		<default> 🚫</default>
Important Agriculture		No Global Ran		<default> 🚫</default>
Viewsheds		No Global Ran		<default> 🚫</default>
Mediterranean California Dry-Mesic		No Global Ran		<default> 🚫</default>
Xeric Serpentine Chapparal		No Global Ran		<default> 🚫</default>
Central Valley Mixed Oak Savanna		No Global Ran		<default> 😣</default>
Mesic Serpentine Woodland and Ch		No Global Ran		<default> 😣</default>
California Annual Grasslands Allianc		No Global Ran		<default> 🚫 👘</default>
California Coast Rang	es Cliff and Ca	No Global Ran		<default> 🚫 👘</default>
California Mesic Chapa	rral	No Global Ran		<default> 🚫 🛛 🤤</default>

### To create the weighting system without using a category system:

8. Replace the <default> value in the Weight column with a value from 0.0 to 1.0 for any element that should be weighted differently than the value specified in the **Default Weight** field (in<u>step 4</u> above). Clicking on an element name and clicking the **Element Report** button opens its<u>Element Details Report</u>, which can aid in setting weights. It may be useful to record the reason(s) for specifying a certain weight by using the

associated 🤒 button to access the <u>Documentation window</u>.

9. If needed, reset to <default> any weight values for elements that should be weighted using the entry in the **Default Value** field (see step 4 above) instead by selecting the value to be changed in the Weight column and clicking either the **Delete** or **Backspace** button to remove the value. Moving to another row (using either **Enter** or the arrow buttons) will cause the now missing value to be replaced with <default>.

- 10.To save the data entered for the weighting system click **OK**; otherwise, click **Cancel**. Any elements with a <default> weight value will be automatically weighted according to the value entered in the **Default Weight** field (in <u>step 4</u> above) in any analyses.
- 11.To review details on the new weighting system, select the system on the <u>Weighting System List window</u> and click the **Report** button. Settings for the weighting system, as well as weights assigned to specific elements will be displayed. See the <u>Reports</u> section for more details on Weighting System reports.

### Edit a weighting system:

- Select the weighting system from the list on the <u>Weighting System List</u> <u>window</u> and click the **Properties...** button. The resulting properties window displays the weights defined for elements in the weighting system.
- 2. Edit the weighting system using the processes described above for creating a new weighting system as guidelines.
- 3. To close the window and save any changes made to the weighting system click **OK**; otherwise, click **Cancel**.

# LIMITATIONS

# LIMITATIONS OF THE VISTA APPLICATION

### Limitations Related to the Selection of Elements:

The initial selection of elements for consideration is a complex task that requires scientific knowledge, but must also incorporate the social values of the planning region. It should not be done hastily without education about the role the planning region plays in conserving some elements, especially the "non-glamorous" species that might otherwise be ignored. Scientific knowledge is also very incomplete, especially when it comes to lessconspicuous elements and the classification of some types of communities and ecosystems. New elements or new range extensions of elements will likely be discovered in the planning region periodically. Therefore, the act of element selection should be considered a dynamic activity that should be revisited frequently. The methods described in this section for selecting the subset of elements should be considered guidelines to be modified by local experts.

### **Limitations Related to Element Distributions:**

Note that element distribution data will rarely satisfy all criteria for completeness, accuracy, currentness, and/or precision. Therefore, the user must evaluate which criteria need to be met in order for distribution data to be categorized as acceptable for use in Vista. (See the Confidence section for further details on the types and levels of confidence associated with distributions).

Note also that in rapidly changing environments it is difficult to keep distribution data current. It is strongly advised that a system be instituted to better capture onsite observations of elements to increase the precision of the distribution database.

### Limitations Related to Viability/Integrity:

The methods described here for attributing viability or ecological integrity are meant to provide a measure that indicates whether occurrences have relatively high or low viability/integrity to be used in Conservation Value analyses. This process is not a substitute for population viability analysis (PVA) or field surveys to determine probabilities of population persistence or actual ecological quality of occurrences. The user should establish criteria that define 0.0-1.0 viability/integrity values; they may be used as relative values (as suggested in this section), or defined as probabilities of persistence calculated from a PVA.

### **Limitations Related to Confidence:**

Vista currently uses only a single net attribute of confidence per occurrence polygon or raster grid cell. Retaining all of the attributes used to calculate a net confidence value may be valuable; the confidence attributes can be accessed directly through the Environmental Systems Research Institute (ESRI) ArcView application when decisions need to be made on issues that may be sensitive to confidence type (e.g., locational precision versus assumed extirpated versus age of observation, etc.).

