



# **Conservation Action Planning Workbook**

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## **User Manual**

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Version 6a, January 2009

Conservation Data & Info Systems  
Conservation Strategies Division

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# 1 Introduction

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This User Guide provides technical instructions for using the Excel-based Conservation Action Planning Workbook to make it easier for you to apply the Conservation Action Planning Process for developing and evaluating the effectiveness of conservation strategies and completing project-based measures of conservation success.

## 1.1 Where to Find Support Material

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All support material for the Conservation Action Planning process can be found online at the Conservation Action Planning site at the Conservation by Design Gateway: <http://conserveonline.org/workspaces/cbdgateway/cap/>

**BEFORE YOU START ENTERING YOUR PROJECT DATA!**

Make sure that you are using the latest version of this workbook. To download the latest version of this workbook:

1. Go to <http://conserveonline.org/workspaces/cbdgateway/cap/> (click on 'ConserveOnline Help' found in the top right corner of the Home screen header).
2. Select the "CAP Resources" link.
3. Select the "CAP Excel Tool v6a" link found in the 'CAP Handbooks and Excel Tools' column..

Within the workbook, you may access instructions for each worksheet by selecting the **Instructions** icon () in the toolbar at the right of the worksheet screen area. Topics relevant to that worksheet will appear.

For other questions about the content and operation of this workbook, email Warren Lockwood at [wlockwood@tnc.org](mailto:wlockwood@tnc.org).

The Excel Workbook Tool is a work-in-progress. If you find a 'bug,' or a flaw in its operation, and you are using the latest version available from the above website, please let us know and we will fix it. Contact Warren Lockwood at [wlockwood@tnc.org](mailto:wlockwood@tnc.org).

## 1.2 Getting Started

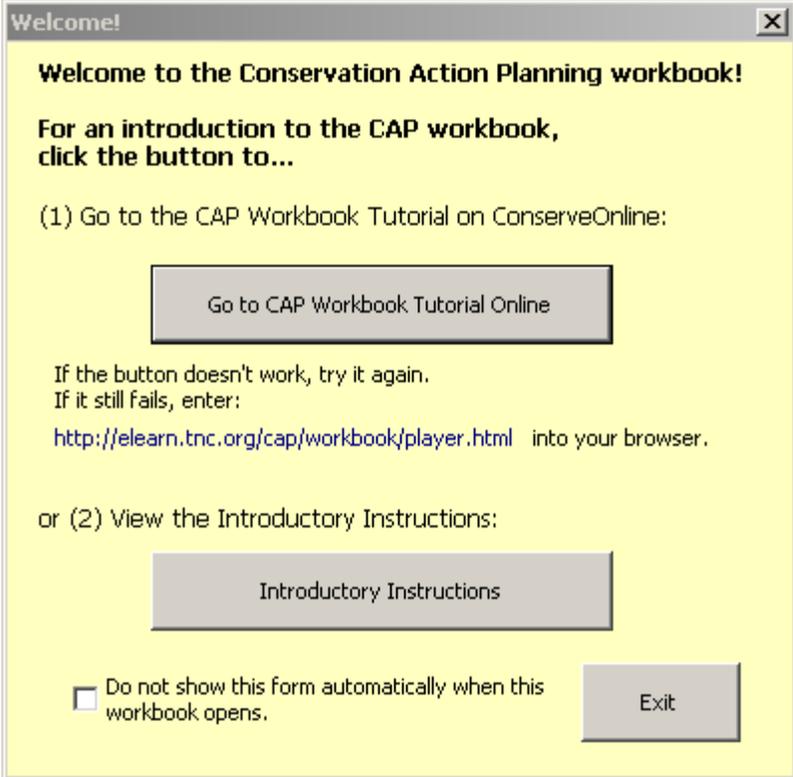
Prior to opening the Workbook, close as many of the software applications currently running on your computer as you can. This is particularly important if you have an older computer with a limited amount of memory. This Workbook is more than 8MB in size and optimal performance will be achieved if most available system resources are made available for Excel.



This program does not have auto-save functions, so be sure to **SAVE** your work **FREQUENTLY** to avoid losing entered information.

When opening the workbook, the **Home Worksheet** will appear, with a welcome message that provides some initial orientation to the workbook. You can scroll through this introduction by clicking on the **Next >>** button and then click **Exit** when you want to close it.

When opening the workbook, the **Home Worksheet** will appear, with a welcome form with options to (1) Go to the CAP Workbook Tutorial on ConserveOnline, or (2) View the Introductory Instructions.



Welcome!

**Welcome to the Conservation Action Planning workbook!**

**For an introduction to the CAP workbook, click the button to...**

(1) Go to the CAP Workbook Tutorial on ConserveOnline:

Go to CAP Workbook Tutorial Online

If the button doesn't work, try it again.  
If it still fails, enter:  
<http://elearn.tnc.org/cap/workbook/player.html> into your browser.

or (2) View the Introductory Instructions:

Introductory Instructions

Do not show this form automatically when this workbook opens.

Exit

**CAP Workbook Tutorial Online:** In the upper-right corner of the banner at the top of the Home screen is a link to the online tutorial. The actual address is: <http://elearn.tnc.org/cap/workbook/player.html>. Here you can see -- through animated screen shots as explained by Warren Lockwood -- how to use all of the features of the workbook. It is over three hours long and is divided into seventy-five sections. This tutorial is only in English and is based on the version 5a workbook, but it is still the best way to learn how to use the workbook.

**Introductory Instructions:** This set of instructions provides a brief overview of the workbook and what's new in version 6.

**DO FEATURES FOUND IN PREVIOUS WORKBOOKS APPEAR TO BE MISSING?** If so, the workbook is displaying the 'Basic' version, which hides parts of the workbook. To switch to the 'Full' version, click the 'Switch to Full Version' toggle button (found in the upper-right corner of the Home screen.) This button toggles between the two versions of the workbook. (Or click the 'Full or Basic Version' option from the 'Tables' menu at the top of the screen.) Users may quickly switch from one version to the other without loss of data.

### Example information and how to clear it

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The workbook contains information from a Nature Conservancy project to serve as an example. To delete this information from the workbook:

- Select the **Workbook Setup** button on the Home worksheet.
- Select the **Clear Workbook Input** button.

### Hide / Zoom Worksheets

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Click the Hide / Zoom Worksheets button near the top left corner of the Home screen to do the following:

#### **Hide Selected Worksheets:**

In its full version, the workbook displays thirteen worksheets. Check (and un-check) the appropriate boxes to hide (and re-display) eight of the worksheets that are less used.



You can go to any worksheet from the Directory form, even if the worksheet is hidden.

### Adjusting the Zoom Settings:

The tables help boxes, and navigational tools appear differently on different computer screens. You may need to rescale the image size on your monitor using a different "Zoom" setting to maximize the ease of use for your own computer. The workbook has a utility to adjust the zoom setting to make it easier to use. If The Nature Conservancy logo on the Home Worksheet is not located in the upper right portion of the screen, try a different zoom setting by clicking on the Adjust Screen Size button near the top left corner of the screen. Use the spinner button to select the desired screen size; then click **Exit** to close this form.

### Workbook Protection

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The workbook is in the 'protected' format to prevent unwanted changes to the workbook that might prevent its proper operation. You should be able to perform all workbook operations without unprotecting the workbook or individual worksheets.

- DO NOT UNPROTECT THE WORKBOOK.
- DO NOT DELETE WORKSHEETS that you do not use.
- DO NOT DELETE COLUMNS, and delete rows ONLY by clicking on the appropriate **Delete Selected Rows** menu option from the drop-down "Tables" menu.
- DO NOT try to use the workbook in a 'shared' environment. (A shared workbook is a workbook that has been set up to allow multiple users on a network to view and make changes at the same time.)

### Excel Security Levels:

The security level of your computer must allow the operation of macros.

**Excel 2002 and 2003:** If you receive a message "Macros are disabled because the security level is high", follow these instructions to enable the operation of macros:

- Select Tools, and Options from the menu, then select the Security tab.
- Click the 'Macro Security' button at the lower right-hand corner.
- Select the 'Medium' security level option found within the Security Level tab. Click OK.

**Excel 2007.** Upon loading this workbook, you may see, "Security Warning Macros have been disabled," followed by an 'Options' button. If so,

- Click the Options button. A 'Microsoft Office Security Options' form will appear.
- Select 'Enable this content'. Click OK.

**Excel 97:** Simply choose to enable macros when first opening the workbook.

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## Saving the File:

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When saving the file, make sure that the Save as type: entry (at the bottom of the Save As dialog box) reads:

**Excel 2002 and 2003:** 'Microsoft Excel Workbook'

**Excel 2007:** 'Excel 97-2003 Workbook'



Do not save the file under any option that includes Excel 5.0 or Excel 2007.



A convenient way to save user data in a workbook is to create data packs (see section 11.3).

### 1.3 What's New

This workbook operates similarly to the previous version (v5a) of this workbook. All capabilities that were in version 5a are in this version. The primary data-related change in this workbook – allowing users to enter measurements over time instead of only one measurement – supports strategy effectiveness measures and makes the data model similar to the Miradi data model. Other changes were inspired by user requests. Here is a summary of the changes:

- **EACH SUMMARY TABLE HAS ITS OWN WORKSHEET. THE SUMMARY TABLES HAVE MORE DISPLAY OPTIONS AND ARE NO LONGER LIMITED TO DISPLAYING ONLY EIGHT TARGETS AT A TIME:**
  - The Viability Summary table is now in a new worksheet,  $\Sigma$  Viability, which allows it to expand to as many targets as desired. This table can now display the summary ranks for either current ratings or desired ratings. It has various formatting options that make it easy to display (or hide) the information that was in the previous version's 'detailed viability summary.' And it can display the threat-to-target ranks alongside the viability ranks.
  - The Summary of Threats table is now displayed in a new worksheet,  $\Sigma$  Threats, which allows it to expand to as many targets as desired. This table can also display a summary of user-selected threats and targets.



The Summary of Threats format that displays a strategic action or indicator index has been replaced in this version with a new table located in the Monitoring worksheet named: 'Threats by target: Indicators & Actions.'

- The Stress Matrix table is now displayed in a new worksheet,  $\Sigma$  Stresses, which allows it to expand to as many targets as desired. This table can also display a summary of user-selected stresses and targets.
- **USERS CAN HIDE WORKSHEETS THAT THEY MAY NOT BE USING.** The 'Hide / Zoom Worksheets' button at the top of the Home worksheet enables users to hide (and unhide) up to eight of the thirteen worksheets.
- **USERS HAVE GREATER CONTROL OF TABLE FORMATS AND GREATER FLEXIBILITY IN PRINTING AND LOADING TABLES TO MICROSOFT WORD**
  - In the Viability, Monitoring, and Strategies worksheets, the table format forms have been redesigned to offer many more table format options. Users can select which rows and columns to display.
  - Print preview and load-to-Word is available for whatever tables are displayed. The user can select paper size and paper orientation.

- 
- **USERS CAN ENTER MULTIPLE INDICATOR MEASUREMENTS AND PROGRESS UPDATES ACROSS TIME INSTEAD OF ONLY ONE MEASUREMENT:**
    - There are new table formats and wizards in the Viability, Monitoring, and Strategies worksheets for entering and displaying time-series measurements. The Tables menu has a new option, 'Create Measurement or Progress Row,' to easily add a new measurement wherever needed.
    - **INDICATOR MEASUREMENTS** -- including measurements of key attributes and threats -- may be entered for an unlimited number of time periods. These measurements now contain additional fields, including drop-down list selections for 'trend' and 'measurement source.'
      - Indicator measurements of key attributes can be entered directly into tables in the Viability worksheet or via the updated Viability wizard.
      - Indicator measurements of threat and other items can be entered directly into tables in the Monitoring worksheet or via the new Threats and Other Measurements wizard.
    - **PROGRESS UPDATES** for strategic actions, action steps, and monitoring plans may be entered for an unlimited number of time periods.
      - Progress updates can be entered directly into tables or via wizards in the Strategies and Monitoring worksheets.
  - **USERS CAN CONNECT WHAT IS MEASURED BY AN INDICATOR TO OBJECTIVES:** In the previous version of the workbook, if an objective was connected to an indicator, the connection applied even if the indicator was measuring targets that were unrelated to the objective. This version connects the objective clearly to the things being measured.
  - **USERS CAN CREATE EITHER 'NEW' OR 'OLD' DATA PACKS:** This new workbook can read and create either version 6a or version 5a 'data packs' (a separate Excel file that contains only the user data.) The version 6a data pack contains all user data that is entered into this workbook. To make sure that you are storing ALL of your data, be sure to store your data as version 6a data packs.
    - The version 5a data pack contains only data that can be entered and read by a version 5a CAP workbook. Also, as of this writing, ConPro can read only version 5a data packs. (ConPro will be able to read version 6a data packs sometime in 2009.) The version 5a data pack does NOT store the data that is newly available to the version 6a workbook. For example, if you enter a time series of measurements, the version 5a data pack will store only one measurement -- the measurement with the most recent date.
  - **OTHER:** There are new fields for entering latitude and longitude, for classifying priority projects and project types, for entering parent projects, and for classifying marine ecoregions.

## 1.4 Using the Custom Drop-Down Menus

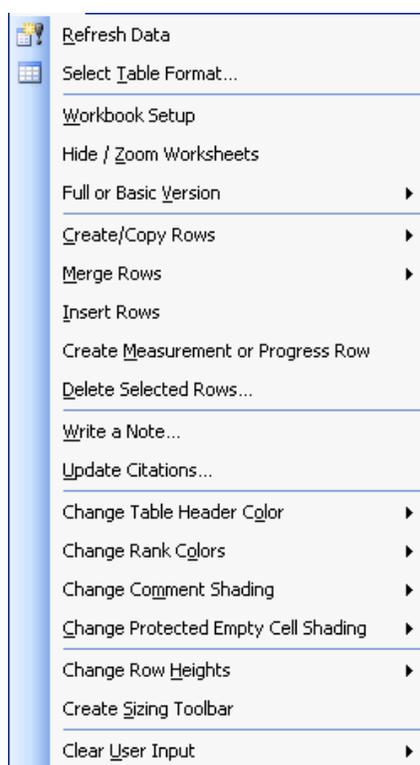
At the top of the screen there are three custom pull-down menus – Tables, Wizards, and Toolbar.



### Wizards and Toolbar:

- The **Wizards** menu allows you to select one of the available data entry wizards (eight wizards in the Full mode, four wizards in the Basic mode). The Wizards menu performs the same function as the Wizard icon, , in the custom toolbar.
- The **Toolbar** pull-down menu allows you to select among all of the items also listed on the custom Toolbar described in 'Using the Custom Toolbar'.

The **Tables** pull-down menu, shown below, provides a variety of workbook functions that are described below.



**Refresh Data** - Refresh data for all tables in the workbook (also on custom toolbar).

**Select Table Format...** - Provides resorting and reformatting options for the tables in most of the worksheets (also on custom toolbar).

**Workbook Setup** - Takes the user to the Workbook Setup form (see section 2.1).

**Hide / Zoom Worksheets** – Allows you to:

- Hide any of eight worksheets. In its full version, the workbook displays thirteen worksheets. From here you can hide (and re-display) eight of the worksheets that are less used. Note: You can go to any worksheet from the Directory form, even if the worksheet is hidden.

- Select different zoom settings to rescale the image size on your monitor to maximize the ease of use for your particular computer (also on a button on the Home worksheet).

**Full or Basic Version** – Allows you to select the ‘basic’ version of the workbook from the Home screen and thus limit the number of data fields, tables, table formatting options and wizards to the essential core of the workbook’s functionality. In the basic version, parts of the workbook are hidden – not deleted. You may quickly switch to the full version and back again without loss of data. Note: this user guide describes the functionality of the full version.

**Create/Copy Rows** – Brings up the following submenu with four options:

- Viability: Create Rows for each Target and Category** – This will create a set of template rows for each target and viability category (landscape context, condition and size). Thus, if you run this menu option with a workbook that has a total of three focal targets entered, you will end up with nine template rows in your viability table. If this menu option is executed when there is already some data entered in the viability table, the program will check to see which target and viability category combinations are not represented and only add these additional rows.



Viability data is now stored in hidden worksheets to enable more formatting options. This means that the above option will still create blank rows for data entry – but only temporarily. If left blank, these rows will disappear when the table data is refreshed.

- Viability: Copy Selected Rows to Another Target** – This allows you to copy viability rows from one target to one or more other targets. Select the desired rows in the Viability table that you want copied, then select this menu option. A form will appear. From the form, select the target or targets that you want to copy the information to.

- Stress/Source: Copy Data to another Target...** This allows you to copy stress and source data from one target to one or more other targets. You may copy all of a target’s data or only selected stress or source rows. Select the target (and if desired the rows) that you want copied, then select this menu option to choose which target or targets you want to copy the information to.

**Monitoring: Copy Selected Row** – This will copy the contents of a row in the monitoring table where the cursor is residing into a new row immediately below the selected row. The indicator name of the new row will be the same as the indicator name of the original row except that a number will be added to the end of the name ('1' for the first copy, '2' for the second copy, etc.) This utility is helpful if the monitoring approach for a particular indicator is similar to the approach used for another indicator. You can make and edit the copy and avoid repetitive data entry.

**Merge Rows** – Brings up the following submenu with three options:

**Stress/Source: Merge Two Threats** – This menu option allows you to combine the data of two threats into one. You select the two threats to be merged together: the first threat selected is the default threat – its data is preserved whenever there is a difference between the default threat's data and the secondary threat's data. Links to other areas of the workbook are combined so that no links are lost or duplicated.

**Monitoring: Merge Two Indicators** – This menu option allows you to combine the data of two indicators into one.

**Strategies: Merge Two Strategic Actions** – This menu option allows you to combine the data of two strategic actions into one.

See the above 'Stress/Source: Merge Two Threats;' these work similarly.

**Insert Rows** – This will insert a blank row into either the Viability or the Nested Targets tables. In the Viability table, the blank row is inserted immediately above the row where the cursor is residing. In the Nested Targets table, the blank row is added to the bottom of the table.

**Create Measurement or Progress Row** – This will insert a blank measurement row into the measurement tables in the Viability or Monitoring worksheets, or insert a blank progress row into the appropriate tables in the Monitoring or Strategies worksheets. (If the cursor is on a row that indicates that a measurement or progress row should be inserted, the Insert Row option will perform in the same manner as this option.)

**Delete Selected Rows...** – This will delete selected row or rows in the Viability, Strategy, Monitoring and Nested Targets tables. Multiple rows can be selected and deleted in the Viability or Nested Targets table. Only single rows can be deleted with this utility from the Monitoring or Strategy tables (although deleting a single Strategic Action will also delete any Action Steps linked to the Strategic Action).

**Write a Note...** – This opens up a memo box to capture any kind of text entry. Unlike the comments field, which provide documentation for individual decisions in the workbook, the NOTE function is a single memo-pad in which to temporarily store text for the entire workbook (i.e., there is only one NOTE field). Select Save Note to save and exit the Note box. Click Delete Note to delete all text from the Note. Select the Cancel button to exit from the Note box WITHOUT saving any changes made to the text.

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**Update Citations** - This opens the Citation form which enables you to enter a list of citations to use when documenting comments.

**Change Table Header Color** - Use this option to change the color of each table header. The color of the headers can be white, pale yellow, or aqua.

**Change Rank Colors** – There are many cells within tables that are color coded to convey ranking information. If you find the coloring distracting or want to print a table without the colors, select Change Rank Colors > Clear. The cells will remain without color until you execute the Change Rank Colors > Restore option to restore color to all cells within the current worksheet. The Refresh Data utility does NOT restore color to tables within the workbook.

**Change Comment Shading** – There are many cells within worksheet tables that have a corresponding text comment field to capture additional explanation or the rationale behind a particular rating value. When text has been entered into a comment field, the corresponding table cell becomes shaded with light blue shading. This conveys at-a-glance which cells in a table have underlying comments. To clear the light blue shading from all cells within a worksheet (for example, to print a table without shading), run the Change Comment Shading > Clear option. To display all comment shading, run the Change Comment Shading > Restore option. The Refresh Data utility does NOT restore comment shading to tables within the workbook.

**Change Protected Empty Cell Shading** – There are some protected cells where the user can type an entry which is not rejected until the end when the user hits enter. To avoid such wasted effort, these cells are shaded in a dot pattern. This option clears and restores that shading.

**Change Row Height** – This menu provides two options for setting the height of rows within a worksheet table. The Change Row Height > Uniform sets the same fixed row height for all cells in the worksheet table, independent of any text within cells of the table. The Change Row Height > AutoFit will adjust the height of each row in a table so that all text is displayed in all cells of each row.

**Create Sizing Toolbar** – Selecting this menu option will bring up a small “Size Toolbar” that allows you to make a single column narrower or wider or to make a single row taller or shorter. The Size Toolbar can be moved anywhere on screen by left-clicking on the Size Toolbar and dragging it to a new location. The Size Toolbar will remain on the screen until you close it allowing you to move the cursor among different columns and rows to make custom adjustments to a table.

**Clear User Input** – There are two menu selections associated with this menu option. Clear User Input > Clear this Table... will remove all user input, including user comments, from a single worksheet. The Clear User Input > Clear All User Input... will remove all user input from the entire workbook. Executing either of the menu selections will first present you with a warning message to confirm that you do indeed want to remove all user input.

## 1.5 Using the Custom Toolbar

A customized Toolbar menu appears on the right hand edge of the worksheet area. This toolbar contains 17 buttons that provide convenient navigation to different areas of the workbook or perform frequently needed functions. A brief description of each of these buttons is provided below.

	Takes you directly to the Home worksheet
	Takes you directly to the Viability worksheet
	Takes you directly to the fourth (Stress, Source or Threats) worksheet
	Displays the Summary table options to take you to the desired summary table
	Takes you directly to the Strategies worksheet
	Takes you directly to the Monitoring worksheet
	Refreshes Data for all tables in the workbook
	Launches the Table Format form for the active worksheet.
	Provides context specific help Information
	Opens a Comment box for user documentation
	Launches a Search utility for finding key attributes, threats, objectives, and indicators
	Opens a Wizards menu to select among eight available wizards
	Opens a Print Preview utility
	Opens an Import-to-Word utility
	Opens a Directory tool that provides a one-click jump to a particular table or worksheet
	Pages up within a worksheet
	Pages down within a worksheet

## 2 Home Worksheet

Use the Home worksheet (shown below) to:

- Setup the workbook: Go to section 2.1 of these instructions to learn about the setup options.
- Enter and display the 'core' information of the workbook, including:
  - Project information (description, goals, associated projects, etc.)
  - Contact information (contact name, email, planning team, etc.)
  - Focal conservation targets and target-level information (description, target types, habitat associations, nested targets)
  - Citation lists
  - CAP Basic Practices scores

Go to sections 2.2 and 2.3 of these instructions to learn more about the information entered and displayed in the Home worksheet.

		<b>Conservation Action Planning Workbook</b> <small>A tool for developing strategies, taking action, and measuring success</small> <small>© 2009 The Nature Conservancy Version: CAP_v6a January 13, 2009</small>		<a href="#">ConserveOnline Help</a> <a href="#">Online Tutorial</a> Full Version
Welcome	Hide / Zoom Worksheets	Workbook Setup (Establecer libro de trabajo) (Organização do Programa) (Установка рабочей книги)	Reset Menus and Tables	Switch to Basic Version
To enter, edit or delete data in protected cells (which are shaded or contain entries in black font), double-click on the cell. An entry form will appear. To change the table format, double-click on the table header. A table format form will appear.				
<b>Project and Conservation Targets</b>				
<b>Project</b>	<b>San Miguel/Dolores River</b>			
<b>Target #1</b>	<b>San Miguel River System</b>			
<b>Target #2</b>	<b>Lower Dolores River System</b>			
<b>Target #3</b>	<b>CO Plateau Cliff and Canyon</b>			
<b>Target #4</b>	<b>PJ &amp; Ponderosa Pine Woodland</b>			
<b>Target #5</b>	<b>Montane-mixed shrubland/grassland mosaic</b>			
<b>Target #6</b>	<b>Desert Shrubland</b>			
<b>Target #7</b>	<b>Sagebrush Shrubland</b>			
<b>Target #8</b>	<b>High elevation forest/alpine mosaic</b>			

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## 2.1 The Buttons at the top of the Home worksheet

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At the top of the Home worksheet, there are five buttons:

1. **Welcome Button** – This button launches a welcome form with options to (1) Go to the CAP Workbook Tutorial on ConserveOnline, or (2) View the Introductory Instructions.
2. **Hide / Zoom Worksheets** – This button launches a form where you can:
  - Hide any of eight worksheets. In its full version, the workbook displays thirteen worksheets. From here you can hide (and re-display) eight of the worksheets that are less used. Note: You can go to any worksheet from the Directory form, even if the worksheet is hidden.
  - Rescale the image size on your monitor using a different "Zoom" setting to maximize the ease of use for your own computer.
3. **Workbook Setup Button** - This button takes you to the following functions:
  - CLEAR WORKBOOK INPUT - This removes ALL user input (including user documentation) from all of the worksheets. (This button asks for confirmation before clearing input.)
  - LOAD DATA FROM ANOTHER WORKBOOK (Clears this workbook first) - This automatically transfers data from another workbook or data pack into this workbook.
  - ADD DATA FROM ANOTHER WORKBOOK TO THE DATA IN THIS WORKBOOK - This automatically combines data from another workbook or data pack to the data in this workbook. The targets being added must be different than the targets in the receiving workbook.
  - ADD VIABILITY DATA FROM THE SELECTED WORKBOOK - This automatically combines Viability data from another workbook or data pack to the data in this workbook, even when the targets are the same.
  - CHANGE LANGUAGES - The version 5 workbook can display in English, Spanish, Portuguese and Russian. The language updates are not yet complete. When finished, this workbook (version 6a) will be updated for the above languages plus Mongolian!
  - CREATE CAP DATA PACK - This automatically creates a separate Excel file that contains all of the user entries in this workbook. Data packs may be created for the entire project or for selected targets only. Data packs

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may be created for this workbook (version 6a) and for the previous version (v5a).

- **SELECT THREAT RANKING METHOD** - There are two different threat ranking methods that may be used in the third worksheet:
  - Stress / Source of Stress ranking (this is the standard ranking method), or
  - Threat ranking that does not use stresses (a non-standard ranking method).

The selected ranking method is applied uniformly for all targets.

- 4. Reset Menus and Tables** – This button creates the menus and toolbars, and in addition, refreshes the data to show the default table formats, which display all targets, threats, indicators, etc.



When you open this workbook, Excel should automatically create the menus and toolbars and reset each worksheet to a top-of-the-page view. However, it will retain the table formats that were saved previously.

- 5. Switch to Full / Basic Version** - Use this button to change between the two versions of the workbook. Users may select the basic version of the workbook to limit the number of data fields, tables, table formatting options and wizards that they see to the essential core of the workbook's functionality. In the basic version, parts of the workbook are hidden – not deleted. Users may quickly switch from one version to the other without loss of data.

---

## 2.2 Tables and Data Entry: Entering Data into the Home Worksheet

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**TABLES:** At the Home worksheet, four different tables can be displayed:

1. **Project Information:** This table displays the project-level information such as ecoregion, country, and contacts.
2. **Project and Conservation Targets:** This table displays the project and the focal conservation targets. If desired, the focal target description, target type, habitat association, and nested targets can also be displayed for each target. The Project and Conservation Targets table can display selected targets as well as all targets.
3. **Citation List:** The table lists whatever citations you want to store in the workbook. The citation abbreviations may be easily appended to comments throughout the workbook.
4. **CAP Basic Practices:** This table displays ten CAP Basic Practice steps, with key questions and sections which describe the criteria for scoring the steps (see section 2.3). Scores and comments can be entered for each CAP Basic Practice.