When the confidence attributes of elements are included in Conservation Value analyses, they have the effect of lowering the conservation values of grid cells in proportion to the confidence scores of all elements selected and occurring at any particular location. However, low confidence does not necessarily mean that the elements observed or predicted for that location are not present, but rather that characteristics of the data (e.g., age of the observation, scale of the input maps) and/or changes that have occurred at the location reduce certainty that the element is present. It is recommended that different types of Conservation Value Summaries be developed - both with and without confidence in order to evaluate its effect of lowering the value of areas that are otherwise indicated by the data to be of conservation importance. It is important to prioritize areas for near-term conservation action based on confidence in the data, however, the optimal solution for low certainty is to increase the confidence of element observations/predictions (e.g., by obtaining more current data, by using finer resolution maps).

There is inherent uncertainty based on the size of the grid cell used for mapping element occurrences (observed or modeled) in a raster format. This uncertainty is also present in the processing of raster maps for Conservation Value analyses. The larger the cell size used for mapping and processing, the less confidence there is in making decisions for management units at a finer resolution (e.g., parcels from a legal town map). Vista uses the original confidence attributes of the elements and does not recalculate confidence when analytical cell sizes are changed. See the topic <u>Determining Grid Cell Size</u> for further information on the effects of cell size on analyses.

Confidence values are based on locations where elements have been observed or predicted; there are no confidence values assigned to locations where elements are not known or predicted to occur. In other words, Vista currently does not utilize a value for confidence that a location does *not* contain an occurrence of a particular element. While such knowledge would be very useful, the guiding assumption is that predictive distributions should be employed where existing occurrence information is known to be incomplete (most cases); using only existing data would lead to large errors of omission in element distribution. Errors of commission, that is, mapping elements as present where they are not, is a common result of predictive distribution modeling, which is designed to utilize precautionary principles in predicting element presence. Therefore, when employing predictive distribution maps, there may be higher confidence that areas depicted as lacking elements are truly lacking conservation value, than the opposite and more dangerous case (i.e., low confidence that areas that show the presence of elements have conservation value).

#### Limitations Related to Category Systems:

To make category systems useful, it is important that they be updated routinely to reflect systems that are the most useful for grouping elements. The system update process should include review and any needed revisions to both the description of each category within a system (in case any categories have changed), and the assignment of elements to those categories. While most category systems tend to be very stable, element assignments may be dynamic. For example, the legal status of an element may change over time; failure to review and adjust the category assigned to such an element could have serious ramifications to results of analyses if the legal status assignment is obsolete.

#### **Limitations Related to Filters:**

A current limitation of this version of Vista is that a spatial filter can only be developed based on the default project boundaries or on a sub-region derived from a layer that contains a single feature (e.g., the county shape). In addition, spatial filters cannot be nested or included in sub-expressions. Another limitation is that the expressions used to create a filter are limited to the operands AND and OR; however, ANDs and ORs cannot be mixed in the same sub-expression. More complex queries that would utilize other operands such as IF, BUT NOT, etc. are not supported by this version.

#### Limitations Related to Weighting Systems:

To ensure the most accurate results in Conservation Value analyses, it is important that weighting systems be updated routinely to reflect any changes in the importance of particular elements relative to others. Policies and priorities for conservation in the planning region may change for various stakeholders over time, and so assigned element weights may be dynamic. The process for updating a weighting system should include review and any needed revisions to the weightings assigned for groups of elements and/or individual elements.

#### Limitations Related to Goal Sets:

To ensure the most accurate results in analyses (e.g., Scenario Evaluations), it is important that goal sets be updated routinely to reflect any changes in conservation goals for the planning region. Since specific objectives for target elements are frequently defined on the basis of incomplete knowledge and/or data, and ecosystems that support targeted elements change over time, careful documentation and long-term monitoring are necessary to ensure that goals remain current.

### Limitations Related to Element Conservation Value:

ECV layers are created by rasterizing vector element distribution layers. This process results in a loss of precision.

### Limitations Related to Conservation Value Summaries:

The CVS is an index and should be used as such - a general indicator of areas with relatively high and low conservation value based on user inputs and options. A large amount of data about individual elements and their occurrences is aggregated to a single value in this process, which necessarily results in a loss of precision and information to achieve the summary or averaged value. In addition, precision is lost as the data is resampled during the process of creating a CVS. Re-sampling occurs when the Element Conservation Value (ECV) layers used to create the CVS are overlaid on top of one another; their cell boundaries may not line up so their values are "r;re-sampled" into the grid cells in the CVS which closely correspond with (but are not always identical to) the cell locations they came from. Note that the results of a CVS display all occurrences of elements included in the analysis coded according to conservation value; the analysis does not exclude any occurrences from the results on the basis of minimum viable size.