**DATA ENTRY:** To enter the data that is displayed in the above tables, use the following forms. (Each form will appear if you double-click on the respective tables.):

1. **Project Information:** Use the Project wizard to enter project-level information.
2. **Project and Conservation Targets:** Use the Target wizard to enter, reorder, and remove focal conservation targets. Use this wizard to also enter focal target descriptions, target types, habitat associations, and nested targets. You may also enter focal target descriptions and nested targets directly into the Targets worksheet (the eighth tab at the bottom of the workbook).
3. **Citation List:** Type citations directly into the Citation List table, or use the Citations form to create a list of citations.
4. **CAP Basic Practices:** Use the drop-down menus to enter CAP Basic Practice scores (1, 2, 3 or 4) directly into column D of the CAP Basic Practices table. Use the page up and page down arrows at the right of the screen to move between the ten steps. See section 2.3 for more on the CAP Basic Practices table.

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## 2.3 CAP Basic Practices

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The CAP Basic Practices table is designed to show project staff the strengths and weakness of their project, and give them a list of best practices to aim for in their planning. It is hoped that the table will:

- (1) Facilitate peer-review conservation audits. TNC has launched a peer-review conservation audit program where staff voluntarily request an external review of their project relative to the CAP Basic Practices. Audit teams and project staff have requested a CAP assessment tool to help facilitate the peer-review process.

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By showing specific criteria for achieving the highest rating, it may assist auditors with developing valuable recommendations to improve each project.

- (2) Empower local projects to improve their application of CAP. This tool may help guide and track the application of the CAP process at the local (project) level. The tool outlines each of the 10 steps of the CAP process, going beyond a simple checklist to describe four different levels for applying each step. By showing a higher level of CAP application, it should provide goals and motivation for steady improvement for those staff assessing their own projects. It may be used in an iterative fashion to motivate continual improvement as their CAP plan evolves.
- (3) Focus training and support. If project staff from throughout the Conservancy report on their progress in applying CAP, training and support can be directed at those state and country programs that need it most. Tracking the degree of application of each of the 10 steps may also help focus attention on the steps that most need additional support and training.

As you go through the assessment, the focus should not be on the final rating for each section, but on careful consideration of the criteria (each bullet item). Consider which items the project is strongest at achieving, and document which ones need improvement.

The table contains ten steps of the Conservation Action Planning process. Each step has the following:

- The descriptive heading of the step, followed by a cell where the score (1, 2, 3, or 4) is entered.
- Key questions that the auditors or project managers should be able to answer as a result of their assessment.
- Four sections which describe the criteria for each of the four scores.

A project must meet all the criteria (each bulleted item) in the section describing a score in order to receive that score. A rating of 1 indicates the project needs significant improvement in that area, 2 indicates they are making progress toward meeting CAP standards, 3 indicates the project meets CAP standards, and 4 indicates an outstanding example. The bulleted items describing each rating are arranged by similar subject (e.g. objectives or strategic actions). As you progress up the scale from a rating of 1 to a rating of 4, new bullet points are added at the end of the list for each subject.



### 3 Viability Assessment Worksheet

The Viability worksheet contains the Assessment of Target Viability table (below). Each record in the table represents a particular key ecological attribute, its indicator and its indicator ratings for a specified conservation target.

Assessment of Target Viability				Indicator Ratings					Indicator Measurements								
San Miguel/Dolores River				Bad - Current		Better - Desired			(all measurements)								
(1 of 3 targets selected) <small>Double-click open entry form</small>				Peer	Fair	Good	Very Good	Rating Source	Date	Measurement	Rating	Trend	Source	Desired Rating	Date	Related Objective	
1	San Miguel River System	Landscape Context	San Miguel River hydrograph	Shape of hydrograph does not	Mostly natural hydrograph	Natural hydrograph	Natural hydrograph	Expert Knowledge	Jul-03	Natural hydrograph shape	Good	Strong Increase	Rapid Assessment	Good	Feb-14	3	
									Jul-03	Natural hydrograph shape	Good	Strong Increase	Rapid Assessment				
	Condition	Flaneshmouth and blackhead sucker	population size of Flaneshmouth sucker and blackhead sucker	less than 500	500 - 1500 individuals	2000 - 5000 individuals	more than 5000 individuals	Expert Knowledge	Jul-03	Natural hydrograph shape	Poor	Strong Increase	Rapid Assessment	Good	Feb-14	3	
			native riparian vegetation	% of mainstem and main tributaries dominated by native	less than 25% native dominated	50 - 25% native dominated	50 - 75% native dominated	more than 75% native	External Research	Jul-01	tamarisk map - dominated by natives and > 20 miles treated	Very Good	Strong Increase	Rapid Assessment	Very Good	Feb-14	5
									External Research	May-05	tamarisk map - dominated by natives	Very Good	Strong Increase	Rapid Assessment			
									External Research	Jul-03	tamarisk map - dominated by natives	Very Good	Strong Increase	Rapid Assessment			
									Expert Knowledge	Oct-01	twenty	Poor	Flat	Expert Knowledge			
									External Research	Jul-03	most are A or B	Good	Strong Increase	Rapid Assessment	Good	Feb-14	1
	Soil/Sediment Erosion Deposition Regime	High quality (A or B) occurrences of each of the rare riparian	Any needed occurrence	At least for the needed	all needed	All needed occurrence rate high	External Research	Jul-03	most are A or B	Good	Strong Increase	Rapid Assessment	Good	Feb-14	1		
		Shape of sedimentation	Mostly natural sedimentation	Natural sedimentation	Natural sedimentation regime	Onsite Research	Jul-03	most are A or B	Good	Strong Increase	Rapid Assessment	Good	Feb-14	0			
Size	length of native riparian vegetation	% of mainstem and main tributaries dominated by native	less than 25% dominated	50 - 25% dominated	50 - 75% dominated	more than 75% dominant	Rough Guess	Jul-03	tamarisk map - dominated by natives and >20 miles treated	Very Good	Strong Increase	Rapid Assessment	Very Good	Feb-14	5		

Other columns within the worksheet represent information about the particular key ecological attribute, including:

- Conservation Target – the focal target (number and name) that the key ecological attribute describes.
- Category – the broad category of Size, Condition or Landscape Context to which the key ecological attribute can be assigned.
- Key Ecological Attribute – the name of the key attribute.
- Indicator – measurable entity used to assess the key attribute.
- Indicator ratings – Very Good, Good, Fair, and Poor rating descriptions.
- Indicator ratings source – Rough Guess, Expert Knowledge, External Research, and Onsite Research options.
- Indicator measurements - Each record can contain multiple indicator measurements. These measurements contain the following information:
  - Date of measurement – the date associated with the measurement.
  - Current Indicator Measurement – the current status of the key ecological attribute in the context of the described indicator ratings.
  - Current Rating – the current indicator rating for the key ecological attribute – Very Good, Good, Fair, or Poor.
  - Trend – the direction of the measurement – Unknown, Strong Increase, Mild Increase, Flat, Mild Decrease, or Strong Decrease.
  - Measurement source – Rough Guess, Expert Knowledge, Rapid Assessment, and Intensive Assessment options.
  - Comment – information associated with these measurement, rating, and trend entries.

- Desired Rating – the desired indicator rating for the key ecological attribute.
- Date of Desired Rating – date by which desired rating is expected to be met.
- Related Objectives - the objectives, either by count or by name, that are supported by the indicator measurement.
- Comments – In addition to the comment for each indicator measurement, each row supports four other comments (see section 3.4).

This section begins with instructions for building the table and is followed by a detailed explanation of the concepts and terms used in the table. If you are unfamiliar with the concepts and terms, go first to Appendix B (Assessing Target Viability).

### 3.1 Building the Assessment of Target Viability Table

---



Before building the Assessment of Target Viability table, or any other tables after the Home worksheet, make sure to enter the project and target names in the Home worksheet.

With no data, the Assessment of Target Viability table has one empty row below the header row. Rows are added to the table as data is added. Rows of data may be created in two ways:

1. Select menu options (see Section 3.2) that create rows, then type Viability-related data directly into table.
2. Use the Viability Wizard (see Section 3.6).

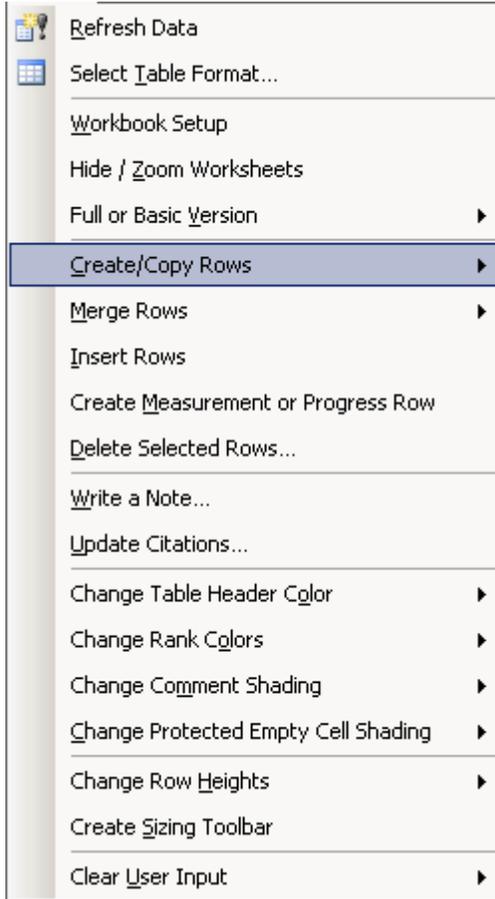
### 3.2 Using menu options to create and delete rows in the Viability table

---

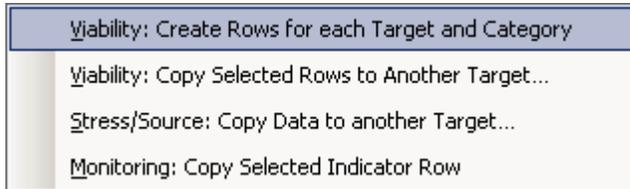
To create rows for each viability category for the desired targets:

---

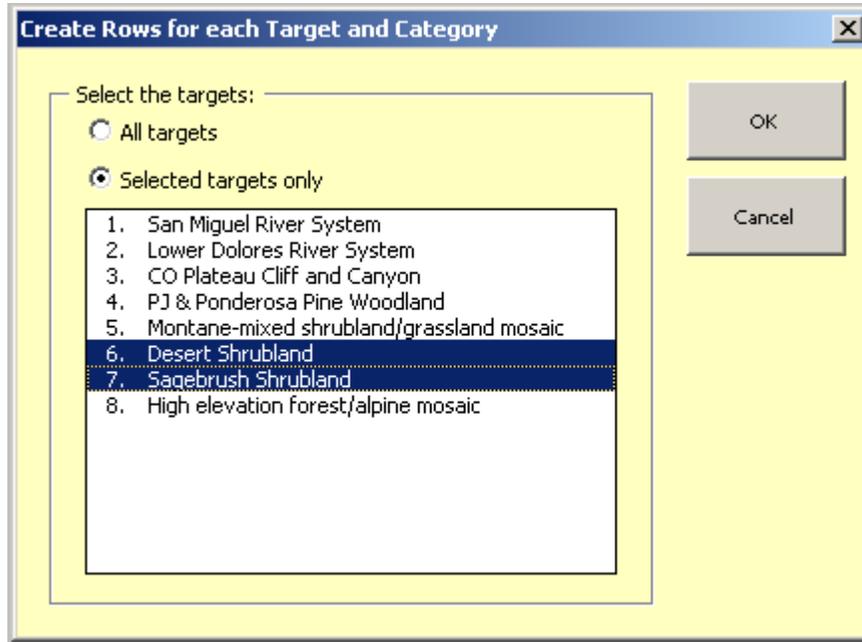
From the **Tables** menu, select **Create/Copy Rows...**



and then the menu item **Viability: Create Rows for Each Target & Category**.



A form will appear that allows you to select which targets to create rows for.



Select the desired targets, and click OK. This will create rows for each viability category (landscape context, condition and size) for each selected target. If some rows already exist, this will not create duplicate rows.



When you refresh the Viability table, unused rows (rows without a target and key attribute) will be deleted.

### To copy selected rows to another target:

---

From the **Tables** menu, select **Create/Copy Rows...** and then the menu item **Viability: Copy Selected Rows to Another Target**. The above form will appear that allows you to select which targets to copy rows to. Select the desired targets, and click OK. The selected rows will be copied to each selected target.

Note: If a viability assessment row already exists with matching target, key attribute, and indicator, data for that row will not be copied.

### To insert blank rows within the table:

---

From the **Tables** menu, select **Insert Rows**. The blank rows are inserted above the row where the cursor is located.

### To insert blank indicator measurement rows within the table:

---

From the **Tables** menu, select **Create Measurement or Progress Rows**. The blank row is inserted above the row where the cursor is located.

### To delete rows from the table:

---

From the **Tables** menu, select **Delete Selected Rows**. The selected row(s) in the table will be deleted.



Records in the Monitoring worksheet are tied to records in the Viability worksheet via the indicator. When you delete records in the Viability worksheet, the workbook will remove links between the indicator and the deleted row; however, the indicator and its monitoring data, if any, will not be deleted from the Monitoring table.

## 3.3 Entering Data into the Assessment of Target Viability table

---

This section and section 3.4 describe how to enter data into the Viability table without using the Viability wizard. Section 3.6 describes how to enter the same data into the Viability table by using the Viability wizard.

The first four fields of the Viability table – targets, categories, key attributes and indicators – are shaded if empty and are in black font when they contain text. This formatting means that these fields are protected. Entries cannot be typed directly into these cells, but are made by using drop-down menus and entry forms.

**Targets and Categories** may be entered into the Viability table via drop-down menus. For these columns, first select the appropriate cell. A drop-down menu will appear: highlight and select the appropriate item from the drop-down menu.

**Key attributes and indicators** are entered with an entry form. The entry form will appear either (1) when you select the cell or (2) when you double-click on the cell. Use the drop-down menu at cell D3 of the Viability worksheet to select (1) 'Single-click opens entry form' or (2) 'Double-click opens entry form.'

### **Key Ecological Attributes:**

To enter a key attribute, select a cell within the table in the key attribute column (column D), and the entry form will appear (see below). The form contains a text box for the key attribute and option buttons from which to select the category of the key attribute.

If you select a key attribute cell that is blank, an entry will affect that row only. You may type a new attribute and select its category, or type (or paste) an existing attribute (the category will be entered automatically). Click OK to enter the key attribute and category into the selected row. To select an existing key attribute from a list, click the 'Open Wizard' button.



If you select a cell that already contains a key attribute (or contains any text), any editing of the existing attribute or change of its category will change the attribute and category for every row in the Viability table that contains that attribute. (If, however, you REPLACE the attribute name with the name of another existing attribute, the change will apply to that row only.) To change the existing attribute in this row to a new attribute without changing the other rows that contain this attribute, click the 'Clear Entry from Table' button to clear the entry first, then type in the new attribute name.

Each key attribute may have only one category. Therefore, if a key attribute is entered into multiple rows of the Viability table, the category will always be the same in each of those rows.

### Indicators:

Indicators are entered with an entry form. Select a cell within the table in the indicator column (column E), and the entry form will appear. The form contains a text box for entering or editing the indicator, and an 'Open Wizard' button that takes you to the indicator page of the Viability wizard.

If you select an indicator cell that is blank, an entry will affect that row only. Type in a new indicator. Click OK to enter the indicator into the cell. To select an existing indicator from a list, click the 'Open Wizard' button.

If you select a cell that already contains an indicator, you can use the form to edit the indicator, change to another indicator, clear the entry, or open the wizard.



As with the key attribute, any editing of the indicator will affect every instance of that indicator in the workbook. (If, however, you REPLACE the indicator with the name of another existing indicator, the change will apply to that row only.) To change the existing indicator in this row to a new indicator without changing the other rows that contain this indicator, click the 'Clear Entry from Table' button to clear the entry first, then type in the new indicator name.

Indicators in the Viability table will be automatically added to the list of indicators displayed in the Monitoring table in the Monitoring worksheet (see Section 7.1).

For other columns, type data directly into the appropriate cells of the table.

### 3.4 Documenting Viability Decisions with Comments

The viability table and worksheet stores comments for documenting the following decisions:

- The rationale behind key ecological attribute and indicator selections.
- The basis for defining the indicator ratings.
- The basis for the indicator measurement(s).
- The basis for the desired rating determination.
- Other comments related to this row of data.



Worksheet Comment: Most worksheets contain a general worksheet comment in addition to the various comments enabled within the tables. To access the general worksheet comment, select the Comments button while the cursor is outside of the table(s).

To enter documentation, select the relevant row in the table; then select the Comments button from the toolbar along the right of the screen, from the Toolbar menu at the top of the screen or from right-clicking the mouse. A Comment form will appear that allows you to scroll forward and backward through each of the five documentation fields. Enter your documentation and save.

You may also enter documentation for the five documentation fields throughout the steps of the Viability Wizard (see section 3.6).

If text is entered for any of the five documentation fields, the corresponding cell in the table will be shaded. If there is no text, the shading will disappear. To clear the shading from the cells (for example, while printing) select Change Comment Shading and Clear from the Tables menu at the top of the screen.

### 3.5 Table Formats

The Assessment of Target Viability table contains formatting options that can be selected from a Table Format form. To launch the Table Format form, do one of the following:

- Choose the Select Table Format option in the Tables menu
- Select the Table Format toolbar button
- Right-click the mouse to select the Table Format
- Or, simply double-click any cell within the Viability worksheet that is outside of the Viability table.

The format options are:

- **Sort:** The Assessment of Target Viability table can be sorted in three ways: alphabetically by target, then by category and key attribute, alphabetically by key attribute, and alphabetically by indicator.
- **Select the columns to display:** Check the boxes of the data to display.
- **Select the measurements to display:** Each viability row can have multiple indicator measurements. Select here whether you want all measurements displayed or only the latest measurement.
- **Select the targets to display:** Click 'All targets', or click 'Selected targets only' and select from the list of targets.

The Tables menu also offers options to update or remove color and comment shading, and to change row heights.

**Select Viability Table Format**

Select from the following table format choices, and check the boxes of the data to display.

Sorting Options:

- By Target, Category and Key Ecological Attribute
- By Key Ecological Attribute
- By Indicator

Select the measurements to display:

- Only the latest measurement for each row
- All measurements for each row

Select the columns to display:

- Indicator Ratings
  - Ratings Source
- Indicator Measurement
- Rating
  - Date of Rating
  - Trend
  - Source
- Desired Rating
  - Date for Desired Rating
- Objectives (count)
- Objectives (names)

Select the targets to display:

- All targets
- Selected targets only

1. San Miguel River System
2. Lower Dolores River System
3. CO Plateau Cliff and Canyon
4. PJ & Ponderosa Pine Woodland
5. Montane-mixed shrubland/grassland mo
6. Desert Shrubland
7. Sagebrush Shrubland
8. High elevation forest/alpine mosaic

Open Wizard    OK    Cancel

### 3.6 Using the Viability Wizard

Open the viability wizard by clicking on the **Wizard** icon on the custom tool bar along the right side of the screen (you may also right-click the mouse to select the wizard), selecting the **Viability** radio button (if it is not already highlighted), and selecting **OK**. You may also open the wizard by simply double-clicking any cell in columns A-C or F-R within the Viability table.

If the cursor is on a row within the Viability table when you open the wizard, the data from that row will be loaded into the wizard.



The basic version of the Viability wizard has six steps instead of eight: steps 5 and 7 of the full version are not included in the basic version.

1. On the first screen (Step One) of the Viability wizard (below) select a **focal conservation target**.

Assessment of Target Viability - Step 1 of 8
✕

This wizard will guide you through the process of identifying key ecological attributes and indicators, and specifying their current and desired status.

First, select a target from the list:

Conservation targets:

1.	San Miguel River System
2.	Lower Dolores River System
3.	CO Plateau Cliff and Canyon
4.	PJ & Ponderosa Pine Woodland
5.	Montane-mixed shrubland/grassland mosaic
6.	Desert Shrubland
7.	Sagebrush Shrubland
8.	High elevation forest/alpine mosaic

Save data in:  
 New Row  
 Selected Row (replace)

<< Previous

Next >>

Save and Exit

Cancel

Select the **Next >>** button when you are ready to move on.

2. In Step Two, select a category and key ecological attribute from the drop-down list of key attributes (see below). The list contains the standard list of key ecological attributes from the Menus worksheet, plus any key attributes that have already been added to the Viability table.
  - To add new key attributes to the list, select a category and type in a new attribute in the text box above the list of key attributes, then click Add New Attribute to List.
  - Use the drop-down list of “Categories listed” that is located above and to the right of the list of key attributes to refine the list to show only the key attributes of a selected category.
  - Use the **Remove Selected Attribute** and **Edit Selected Attribute** buttons to change the list as appropriate. (Remember that editing key attribute selections in the list will change those attributes in the Viability table, if they have been used in the table.)

**Assessment of Target Viability - Step 2 of 8**

**SELECT KEY ECOLOGICAL ATTRIBUTES - Identify a key ecological attribute for the selected target. Select from the list of key attributes in the bottom box or type in a new one in the top box.**

Target:

To add a new Key Attribute:  
 Select a category... then type in a new attribute here. Click the button to add it to the list.

Landscape Context	<input type="text"/>	Add New Attribute to List
Condition		
Size		

List of categories and key attributes -- select from the list, then go to the next steps of the wizard. (the list can be sorted by the viability categories of landscape context, condition, and size)

Categories:                      Key Attributes:                      Categories listed:

Condition	Characteristic Species - Gunnison prairie dog
Condition	Characteristic Species - Kachina daisy
Condition	Characteristic Species - rare plants
Condition	Community architecture
Condition	Depredation & parasitism
Condition	Flannelmouth and bluehead sucker
Condition	Indicator Species - Gray Vireo
Condition	Intactness of ecological systems
Condition	Native fish assemblage
Condition	native riparian vegetation
Condition	Pollination
Condition	Population structure & recruitment

Remove Selected Attribute                      Edit Selected Attribute                      Key Attributes & Categories

Save data in:  
 New Row  
 Selected Row (replace)

<< Previous                      Next >>                      Save and Exit                      Cancel

Select the **Next >>** button when you are ready to move on.

3. In Step Three of the Viability Wizard (below), specify the indicator that will directly inform you of the status of the key ecological attribute. There are two options for selecting an indicator:
- Type a new indicator into the text box and click the **Add New Indicator to List** button to add the indicator to the list of indicators.
  - Select an indicator from the list of indicators.
  - Use the **Remove Selected Indicator** and **Edit Selected Indicator** buttons to change the list as appropriate. (Remember that removing and editing indicators in the list will remove or change those indicators throughout the workbook, if they have been used elsewhere in the workbook.)

**Assessment of Target Viability - Step 3 of 8**

**SELECT INDICATOR - Identify an indicator that will directly inform you of the status of the key ecological attribute. Select from the list of previously entered indicators in the bottom box or type in a new one in the top box.**

Key Attribute:

Add new Indicators -- type here. Click the button to add new indicator to the list below.

List of Indicators - select an indicator.

% of key private lands that are under conservation easement  
 % of mainstem and main tributaries dominated by native vegetation  
 % resprouting in treated areas  
 areal extent  
 Dolores River hydrograph  
 fire regime departure from natural  
 Fragmentation of ecological systems  
 High quality (A or B) occurrences of each of the rare riparian communities is found within the San Migu  
 High Quality (Condition rank) viability of needed Gunnison sage grouse occurrence  
 High quality (EO rank) occurrences of the kachina daisy  
 high quality (occurrence ranks) needed 5 rare plant species occurrences  
 High quality (occurrence ranks) needed Gunnison prairie dog occurrences  
 High quality occurrence of gray vireo

Save data in:

New Row  
 Selected Row (replace)

Select the **Next >>** button when ready to move on.

If you start the wizard with data from a selected row in the Viability table, then select a new indicator from another row of the Viability table, you will be asked whether you want the rating information text boxes to be cleared.

4. In Step Four of the Viability Wizard, enter the rationale behind selecting the key ecological attribute and indicator. This entry is one of the five documentation fields in the wizard that is stored in the comments of the Viability table.
5. In Step Five of the Viability Wizard (below), enter **Indicator Rating** descriptions for Poor, Fair, Good, Very Good indicator status (this step is not included in the basic version). Enter the basis for the indicator rating descriptions, and the confidence and reliability of the ratings.

Select the **Next >>** button when ready to move on.

6. In Step Six of the Viability Wizard (below), enter the indicator measurements and the desired indicator ratings.

Multiple indicator measurements over time can be entered. These measurements contain the following information:

- Date of measurement – the date associated with the measurement. Use the date spinners to assign the appropriate month and year.

- Current Indicator Measurement – the current status of the key ecological attribute in the context of the described indicator ratings.
- Current Rating – the current indicator rating for the key ecological attribute – Very Good, Good, Fair, or Poor.
- Trend – the direction of the measurement – Unknown, Strong Increase, Mild Increase, Flat, Mild Decrease, or Strong Decrease.
- Measurement source – Rough Guess, Expert Knowledge, Rapid Assessment, and Intensive Assessment options.
- Comment – information associated with these measurement, rating, and trend entries.

**Assessment of Target Viability - Step 6 of 8**

**Enter measurements and desired rating.**

Target: CO Plateau Cliff and Canyon

Key Attribute: Characteristic Species - Kachina daisy

Indicator: High quality (EO rank) occurrences of the kachina daisy

**Current Rating:**

1 of 1

Measurement: 1 A and 1 B occurrences

Rating:
   
 Poor
   
 Fair
   
 Good
   
 Very Good

Date: Jul 2003

Comment: confidence is high - CNHP eo ranks are A, B, and H in Lower Dolores River COP  
Confidence of the current rating: High

Trend:
   
Unknown
   
Strong Increase
   
Mild Increase
   
Flat
   
Mild Decrease
   
Strong Decrease

Measurement Source:
   
Rough Guess
   
Expert Knowledge
   
Rapid Assessment
   
Intensive Assessment

Add Citation

**Desired Rating:**

Rating:
   
 Poor
   
 Fair
   
 Good
   
 Very Good

Date: Feb 2014

Comment: Both to be A occurrences

Add Citation

Save data in:
   
 New Row
   
 Selected Row (replace)

<< Previous      Next >>      Save and Exit      Cancel

If one or more indicator measurements already exist, a yellow spinner will be visible in the upper left corner of the indicator measurement frame. Click the yellow spinner left to '0 of n' to enter a new record. If no indicator measurement has yet been entered, the yellow spinner will not appear; type directly into the available boxes.

In the desired rating section at the bottom, enter the desired rating and document the rationale behind selecting the desired status, and use the date spinners to assign the desired month and year.

- In Step Seven of the Viability Wizard, link objectives to this viability record. Select objectives from the list of objectives or type in a new objective in the Add new Objectives box then click the Add New Objective to List button. Click on the objectives from the List of Objectives to link them to this viability record.

- In Step Eight, enter any additional comments regarding this key attribute and indicator combination.  
  
Make sure the correct **Save data in:** radio button is checked. **New Row** means the data will be saved in a new row. **Selected Row** means that the data will be saved in the row in the Viability table that the cursor was in when the wizard was launched.  
  
Select **Save and Exit** when finished.

# 4 Stress, Source Worksheet

Use the Stress, Source worksheet (below) to record and rank the threats for each of the targets. Each target can be displayed in this worksheet.

Stresses and Threats		Viability assessment for this target (double click here)				Click the page-down icon ▼ on the right to reach the Threats				
San Miguel/Dolores River										
7	Sagebrush Shrubland				← To change targets, click on the target name (current target input will be saved).					
Entry assistance OFF										
Stresses		Severity	Scope	Stress Rank	User Override					
1	Condition: Altered Species composition / dominance	High	High	High						
2	Size: Reduced size of system	Medium	Medium	Medium						
3	Landscape Context: Altered Fire Area-Intensity Regime	High	Medium	Medium						
4	Condition: Reduced Number of characteristic species - Gunnison sage grouse	Very High	High	High						
5	Condition: Reduced number of characteristic species - Gunnison prairie dog	Very High	High	High						
6	Condition: Reduced intactness of ecological systems	Medium	High	Medium						
7				-						
8				-						
Threats - Sources of Stress		Condition: Altered Species composition / dominance	Size: Reduced size of system	Landscape Context: Altered Fire Area-Intensity Regime	Condition: Reduced Number of characteristic species - Gunnison	Condition: Reduced number of characteristic species - Gunnison	Condition: Reduced intactness of ecological systems			Threat to System Rank
Stresses #..		1	2	3	4	5	6	7	8	
Rank..		High	Medium	Medium	High	High	Medium	-	-	
1	Threat	Fire suppression								Medium
	Common Taxonomy	Fire & Fire Suppression								
	Contribution	Medium		High						
	Irreversibility	Medium		Medium						
	Threat Rank (override)									
	Threat Rank	Medium	-	Low	-	-	-	-	-	

To select/change targets, select the target name in row 3. A drop-down menu will appear (below). Select a target from the list.