It is also important to realize that the CVS does not automatically incorporate other important considerations of conservation planning, such as the degree to which elements are already protected at a location, how irreplaceable any one occurrence is in terms of meeting conservation goals, or the degree to which any particular occurrence is threatened. Such information can, however, be obtained using Scenario Evaluation analyses.

### Limitations Related to Landscape Condition Modeling:

The concept of landscape condition modeling is highly simplified in Vista resulting in relative indices of condition that take into account a fairly narrow set of considerations especially relative to animal species. Although experts building and documenting the model may consider a number of factors in assigning site and distance intensity weights, the Vista model does not explicitly address issues such as impacts on species mobility, demographics, habitat connectivity among multiple resources, etc. Much more detailed modeling tools exist to consider these issues when knowledge, time, and funding exist to address them. Over time we anticipate adding the ability of Vista to incorporate outputs of such models to allow greater precision while integrating results into the broad Vista planning framework.

### **Limitations Related to Translators:**

Vista translators serve to convert the many land use/management and policy types used in different jurisdictions to a circumscribed set of "standard" LUI categories and PT that can be utilized effectively in analyses. While the default LUI and PT descriptions attempt to capture the range of conditions on a land unit that may affect ecological compatibility, they are very limited in their ability to address more complex conditions that typically occur (e.g., the multiple effects of land use, management practices, disturbances, and invasions of exotic species). Thus, the default
LUI and PT are offered as a useful generic categorization, but they may not be entirely suited to any particular planning region or project. Vista provides the flexibility to permit users (working with NatureServe Vista support staff) to substitute custom LUI and PT lists comprised of types that better capture the important conservation impacts of specific land uses, management practices, and/or supporting policies in the planning region.

## **Limitations Related to Scenarios:**

The scenario definition process in Vista is used to create layers that represent LUI and PT conditions for the planning region, which can then be used in Scenario Evaluations. However, because Vista will convert all data to raster format before conducting the analysis, there is a danger of losing information if the cell size is too great. This risk is of greater concern for thin linear features such as streams, rivers, or roads. See discussion in the <u>Determining Grid Cell Size</u> topic for additional details related to the rasterization of features.

## **Limitations Related to Scenario Evaluations:**

Scenario Evaluation in Vista is intended to provide an indication of the degree to which conditions represented by a scenario support conservation goals for elements. It should not be used as a substitute for ground surveys, specific site design review, or expert opinion when element viability/ecological integrity must be ensured because:

- It makes use of simplified and generalized assumptions about compatibility between land uses and element viability/ecological integrity, and
- It may not incorporate specific and current information on species demographics or the viability/ecological integrity of elements.

Vista currently lacks the ability to calculate two important measures in conservation, specifically:

- Irreplaceability of land units to meet goals, which relates to how many options exist for achieving goals. A land unit containing an occurrence of an element with a conservation goal of 100% is essential for meeting that goal, and would be ranked 100% irreplaceable. As the options for achieving goals increase, irreplaceability values decrease.
- Complementarity of land units to contribute to goals, which refers to the degree to which a unit can represent elements not already conserved elsewhere in the planning region. A land unit that can be used to conserve occurrences of five elements for which goals are not already met, when compared with another unit that contains three such occurrences, will have a higher complementarity value.

Irreplaceability and complementarity are currently very difficult to infer with no direct processes for calculating them. However, some expert tools exist

that can be used to derive values for these conservation measures. NatureServe Vista support staff can provide services that utilize such tools to obtain values, and then integrate the results with Vista output.

The freedom to determine what combinations of land use compatibility and policy types define protection for elements in a Vista project is an important advantage over other regional, state, and national conservation projects, which typically do not allow any consideration of local policies. However, it is also an enormous responsibility on the part of the user to create a realistic definition of protection and to be conservative about the true nature of land use/management practices and policies in the planning region. A conservative approach will, at worst, demonstrate less protection than currently exists, and can be easily corrected. However, a less moderate approach that validates policies which are, in practice, unreliable for protecting elements may indicate that conservation goals have been achieved while elements are actually at serious and permanent risk.

## **Limitations of Site Analysis:**

Limitations described for data inputs and dependent Vista analyses, specifically for Conservation Value Summaries and Scenario Evaluations, are carried forward as limitations of Site Explorer. Additional limitations that are specific to Site Explorer include:

 When evaluating alternative land uses and/or policy types for the site selection, the alternative land status(es) must be applied to the entire selection. This suggests that care be taken to use a planning unit of sufficiently small size to reflect the scale of most land use patterns.