**Targets** ▼ ✕

7. Sagebrush Shrubland ▼

There are two threat ranking methodologies:

1. **Stress and Source of Stress Ranking:** This is the standard threat ranking methodology which has been included in all previous versions of the CAP workbook. It uses two tables in the Stress, Source worksheet.
2. **Threat Ranking:** This is an alternative threat ranking methodology which does not include stresses. It uses one Threat table in the Stress, Source worksheet.

Both ranking methodologies will be described in the succeeding pages.

## 4.1 Stress and Source of Stress Ranking

---

**STRESSES:** Stresses recorded in the Stresses table (see above) represent altered or impaired key ecological attributes, defined in the viability assessment, that reduce the viability of the focal conservation targets. Therefore, enter the degraded key attribute as a stress.

To enter stresses:

1. Select one of the eight cells below the Stresses in column B.
2. To enter a stress,
  - Type directly into the stress table, or
  - Double-click the cell to make the Key Attribute drop-down list appear. The Key Attribute drop-down list contains key attribute selections.
  - Select the button to the right of the drop-down list to switch between:
    - i. the list of standard key attributes from the Menu worksheet, or
    - ii. a list of this target's attributes only (as defined in the Viability assessment).
  - Select a key attribute from the list.
  - Once entered, you can edit the stress to add the words “altered” or “impaired” to indicate the degraded nature of the key attribute.
3. Rank severity and scope for each stress: Very High, High, Medium or Low. (Stress ranking detail is described in section 4.5). Overall stress rank is calculated automatically; users can directly enter an alternative stress rank in the User Override column to the right.
4. Select Comments in the toolbar to activate a comment box to document your input.

**THREATS:** Threats (sources of stress) represent the proximate cause of the stress (e.g., river channelization, over-harvesting, fire suppression). Many sources of stress are driven by social, economic, or political underlying causes that often are the focus of our conservation strategies.

Use the Threats - Source of Stress table to record the direct threats, i.e., the proximate cause of the stress. Underlying causes should be captured in the threat comment fields to aid in the selection of conservation strategies.

To move to the Threats - Source of Stress table, click the page-down button (the downward pointed triangle) on the custom toolbar. To return to the Stress table, click the page-up button (the upward pointed triangle).

The Threats - Source of Stress table (below) contains places for twelve threats across eight targets (more can be added when these columns and rows are full). The targets are listed at the top of the Threats table with their stress ranks. Each threat is made up of six rows containing the name of the project-specific threat, the common taxonomy name for the threat, three rows for entering ranks (contribution, irreversibility, and threat rank override), and the calculated threat rank. See Appendix E for more about the taxonomy of threats.

Threats - Sources of Stress		Condition: Altered Species composition / dominance	Size: Reduced size of system	Landscape Context: Altered Fire Area-Intensity Regime	Condition: Reduced Number of characteristic species - Gunnison	Condition: Reduced number of characteristic species - Gunnison	Condition: Reduced intactness of ecological systems	-	-	Threat to System Rank
		1	2	3	4	5	6	7	8	
Stresses #..		High	Medium	Medium	High	High	Medium	-	-	
Rank..										
1	Threat	Fire suppression								Medium
	Common Taxonomy	Fire & Fire Suppression								
	Contribution	Medium		High						
	Irreversibility	Medium		Medium						
	Threat Rank (override)									
	Threat Rank	Medium	-	Low	-	-	-	-	-	
2	Threat	Killing - shooting and poisoning								Medium
	Common Taxonomy	Hunting & Collecting Terrestrial Animals								
	Contribution					High				
	Irreversibility					Medium				
	Threat Rank (override)									
	Threat Rank	-	-	-	-	Medium	-	-	-	
3	Threat	Invasive/alien species								Yellow
	Common Taxonomy	Invasive Non-Native/Alien Species								
	Contribution	High		Medium						

← To enter or edit a threat, double-click on the cell.

To enter threats:

1. The first row of a block of threat data contains the project-specific name of the threat. To enter the data for a threat, double-click on the appropriate cell. A form will appear (below).

2. Enter a project-specific threat name. Do one of the following:
  - o Type the threat name into the text box.
  - o Select a threat from the **List of Threats** that have already been entered into the workbook.
3. Enter a common taxonomy threat name.
  - o Click **Select a Common Taxonomy Threat Name** to select from the list of the taxonomy of threats.
  - o Click the **Use common taxonomy name for both threat names** button to enter it in both the project-specific threat and the common taxonomy threat fields. .

Click **Save and Continue** to save the selected threat and common taxonomy name and to move down to the next record to enter another threat.

If you double-click on the row below each project-specific threat, you can again enter the threat's common **taxonomy classification**. The Threat Taxonomy form will appear that offers you the list of the common taxonomy of threats with descriptions and examples. See Appendix E for more about the taxonomy of threats.



You can hide the Common Taxonomy row if you prefer. Click the Table Format icon. A form will appear enabling you to hide or display the Common Taxonomy row.

1. **Rank Contribution** and **Irreversibility** for each source: Very High, High, Medium or Low. (Source ranking detail is described in section 4.6) Or you may bypass the contribution and irreversibility ranks and enter one threat rank in the Override row.

The Threat ranks in the sixth row are calculated automatically.

2. Select **Comments** in the toolbar to activate a comment box to document your input. Comments may be entered for each threat.

## 4.2 Alternative Ranking Methodology

The CAP workbook has an alternative threat ranking methodology. This method allows the user to select a simpler threat-ranking methodology that removes the step of identifying and ranking stresses.

The user ranks threats directly for severity, scope, and irreversibility of the threat. In place of stresses, which are typically altered key attributes, the new method allows the user to add a linking reference between a target's threats and its key attributes.

To switch to the alternative threat ranking methodology:

1. On the Home worksheet, click on **Workbook Setup**.
2. Click Select Threat Ranking Method.
3. Choose Threats without Stresses (non-standard method).
4. Click Save and Exit. A Threats table (below) replaces the Stresses table in the third worksheet, and the Threats - Source of Stress table used in the standard method is hidden.

Threats		Viability assessment for this target (double click here)						
San Miguel/Dolores River								
1	San Miguel River System	<-- To change targets, click on the target name (current target input will be saved).						
▼ -- To enter or edit a threat, double-click on the desired cell.								
Threats	Severity of Threat	Scope of Threat	Threat Magnitude	Irreversibility	Threat to System Rank	Common Taxonomy	Key Attribute References	
1	Invasive/alien species	Very High	Low	Low	High	Low	Invasive Non-Native/Alien Species	3
2	Primary home development	Medium	High	Medium	Low	Low	Housing & Urban Areas	2
3	SWWSI - new water projects	High	High	High	High	High	Dams & Water Management/Use	2
4	Development of roads or utilities	Very High	Very High	Very High	High	Very High	Roads & Railroads	1
5	Recreational use	Very High	Very High	Very High	Very High	Very High	Recreational Activities	2
6	Operation of drainage or diversion systems	Medium	Very High	Medium	Very High	High	Dams & Water Management/Use	2
7				-		-		-
8				-		-		-

To enter threats:

1. The first column of the Threats table after the number is for the project-specific name of the threat. To enter the data for a threat, double-click on the appropriate cell. The form described above will appear. Follow the steps described above.
2. Rank each threat for Severity, Scope and Irreversibility: Very High, High, Medium or Low. Enter the ranks directly into the table or use the form shown below.
3. Enter each threat's common taxonomy classification in the next-to-last column of the Threats table. Double-click on the appropriate cell. The Threat Taxonomy form will appear that offers you the list of the common taxonomy of threats with descriptions and examples. See Appendix E for more about the taxonomy of threats.
4. Link key attributes to each threat in the last column of the Threats table. Double-click on the appropriate cell in column G, I or K. A form will appear that contains the threat ranks and comment and offers you the list of the key ecological attributes that have been entered in the Assessment of Target Viability table for this target (below). Highlight the key attributes that are impacted by this threat, then click Save and Exit. A number will appear in the cell for that threat in the last column of the table that tells how many key attributes are linked to that threat.

**Threat ranks and comment for the selected threat and target**

Threat:  Threat to Target Rank:

Target:

Threat ranks

Severity	Scope	Threat Magnitude	Irreversibility	Severity Scope Irreversibility
<input type="button" value="Very High"/>	<input type="button" value="Low"/>	<input type="button" value="Low"/>	<input type="button" value="High"/>	

Comment for this threat and target:

Select the attributes affected by this threat for this target.

Landscape Context	Surface Water Flow Regime of San Miguel River
Condition	Flannelmouth and bluehead sucker
Condition	native riparian vegetation
Condition	riparian community composition and diversity
Condition	Soil/Sediment Erosion-Deposition Regime
Size	length of native riparian vegetation

5. Use the above form or select Comments in the toolbar to activate a comment box to document your input. Comments may be entered for each threat.

### 4.3 Table Formats and Scrolling to More Stresses or Threats

---

Use the Table Format form if you want to:

- Move between the Stress table and the Threat - Source of Stress table.
- Page down and up within the Threat - Source of Stress table.
- Scroll to the next set of eight stresses when the Stress table has eight or more stresses entered.
- Scroll to the next set of twelve threats when the Threat - Source of Stress table has twelve or more threats entered.
- Scroll to the next set of eight threats when the Threat table has eight or more threats entered -- in the alternative threat ranking method.
- Hide and unhide the common taxonomy row in the standard threat ranking method.

To launch the Table Format form, do one of the following:

1. In the Tables menu, choose **Select Table Format**.
2. Select the Table Format toolbar.
3. Right-click the mouse to select the Table Format, or simply double-click the header of either table.

### 4.4 Copying Stress and Threat Data to Other Targets

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Sometimes the stress and threat ranks for one target are very similar to those of another target, and you may want to copy the data of one target to one or more other targets. To copy data:

1. Open the target in the Stress, Source(X) worksheet that contains the data that you want copied. If you want to copy only selected rows, select the rows.
2. From the Tables menu, select Create/Copy Rows...
3. Select Stress, Source: Copy Data to another Target.... A form will appear.
4. Select which target(s) you want the data copied to.
5. Confirm whether you want All Data copied or Selected Rows Only.
6. Click OK.



If you are using the standard stress and threat ranking methodology, and you copy selected rows of threats to another target (or all data to another target that already contains data), the threat ranks will NOT be copied over. This is because the stresses may be in different columns in the two targets' Threat - Source of Stress tables. You will need to enter the threat ranks manually.

Always check the results of the copying to make sure it is what you want!

## 4.5 Severity & Scope Ranking (for stress and alternate threat ranking)

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### Severity of Damage

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The level of damage to the conservation target that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

- Very High: Likely to destroy or eliminate the conservation target over some portion of the target's occurrence at the site.
- High: Likely to seriously degrade the conservation target over some portion of the target's occurrence at the site.
- Medium: Likely to moderately degrade the conservation target over some portion of the target's occurrence at the site.
- Low: Likely to only slightly impair the conservation target over some portion of the target's occurrence at the site.

### Scope of Damage

---

The geographic scope of impact on the conservation target at the site that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

- Very High: Likely to be very widespread or pervasive in its scope, and affect the conservation target throughout the target's occurrences at the site.
- High: Likely to be widespread in its scope, and affect the conservation target at many of its locations at the site.
- Medium: Likely to be localized in its scope, and affect the conservation target at some of the target's locations at the site.
- Low: Likely to be very localized in its scope, and affect the conservation target at a limited portion of the target's location at the site.

## 4.6 Threat (Sources of Stress) Ranks

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### Irreversibility

---

Irreversibility -- reversibility of the stress caused by the Source of Stress (or reversibility of the threat itself if using the alternative threat ranking methodology).

- Very High: Not reversible (e.g., wetlands converted to a shopping center).
- High: Reversible, but not practically affordable (e.g., wetland converted to agriculture).
- Medium: Reversible with a reasonable commitment of resources (e.g., ditching and draining of wetland).
- Low: Easily reversible at relatively low cost (e.g., off-road vehicles trespassing in wetland).

### Contribution

---

Contribution -- expected contribution of the source, acting alone, to the full expression of a stress (as determined in the stress assessment) under current circumstances (i.e., given the continuation of the existing management/ conservation situation).

- Very High: The source is a very large contributor of the particular stress.
- High: The source is a large contributor of the particular stress.
- Medium: The source is a moderate contributor of the particular stress.
- Low: The source is a low contributor of the particular stress.

## 4.7 Taxonomy of Threats: *Please go to Appendix E.*

---

## 5 The Summary Tables

The summary tables are in three separate worksheets:

1. The  $\Sigma$  Viability worksheet contains a new version of the Viability Summary table.
2. The  $\Sigma$  Threats worksheet contains a new version of the Summary of Threats table.
3. The  $\Sigma$  Stresses worksheet contains a new version of the Stress Matrix table.

### 5.1 Viability Summary

The Viability Summary table summarizes the ranks derived for landscape context, condition and size for each focal conservation target. This is a new summary table that replaces the Overall Viability Summary table and the Detailed Viability Summary table that was in the Summary worksheet of the previous version of the workbook.

- Viability summary data can be displayed for an unlimited number of targets or for selected targets if desired.
- Either current ratings or desired ratings can be displayed.
- Threat-to-target ranks can be displayed alongside the viability ranks.
- The table rows can be unhidden to display viability summary detail.



Select from the drop-down list at cell C4 of the table to switch between current ratings and desired ratings. Use the Table Format form to make all other format changes

Viability Summary					
San Miguel/Dolores River					
Conservation Targets	Landscape Context	Condition	Size	Viability Rank	Threat Rank
	Current Rating				
1 San Miguel River System	Good	Poor	Very Good	Fair	High
2 Lower Dolores River System	Poor	Fair	Fair	Fair	High
3 CO Plateau Cliff and Canyon	Very Good	Fair	Very Good	Good	Medium
4 PJ & Ponderosa Pine Woodland	Good	Fair	Very Good	Good	Medium
5 Montane-mixed shrubland/grassland mosaic	Fair	Fair	Good	Fair	High
6 Desert Shrubland	Fair	Fair	Good	Fair	High
7 Sagebrush Shrubland	Fair	Fair	Fair	Fair	High
8 High elevation forest/alpine mosaic	Very Good	Good	Very Good	Very Good	Medium
<b>Project Biodiversity Health Rank</b>				Fair	High

The Viability Summary table has a Table Format form (below) that will help you navigate through the various table formatting options. To launch the Table Format form, do one of the following:

- Choose the Select Table Format option in the Tables menu
- Select the Table Format toolbar button
- Right-click the mouse to select the Table Format
- or simply double-click the table header.

**Select Viability Summary Format**

Select the content and targets to display:

OK Cancel

Select the content to display:

- Key Attributes
- Indicators
- Calculated Rating
- User Override
- Weight
- Threat to Target Rank

Select the targets to display:

All targets

Selected targets only

1. San Miguel River System
2. Lower Dolores River System
3. CO Plateau Cliff and Canyon
4. PJ & Ponderosa Pine Woodland
5. Montane-mixed shrubland/grassland mo
6. Desert Shrubland
7. Sagebrush Shrubland
8. High elevation forest/alpine mosaic

Click the check boxes in the Table Format form to display (and hide) the following detailed viability summary data (see below for the detail of one target):

- The key attributes that apply to the selected target and category.
- The indicators that apply to the selected target and category.
- The calculated rating.
- The user override: Here, the user can choose a viability rating from the drop-down list.
- The weight: Here, the user can choose one of the one of the weight options from the drop-down list (the default weight is 1).
- The threat to target rank.

Viability Summary						
San Miguel/Dolores River						
Conservation Targets		Landscape Context	Condition	Size	Viability Rank	Threat Rank
Current Rating						
1	San Miguel River System	Good	Poor	Very Good	Fair	High
	Key Ecological Attributes					
	Very Good		1	1		
	Good	1	2			
	Fair					
	Poor		1			
	Indicator					
	Very Good		1	1		
	Good	1	2			
	Fair					
	Poor		1			
	Calculated Rank	Good	Poor	Very Good		
	User Override					
	Weight	1	1	1		

If you double-click a cell in the table in columns D - G, a form that lists the key attributes and indicators referenced by that cell will appear (below).

**Key attributes and indicators for this target and category:** (San Miguel River System, Condition) X

**Key Ecological Attributes**

- Flannelmouth and bluehead sucker (Poor)
- native riparian vegetation (Very Good)
- riparian community composition and diversity (Good)
- Soil/Sediment Erosion-Deposition Regime (Good)

**Indicator**

- population size of flannelmouth sucker and bluehead sucker (Poor)
- (Very Good)
- High quality (A or B) occurrences of each of the rare riparian communities is found within the San Miguel River system (Good)
- sedimentation regime (Good)

To open a comment box for documenting your weights, select the **Comments** button in the Toolbar.

To go to a specific target and category in either the Assessment of Target Viability worksheet or the Monitoring worksheet, place the cursor on the row for the desired target and category in the table and select the **Search** button (the binoculars) in the Toolbar, then select the **Viability** or **Monitoring** button.

## 5.2 Summary of Threats

The Summary of Threats table (below) in the 'Σ Threats' worksheet summarizes the Threat to Target rank from the Stress,Source worksheet for each target.

- This table is able to display all threats and all targets at once.
- It can also display only the threats and targets selected by the user.
- Threats may be sorted by rank (highest to lowest), alphabetically, or in a custom order selected by the user.
- The table summarizes threats by either the project-specific name or by the common taxonomy name.

The summary ranks at the right-hand side and at the bottom of the table summarize the displayed threat and target ranks only.

Select the Comments button in the toolbar to enter observations, interpretations, or any other comments regarding the Summary of Threats table.

If you select a cell in the table that contains a rank or a dash, referencing a single target and threat, then click the Search toolbar button (the binoculars), you will go directly to the selected threat for the selected target in the Stress, Source worksheet.

See Appendix D (Scoring Worksheet) for details about how the summary ranks are calculated.

Summary of Threats										
San Miguel/Dolores River										
(9 of 17 threats selected)										
Threats Across Targets		San Miguel River System	Lower Dolores River System	CO Plateau Cliff and Canyon	PJ & Ponderosa Pine Woodland	Montane-mixed shrubland/grassland mosaic	Desert Shrubland	Sagebrush Shrubland	High elevation forest/alpine mosaic	Overall Threat Rank
Project-specific threats		1	2	3	4	5	6	7	8	
1	Invasive/alien species	High	High	Medium	Medium	Medium	High	High	Low	High
2	Oil or gas drilling				High	High	Medium	High		High
3	Development of roads or utilities	Low	Medium		Medium	High	Medium	Medium		Medium
4	invasive fish		High							Medium
5	Fire suppression				Low	Medium	Low	Medium	Medium	Medium
6	Killing - shooting and poisoning						Medium	Medium		Medium
7	Crop production practices							Medium		Low
8	Mining practices								Medium	Low
9	Conversion to agriculture					Low				Low
Threat Status for Targets and Project		Medium	High	Low	Medium	High	Medium	High	Medium	High

The Summary of Threats table formatting options can be selected from a Table Format form (below). To launch the Table Format form, do one of the following:

- Choose the Select Table Format option in the Tables menu
- Select the Table Format toolbar button
- Right-click the mouse to select the Table Format
- Or, simply double-click the table header.

**Summary of Threats** [Close]

**Select the threats and targets to display:** [OK] [Cancel]

Select the threats to display:

- All threats
- All ranked threats
- User-defined list of threats

Click here to select the items to display

Select the targets to display:

- All targets
- Selected targets only

1.	San Miguel River System
2.	Lower Dolores River System
3.	CO Plateau Cliff and Canyon
4.	PJ & Ponderosa Pine Woodland
5.	Montane-mixed shrubland/grassland mo
6.	Desert Shrubland
7.	Sagebrush Shrubland
8.	High elevation forest/alpine mosaic

Sort Threats:

- By Rank
- In the order of the user-defined list
- Alphabetically

Select the type of threat:

- Project-specific threats
- Project-specific threats (Common taxonomy)
- Common taxonomy

### Editing Threats from the Summary Table

If you double-click a threat name in column C, a form appears (below).

**Enter and Edit Threats** [Close]

**Project-specific threat # 1**

Edit the selected entry here.

Invasive/alien species

To change this threat to another existing threat across all targets, click the button.

Go to Form to Merge Threats

**Common taxonomy threat name**

Invasive Non-Native/Alien Species

Select a Common Taxonomy Threat Name

Use common taxonomy name for both threat names

Remove Selected Threat from All Targets

Save and Exit

Exit

With this form, you can:

1. **Edit the project-specific threat name.** Simply type the changes in the text box.
2. **Select or change the common taxonomy threat name.** Each threat has a project-specific name and, optionally, a common taxonomy name. These names are typically entered in the Stress, Source worksheet; however, the common taxonomy name can also be added here.

Click the **Select a Common Taxonomy Threat Name** button; another form appears that enables you to specify the common taxonomy threat for the selected threat name. The common taxonomy threat that you select will be automatically entered into the Threat table in the Stress, Source worksheet for every target where that threat appears. See Appendix E for more information on the common taxonomy of threats.

3. **Remove the selected threat from all targets.** To do this, click **Remove Selected Threat from All Targets**. You will be asked to confirm. Click **Yes** and the threat will be removed from all targets.
4. **Merge two threats into one.** Click the **Go to Form to Merge Threats** button; another form appears (see below). Select the two threats to be merged together: the first threat selected is the default threat – its data is preserved whenever there is a difference between the default threat's data and the secondary threat's data. Links to other areas of the workbook are combined so that no links are lost or duplicated.

**Merge two threats into one.**

Select the two threats that you want merged from the list below, then click OK.

The first threat that you click will be the default threat -- the threat whose values will be retained if there is a difference between the two threats' entries.

Default threat:  
Recreational use

Second threat:  
Recreational vehicles

OK Cancel

List of threats:

- invasive fish
- Invasive/alien species
- Killing - shooting and poisoning
- Mining practices
- Oil or gas drilling
- Operation of dams or reservoirs
- Operation of drainage or diversion systems
- Plague
- Primary home development
- Recreational use
- Recreational vehicles
- SWSI - new water projects
- Wild horses

## Rank Threats and Link Actions / Indicators to Threats by Target:

If you select a cell in the Summary of Threats table that contains a rank or a dash, your selection defines a threat for a target. If you double-click on that cell, one of two forms will appear. The form will either look like this:

### Threat ranks and comment for the selected threat and target

**Threat ranks and comment for the selected threat and target**

Threat:  Threat to Target Rank: **Very High**

Target:

Stresses	Stress Rank	Source of Stress Ranks	Threat Rank
		Contribution   Irreversibility   Override	
1 Landscape Context: Altered Surface Water Flow Regime of Lower Dolores River	High	Very High   High   [ ]	High
2 Condition: Altered native riparian vegetation	High	Medium   High   [ ]	Medium
3 Condition: Reduced size of roundtail chub population	High	High   High   [ ]	High
4 Condition: Altered Native fish assemblage	High	Very High   High   [ ]	High

Comment for this threat and target:

To enter new stresses or threats, go to the Stress/Source worksheet.

Strategic Actions & Indicators for this Threat

Irreversibility Contribution | Stress/Source Worksheet for this Target | Save and Exit | Cancel

...or it will look like this:

### Strategic actions and indicators addressing this threat and target

**Strategic actions and indicators addressing this threat and target:**

Threat:

Target:

**Strategic Actions**

1. Assess any new water projects for impacts to key elements of the flow regime
3. Develop partnerships with key water users to work cooperatively to protect the elements of the flow regime which have been identified as necessary to protect water dependent biodiversity.
8. Obtain agreement to work towards improved management at McPhee Dam
10. Participate in Statewide Water Supply Initiative to ensure projects do not compromise viability of water dependent targets
15. Select key audiences and give presentations and field tours to distribute lessons learned from tamarisk project
17. Work with relevant agencies and partners to develop a flow prescription for the Dolores River that protects water dependent biodiversity

**Indicator**

2. % of mainstem and main tributaries dominated by native vegetation
5. Dolores River hydrograph
23. MOU in place to implement flow prescriptions on Dolores River
27. population size of flannelmouth sucker
29. population size of roundtail chub

Edit the list:

- View list
- Add / Remove Strategic Actions
- Add / Remove Indicators

Threat Ranks and Comment for this Threat

Exit

You can switch between the two forms by clicking on the button in the lower right-hand corner.

The first form, **Threat ranks and comment for the selected threat and target**, enables you to rank and enter a comment for the selected threat and target.



You must enter the stresses and the name of the threat for each target in the Stress, Source worksheet. Click the **Stress/Source Worksheet for This Target** to go directly from the Threat ranks and comment form to the Stress, Source worksheet for the selected target.

The second form, **Strategic actions and indicators addressing this threat and target**, contains a list of the strategic actions and indicators that address that threat for that target. To add or remove links:

1. Click **Add / Remove Strategic Actions** or **Add / Remove Indicators** option to display the list of actions or indicators (below).

Strategic actions and indicators addressing this threat and target: ✕

Threat:

Target:

1. Assess any new water projects for impacts to key elements of the flow regime
2. Develop an agreed upon desired future condition and a system of indicators for BLM lands that supports needed B
3. Develop partnerships with key water users to work cooperatively to protect the elements of the flow regime which
4. Eradicate purple loosestrife (and any other A list species as found) and prevent its reestablishment.
5. Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the Sa
6. Identify key elements of the San Miguel River flow regime that are needed to protect water dependent biodiversit
7. Influence BLM planning efforts to minimize impacts to biodiversity.
8. Obtain agreement to work towards improved management at McPhee Dam
9. Participate in county planning efforts for oil and gas exploration and development to ensure that biodiversity impa
10. Participate in Statewide Water Supply Initiative to ensure projects do not compromise viability of water dependent
11. Present TNC's energy and biodiversity initiative as a "best management" practice methodology for oil and gas com
12. Protect 2 Gunnison's prairie dog colonies through conservation easements.
13. Pursue private land protection on a few key parcels
14. Revisit and retreat as needed invasive species removal sites
15. Select key audiences and give presentations and field tours to distribute lessons learned from tamarisk project
16. Support partner efforts for special designations that protect biodiversity on public lands
17. Work with relevant agencies and partners to develop a flow prescription for the Dolores River that protects water

Edit the list:

View list

Add / Remove Strategic Actions

Add / Remove Indicators

2. Highlight the actions / indicators that are linked to the selected threat.
3. If you change the highlighted list, the Save button will appear. Click Save to store the changes.
4. Click Exit when done.

### 5.3 Stress Matrix

The Stress Matrix table (below) provides a view of the Stresses or altered Key Ecological Attributes and their ranks across the targets.

- This table is able to display all stresses and all targets at once.
- It can also display only the stresses and targets selected by the user.
- Stresses may be sorted by rank (highest to lowest), alphabetically, or in a custom order selected by the user.

Stress Matrix		San Miguel/Dolores River							
Stresses (Altered Key Ecological Attributes) Across Systems		San Miguel River System	Lower Dolores River System	CO Plateau Cliff and Canyon	PJ & Ponderosa Pine Woodland	Montane-mixed shrubland/grassland mosaic	Desert Shrubland	Sagebrush Shrubland	High elevation forest/alpine mosaic
		1	2	3	4	5	6	7	8
1	Condition: Reduced Intactness of ecological systems	-	-	-	-	High	-	-	-
2	Condition: Altered Characteristic Plant Communities	-	-	-	High	-	-	-	-
3	Condition: Altered Native fish assemblage	-	High	-	-	-	-	-	-
4	Condition: altered native riparian vegetation	High	High	-	-	-	-	-	-
5	Condition: Altered Sediment Erosion-Deposition Regime	Low	-	-	-	-	-	-	-
6	Condition: Altered Species composition / dominance	-	-	-	Medium	Medium	High	High	-

<-- To click on format next to

 Stress ranks must be changed at the Stress/Source worksheet, not here.

Select the **Comments** button in the toolbar to activate a comment box to enter observations, interpretations, or any other comments regarding the Stress Matrix table.

If you select a cell in the Stress Matrix that contains a rank, then click the **Search** toolbar button (the binoculars), you will go directly to the selected stress for the selected target in the Stress,Source worksheet.

## 6 Strategies Worksheet

The Strategies worksheet can create various tables that describe the project's conservation strategies. Only one table is created and visible in the Strategies worksheet at a time. Below is an example of one of the many tables that are available in the Strategies worksheet.

Strategies	
San Miguel/Dolores River	
#	Objectives and Strategic Actions
Objective	<b>(1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.</b>
Strategic action	Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the San Miguel River
Strategic action	Revisit and retreat as needed invasive species removal sites
Objective	<b>(2) Through 2013, prevent reestablishment of tamarisk through annual monitoring and maintenance level control efforts.</b>
Strategic action	Revisit and retreat as needed invasive species removal sites

A conservation strategy is a broad course of action intended to achieve a specific objective (i.e. outcome) that abates a threat or enhances the viability of a conservation target. There are three fundamental components to conservation strategies: Objectives, Strategic Actions and Action Steps. In addition, Monitoring Indicators should be specified that allow for measuring the effectiveness of conservation strategies (i.e., progress towards meeting objectives).

This section includes instructions for building the various tables in the Strategies worksheet. If you are unfamiliar with the process, concepts and terms related to developing conservation strategies, go first to Appendix C (Developing Strategies).

## 6.1 Entering Data into the Strategies worksheet

With no data entered, the table includes only the header row. Rows are added to the table as data is added.

**Wizards:** There are three wizards to use to build the tables in the Strategies worksheet: the Strategy Identification, Strategy Ranking, and Action Steps wizards, which are described later. In the basic version, only the Strategy Identification wizard is used.

Some data may be directly entered into some of the tables (see section 6.5); however, the wizards must be used to create the three fundamental components to conservation strategies -- objectives, strategic actions and action steps -- and to link these components both to each other and to other data elements in the workbook (such as indicators, threats, and key attributes.)



The three fundamental components to conservation strategies -- objectives, strategic actions and action steps -- cannot be entered directly into the Strategies worksheet. A wizard must be used to define these components and to link them to each other.

Once the components are created, descriptive data for strategic actions and action steps can be directly entered into the Strategies worksheet tables.

**Shortcuts for Entering Data into the Strategies Tables:** Several shortcuts are available to bypass the step-by-step wizard process.

- **Double-click editing of component names:** Once objectives, strategic actions and indicators have been created, they may be edited in the Strategies and Monitoring worksheets without using the wizards. Double-click on any objective, strategic action or indicator in the Strategies or Monitoring table and an edit box will appear containing the selected component. Edit the text and click OK. The change will become effective for wherever that component is referenced in the Viability, Strategies and Monitoring worksheets.
- **Direct entries into tables:** Most data that describes or ranks the strategic actions and all data that describes the action steps may be directly entered into the Strategies worksheet if the table is in a format that displays the detail for actions and action steps (see the Table Formats section below for details).
- **Shortcut Wizard Access:** If you double-click cells that are displayed in black font (protected cells) within any of the tables in the Strategies worksheet, a wizard will open at the appropriate step for immediate data entry.

See section 6.5 for more explanation of the above shortcuts.

**Indicator measurements** that support objectives can be displayed with the ‘Objectives & Indicators with measurement detail’ format option in the Strategies worksheet (see section 6.6).

- Indicator measurements of **key attributes** are entered in the Viability worksheet. These indicator measurements can be linked to objectives either in the Viability worksheet or via the Strategy Identification wizard.
- Indicator measurements of **threats** and other items are entered in the Monitoring worksheet. These indicator measurements can be linked to objectives either in the Monitoring worksheet or via the Strategy Identification wizard.

**Monitoring program data** (methods, etc.) for each indicator is now displayed only in the Monitoring worksheet. .

## 6.2 Strategy Identification Wizard

Use this wizard to set objectives, identify strategic actions and link them to specific objectives, to enter the percent complete status of the objective, and to identify which indicator measurements measure progress towards achieving the objectives.

Open the Strategy Identification wizard by selecting the **wizard** icon on the custom tool bar along the right side of the screen; select the **Strategy Identification** radio button and click **OK**. You may also open the wizard by simply double-clicking any cell in an objective row within the Strategies table.

1. In Step 1 of the wizard (below), enter a new objective in the top box then select the **Add New Objective to List** button. Use the **Remove Selected Objective** and the **Edit Selected Objective** buttons to manage the list of objectives.

**Strategy Identification - Step 1 of 5**

Use this first step of this wizard to create a list of Objectives.

Then, select one objective from the list, and complete the remaining steps of this wizard to link each objective to the strategic actions and to the indicator measurements that support the objective.

You may edit multiple objectives without ever leaving the wizard. After editing an objective, return to step 1 and switch to a different objective -- the wizard will ask you if you want to save your changes for the prior objective before switching to the next objective.

1. Add new Objectives -- type here.  
Click the button to add new item to the list below.

Add New Objective to List    Objectives

2. List of Objectives -- select an objective from the list to go to the next steps of the wizard.

(1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.  
 (2) Through 2013, prevent reestablishment of tamarisk through annual monitoring and maintenance level control efforts.  
 (3) By 2009, eradicate any populations that are found of Colorado Weed list A species (purple loosestrife).  
 (4) By 2008, at least 2 other priority landscapes in the Southwest have begun woody invasive eradication projects based on lessons  
 (5) By 2013, an operational flow regime exists at McPhee Dam that is sufficient to protect water dependent targets (warm water fishes)  
 (6) By 2006, all new water projects will take into account key elements of the San Miguel River flow regime that are needed to protect  
 (7) By 2013, key public and private lands of the Lower Dolores River and surrounding areas (specific locations to be selected) are protected  
 (8) Through 2013, no oil and gas roads or pads will be located within rare plants or plant community occurrences. If oil and gas drilling  
 (9) By 2013, X acres (TBD) in at least 2 viable Gunnison prairie dog colonies are under full protection status.

Remove Selected Objective    Edit Selected Objective

<< Previous    Next >>    Save and Exit    Cancel

Select the **Next >>** button when you are ready to move on.

2. In Step 2 (below) of the wizard, enter a new strategic action and select the **Add New Action to Lists** button. Click on up to sixteen strategic actions in the List of Strategic Actions to link them to the selected objective. Use the Move Up and Move Down buttons to select the order that you want the strategic actions displayed in for the selected objective. Use the Remove Action and the Edit Action buttons to manage the list of actions. (Note: Because multiple actions are selected from the list of actions in step 2, when you select the Remove Action and the Edit Action buttons, a new list of the strategic actions will appear allowing you to select only one action to remove or edit.).

**Strategy Identification - Step 2 of 5**

**What Strategic Actions will achieve this Objective?**

Objective: (1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.

**Strategic Actions to achieve this Objective:** (Reorder the list with the buttons at the right.)

Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the San Miguel River  
Revisit and retreat as needed invasive species removal sites

Move Up

Move Down

1. Add new Actions -- type here.  
Click the button to add new item to the list below.

Add New Action to Lists

Strategic Actions

2. List of Strategic Actions  
Click on an action to add to or remove from the above list:

Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the San Miguel River  
Identify key elements of the San Miguel River flow regime that are needed to protect water dependent biodiversity  
Influence BLM planning efforts to minimize impacts to biodiversity.  
Obtain agreement to work towards improved management at McPhee Dam  
Participate in county planning efforts for oil and gas exploration and development to ensure that biodiversity impacts are minimized  
Participate in Statewide Water Supply Initiative to ensure projects do not compromise viability of water dependent targets  
Present TNC's energy and biodiversity initiative as a "best management" practice methodology for oil and gas companies, permit  
Protect 2 Gunnison's prairie dog colonies through conservation easements.

Remove Action

Edit Action

<< Previous

Next >>

Save and Exit

Cancel

Select the **Next >>** button when you are ready to move on.

3. In Step 3 of the wizard, enter the percent complete status of the objective, and add any comments you want to add to this objective.

Multiple percent complete entries over time can be entered. These entries contain the following information:

- Date – the date associated with the percent complete status. Use the date spinners to assign the appropriate month and year.
- Percent Complete – the current status of the objective. Use the scroll bar to assign the appropriate percentage. (Scroll to the far left to make no entry.)
- Comment – information associated with this percent complete status.

**Strategy Identification - Step 3 of 5**

**Enter the Objective percent complete and comment.**

Objective: (1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.

Percent Complete: Click the yellow spinner left to '0 of n' to enter a new record:

1 of 2  

Date: Jan    
2007  

Percent Complete: 45 %    
(use the scroll bar to enter %)

Comment: here's a comment regarding percent complete

Add Citation

Comments (Description, Prerequisites, Contingencies, etc.):  
comment about the objective

Add Citation

<< Previous    Next >>    Save and Exit    Cancel

If one or more percent complete entries already exist, a yellow spinner will be visible in the upper left corner of the percent complete frame. Click the yellow spinner left to '0 of n' to enter a new record. If no entry has yet been entered, the yellow spinner will not appear; type directly into the available boxes.

4. Use Step 4 of the wizard to link indicator measurements to this objective.



In this version of the workbook, **objectives are linked to the things being measured** by indicators – viability rows, threats to targets, or other (non-viability, non-threat) items – rather than simply to an indicator name..

The things being measured are grouped into three tabs in the bottom half of Step 4. Each tab contains a list:

- Viability Measurements,
- Threat Measurements, and
- Other Measurements.

Click on the rows in the lists to highlight (link) the objective to the thing being measured.

To view only selected indicators in each of the three lists, click the **Select Indicators for user-defined list** button. A form will appear where you can select one or more indicators whose measurements will appear in the Viability Measurements, Threat Measurements, and Other Measurements lists. You can switch from one set of selected indicators to a new set without losing any data.

**Strategy Identification - Step 4 of 5**

**What Indicator measurements support this Objective?**

Objective: (1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.

**For each tab below...  
...Key Attribute, Threats, and Other Measurements...  
...select the measurements that support this objective.**

**Refine the lists below by selecting the indicators to display ->**

Select indicators:  All Indicators  User-defined list of indicators

Select indicators for user-defined list

To create new indicators that are not measuring key attributes or threats, go to step 5.

**Key Attribute Measurements** | **Threat Measurements** | **Other Measurements**

Create new key attribute indicators and measurements in the Viability worksheet.

Target	Key Attribute	Indicator
1 San Miguel River System	Land	Surface Water Flow Regim
1 San Miguel River System	Cond	Flannelmouth and bluehe: population size of flannelmouth sucker and b
1 San Miguel River System	Cond	native riparian vegetation
1 San Miguel River System	Cond	riparian community compo
1 San Miguel River System	Cond	Soil/Sediment Erosion-Dep
1 San Miguel River System	Size	length of native riparian v
2 Lower Dolores River System	Land	Surface Water Flow Regim
2 Lower Dolores River System	Cond	Native fish assemblage
2 Lower Dolores River System	Cond	native riparian vegetation
2 Lower Dolores River System	Cond	Roundtail Chub populatio
2 Lower Dolores River System	Size	length of native riparian v

<< Previous      Next >>      Save and Exit      Cancel

5. In Step 5 of the wizard, you can create other (non-viability, non-threat) indicators to link to the selected objective.



Enter indicators for:

- Key attributes in the Viability worksheet (with Viability wizard).
- Threats in the Monitoring worksheet (with Threat and Other Measurements wizard).

Follow the four steps in Step 5 to:

1. Add an indicator.
2. Describe or categorize the thing being measured (for example, 'fund-raising' or 'capacity development'). Type in a new description or select from the list.
3. Select the target or targets that are measured, or select the 'This is not associated to a specific target' option.
4. Click the Add to Other Measurements in Step 4' button to add this indicator to the list of Other Measurements (the third tab) in step 4.

**Strategy Identification - Step 5 of 5**

**Enter non-viability, non-threat indicators here.**

Objective: (1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.

**Note! Enter indicators for:**

- Key attributes in the Viability worksheet (with Viability wizard).
- Threats in the Monitoring worksheet (with Threat and Other Measurements wizard).

**Complete the four steps below to add this indicator to the list of other measurements for this objective.**

1. Type a new indicator here.
2. Enter a short description or classification of what is being measured.  
 Type here or ...  ... select an item from the list.
3. What target or targets, if any, does this measurement address?  
 All targets  
 Selected targets (select from list)  
 This is not associated with a specific target.  
 Select one or more targets from the list:  

1.	San Miguel River System
2.	Lower Dolores River System
3.	CO Plateau Cliff and Canyon
4.	PJ & Ponderosa Pine Woodland
5.	Montane-mixed shrubland/grassland mosa
6.	Desert Shrubland
4. Click to Save

<< Previous    Next >>    Save and Exit    Cancel

Select **Save and Exit** when finished.

## 6.3 Strategy Ranking Wizard

Use this wizard to modify strategic actions, as warranted, and to estimate benefits, feasibility, and costs of the strategic actions that support objectives. This wizard is only available in the full version.



This wizard provides the opportunity to compare benefits, feasibility, and cost information for alternative strategies to help a planning team determine which strategic actions should be implemented. If you already know which strategic actions will be implemented and don't want to compare among alternatives, you can **SKIP** this wizard and instead, enter strategic actions in the Strategy Identification Wizard then go straight to the Action Steps wizard to create the work plan for action.

Open the Strategy Ranking wizard by selecting the **wizard** icon on the custom tool bar along the right side of the screen, select the **Strategy Ranking** radio button and select **OK**. You may also open the wizard by simply double-clicking most cells in an action row within the Strategies table.

1. In Step 1 of the wizard (below), select one of your strategic actions. Or, to add a new action to this objective, enter a new strategic action in the Add new Strategic Actions box then click the **Add New Action to List** button. Use the **Remove Selected Action** and the **Edit Selected Action** buttons to manage the list of actions.

**Strategy Ranking - Step 1 of 7**

Use this first step of this wizard to create a list of Strategic Actions.

Then, select one strategic action from the list, and complete the remaining steps of this wizard. Click one of the two buttons at the bottom left to select the desired task.

**Strategy Ranking: Steps 1 - 7**

You may edit multiple strategic actions without ever leaving the wizard. After completing steps for an action, return to step 1 and switch to a different action -- the wizard will ask you if you want to save your entries for the prior action before switching to the next action.

1. Add new Strategic Actions -- type here.  
Click the button to add new item to the list below.

2. List of Strategic Actions  
Select an action from the list to go to the next steps of the wizard.

Assess any new water projects for impacts to key elements of the flow regime  
Develop an agreed upon desired future condition and a system of indicators for BLM lands that supports needed biodiversity and  
Develop partnerships with key water users to work cooperatively to protect the elements of the flow regime which have been impacted  
Eradicate purple loosestrife (and any other A list species as found) and prevent its reestablishment.  
Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the San Miguel River  
Identify key elements of the San Miguel River flow regime that are needed to protect water dependent biodiversity  
Influence BLM planning efforts to minimize impacts to biodiversity.  
Obtain agreement to work towards improved management at McPhee Dam  
Participate in county planning efforts for oil and gas exploration and development to ensure that biodiversity impacts are minimized  
Participate in Statewide Water Supply Initiative to ensure projects do not compromise viability of water dependent targets

2. In Step 2 of the wizard (below), link the strategic action to one of your listed objectives in the upper portion of the form and assign a Contribution rank in the bottom portion of the form. Select the **Contribution** button to see a description of the Contribution ranks.

**Strategy Ranking - Step 2 of 7**

**What Objectives are supported by this Strategic Action?**

Strategic Action: Assess any new water projects for impacts to key elements of the flow regime

Strategic Action Taxonomy: Species Management Select a Strategic Action - Common Taxonomy

Select the Objectives that this Action supports:

(1) By 2006, eradicate tamarisk and other woody invasives from the San Miguel River and major tributaries.  
 (2) Through 2013, prevent reestablishment of tamarisk through annual monitoring and maintenance level control efforts.  
 (3) By 2009, eradicate any populations that are found of Colorado Weed list A species (purple loosestrife).  
 (4) By 2008, at least 2 other priority landscapes in the Southwest have begun woody invasive eradication projects based on lessons  
 (5) By 2013, an operational flow regime exists at McPhee Dam that is sufficient to protect water dependent targets (warm water fishes)  
 (6) By 2006, all new water projects will take into account key elements of the San Miguel River flow regime that are needed to protect  
 (7) By 2013, key public and private lands of the Lower Dolores River and surrounding areas (specific locations to be selected) are protected  
 (8) Through 2013, no oil and gas roads or pads will be located within rare plants or plant community occurrences. If oil and gas drilling  
 (9) By 2013, X acres (TBD) in at least 2 viable Gunnison prairie dog colonies are under full protection status.

Contribution:  
 Rank the level of contribution of this action to the objectives that you highlighted above:

Contribution

Very High

High

Medium

Low

-

**Contribution**

Strategy Ranking Action Workplan << Previous Next >> Save and Exit Cancel

Select the **Next >>** button when you are ready to move on.

3. In Step 3 (below) of the wizard, indicate which threats to which targets are likely to be reduced by one or more threat ranks (e.g., a “High” threat reduced to a “Medium” threat) if the strategic action is successfully implemented. The default settings assume a strategic action will abate a threat across all of the targets but the user can de-select the check-boxes if the bottom portion of the form if a particular threat-target combination is not likely to be abated by this strategic action. Select the **Threat Abatement** button to see a description of the Threat Abatement ranks.

**Strategy Ranking - Step 3 of 7**

**What Threats are addressed by this Strategic Action?**

Strategic Action:

Select Threats from list (highest ranking threats with threat rank):

3.	Operation of dams or reservoirs	High
4.	Plague	High
5.	Development of roads or utilities	Medium
6.	SWSI - new water projects	Medium
7.	Primary home development	Medium
8.	invasive fish	Medium
9.	Operation of drainage or diversion systems	Medium

Threat Abatement Rank: **Very High**

**Threat Abatement**

Select the targets for each threat that are addressed by this strategic action. Click each threat below, then check to see that the targets at the bottom are appropriately checked.

3.	Operation of dams or reservoirs
6.	SWSI - new water projects
9.	Operation of drainage or diversion systems

Targets affected by: Operation of drainage or diversion systems

1. San Miguel River System	<input checked="" type="checkbox"/> High	5. Montane-mixed shrubland/grassland	<input type="checkbox"/>
2. Lower Dolores River System	<input type="checkbox"/>	6. Desert Shrubland	<input type="checkbox"/>
3. CO Plateau Cliff and Canyon	<input type="checkbox"/>	7. Sagebrush Shrubland	<input type="checkbox"/>
4. PJ & Ponderosa Pine Woodland	<input type="checkbox"/>	8. High elevation forest/alpine mosaic	<input type="checkbox"/>

Select the **Next >>** button when you are ready to move on.

- In Step 4 of the wizard (below), identify any key ecological attributes – indicator ratings that are likely to be improved by at least one category (e.g., “Fair” -> “Good”) if this strategic action is successfully implemented. Select the **Viability Enhancement** button to see a description of Viability Enhancement.

**Strategy Ranking - Step 4 of 7**

**What Key Ecological Attributes are addressed by this Strategic Action?**

Strategic Action:

Below are the Key Attributes from the Viability table. Select those that will improve the key ecological attribute by one or more rank levels for a target.

Target	Category	Key Attribute	Current Indicator Rating
1 San Miguel River System	Landscape Context	Surface Water Flow Regime of San Miguel Riv	Good
1 San Miguel River System	Condition	Flannelmouth and bluehead sucker	Poor
1 San Miguel River System	Condition	native riparian vegetation	Very Good
1 San Miguel River System	Condition	riparian community composition and diversity	Good
1 San Miguel River System	Condition	Soil/Sediment Erosion-Deposition Regime	Good
1 San Miguel River System	Size	length of native riparian vegetation	Very Good
2 Lower Dolores River System	Landscape Context	Surface Water Flow Regime of Lower Dolores	Poor

Target: Lower Dolores River System      Viability Enhancement Rank: **High**

Category: Landscape Context

Key Attribute: Surface Water Flow Regime of Lower Dolores River

Indicator: Dolores River hydrograph      **Viability Enhancement**

Current Rating: Poor: Shape of hydrograph does not mimic natural and volumes greatly reduced

Desired Rating: Good: Natural hydrograph shape (hydrologic integrity index)

Measurement: Hydrograph shape is significantly altered - 75% of water transported out of basin

 Entries in Steps 5, 6, and 7 in the Strategy Ranking wizard may all be directly entered into the Ranking Detail table in the Strategies worksheet. The wizard does not need to be used to enter this data.

Select the **Next >>** button when you are ready to move on.

- In Step 5 of the wizard (below), you can set five additional ranking criteria via radio buttons. Select the **Duration and Leverage** button to see a description of duration. In the Instructions window, select **Next** to see a description of Leverage. Select the **Feasibility** button to see a description of the Lead Individual/Institution ranking. In the Instructions window, select **Next** to see a description of **Ease of Implementation** rankings and **Next** again to see **Ability to Motivate** rankings. Select the **Next >>** button when you are ready to move on.

**Strategy Ranking - Step 5 of 7**

**Rank this Strategic Action for Benefits (cont.) and Feasibility:**

Strategic Action: Assess any new water projects for impacts to key elements of the flow regime

**Benefits:**

Contribution (from Step 2)	Duration of Benefit	Leverage	Benefit Rank
Low	<input type="radio"/> Very High <input type="radio"/> High <input type="radio"/> Medium <input checked="" type="radio"/> Low <input type="radio"/> -	<input type="radio"/> Very High <input type="radio"/> High <input checked="" type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> -	Low
Threat Abatement (Step 3)			Duration and Leverage
Very High			
Viability Enhancement (Step 4)			
High			

**Feasibility:**

Lead Individual / Institution	Ease of Implementation	Ability to Motivate Key Constituencies	Feasibility Rank
<input type="radio"/> Very High <input checked="" type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> -	<input type="radio"/> Very High <input type="radio"/> High <input checked="" type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> -	<input type="radio"/> Very High <input type="radio"/> High <input checked="" type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> -	Medium
			Feasibility

6. In Step 6 of the wizard (below), you can categorize the overall cost into one of 4 broad categories (right portion of the form) or calculates costs using the cost-calculator features in the left portion of the form. Select the **Cost** button to see a detailed explanation of the costs categories.

**Strategy Ranking - Step 6 of 7** ✖

**Forecast the Costs for this Strategic Action.**

Strategic Action:

**Costs may be forecasted at this level or at the action step level.** Calculated Cost Rank

Are the Costs in U.S. Dollars?

Yes  No: Enter conversion rate here  = \$US 1.00

Enter costs in local currency.

One-time Cost

Annual Costs

Average Number of People per Year  Annual Labor Cost

x Average Cost of One Person per Year  =

+ Other Costs per Year  =

Years of Costs

Total Cost

Cost Roll-up from this Action's Steps

Use the Roll-up to Calculate Cost Rank

**High**

Cost Rank Override

Very High

High

**Medium**

Low

-

Final Cost Rank

**Medium**

**Cost**



The colors of the rankings for Cost are the reverse of the colors for the other rankings. A “Low” cost is good; a “Very High” cost is expensive.

Select the **Next >>** button when you are ready to move on.

7. In Step 7 of the wizard (below), enter the progress of the strategic action. Progress entries may be entered for an unlimited number of time periods. These entries contain the following information:

- Date – the date associated with the status. Use the date spinners to assign the appropriate month and year.
- Progress – the current status of the action. Select from the drop-down list: Planned, Major Issues, Minor Issues, On Track, Completed, or Abandoned.
- Comment – information associated with this progress.

If one or more progress entries already exist, a yellow spinner will be visible in the upper left corner of the progress frame. Click the yellow spinner left to '0 of n' to enter a new record. If no entry has yet been entered, the yellow spinner will not appear; type directly into the available boxes.

**Strategy Ranking - Step 7 of 7**

Complete the following, then click 'Save and Exit' to update the worksheet database.

Strategic Action:

Rank Summary:	Benefit Rank	Feasibility Rank	Cost Rank	Overall Rank
	Low	Medium	Medium	Low

Progress: Click the yellow spinner left to '0 of n' to enter a new record:

1 of 1

Date:

Progress:

Comment:

Person Responsible:

Comments (Method, Prerequisites, Descriptions or Rationale for Rejection):

Is this Strategic Action selected for action?  
 Yes: Selected for Action  No: Not Selected for Action

In this step, you also identify an individual responsible for seeing the strategic action implemented, enter additional comments, and have the opportunity to explicitly not select a strategic action for implementation..

Select the **Save and Exit** button to finish.

## 6.4 Action Steps Wizard

Use this wizard to define the specific action steps for each strategic action, and to describe the cost, timing and responsibility for each step. This wizard creates the work plan with time-lines for action.



Costs for a strategic action may be defined for each step of a strategic action OR at the strategic action; costs do not need to be entered at both levels.

Open the Action Steps wizard by selecting the **wizard** icon on the custom tool bar along the right side of the screen, selecting the **Action Steps** radio button and selecting **OK**. Or you may select the Action Steps wizard from the Wizards option of the main menu. You may also open the wizard by simply double-clicking any cell with black font in an action step row within the Strategies table.

1. In Step 1 of the wizard (below), select a particular Strategic Action (if one you want is not already highlighted).

Action Workplan - Step 1 of 4
✕

**Use this first step of this wizard to create a list of Strategic Actions.**

**Then, select one strategic action from the list, and complete the remaining steps of this wizard. Click one of the two buttons at the bottom left to select the desired task.**

**Action Workplan: Steps 1 - 4**

You may edit multiple strategic actions without ever leaving the wizard. After completing steps for an action, return to step 1 and switch to a different action -- the wizard will ask you if you want to save your entries for the prior action before switching to the next action.

1. Add new Strategic Actions -- type here.  
Click the button to add new item to the list below.

2. List of Strategic Actions  
Select an action from the list to go to the next steps of the wizard.

Assess any new water projects for impacts to key elements of the flow regime

Develop an agreed upon desired future condition and a system of indicators for BLM lands that supports needed biodiversity an

Develop partnerships with key water users to work cooperatively to protect the elements of the flow regime which have been ic

Eradicate purple loosestrife (and any other A list species as found) and prevent its reestablishment.

Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the San Miguel River

Identify key elements of the San Miguel River flow regime that are needed to protect water dependent biodiversity

Influence BLM planning efforts to minimize impacts to biodiversity.

Obtain agreement to work towards improved management at McPhee Dam

Participate in county planning efforts for oil and gas exploration and development to ensure that biodiversity impacts are minimi

Participate in Statewide Water Supply Initiative to ensure projects do not compromise viability of water dependent targets

- In Step 2 of the wizard (below), enter one or more **Action Steps** and use the date spinners to select the start and end date for this action. Up to 10 Action Step can be entered.

**Action Workplan - Step 2 of 4**
✕

**List the Action Steps that achieve the Strategic Action, with Start and End Dates.**

Strategic Action: Develop an agreed upon desired future condition and a system of indicators for BLM lands that supports needed biodiversity and influence management actions in order to move toward that

Use the buttons below to scroll the action steps up and down. Up to ten action steps may be entered.  
Do not name two steps the same.

	Action Steps	Start Date	End Date
1	Allow rest from grazing on key areas that are being restored through existing or new policies (grassbanks).	Oct 2003	Oct 2013
2	Influence BLM Resource Management Planning efforts to ensure management supports needed biodiversity	Jan 2003	Jan 2013
3	Influence BLM to adopt desired future condition and adaptive management for biodiversity through the landscape health assessment process	Oct 2003	Oct 2013

Scroll Down
Scroll Up

Strategy Ranking
Action Workplan
<< Previous
Next >>
Save and Exit
Cancel

Date entries in Step 2 and all entries in Steps 3 and 4 in the Action Steps wizard may be directly entered into the Actions and Steps Detail table in the Strategies worksheet. The wizard does not need to be used to enter this data.

3. In Step 3 of the wizard (below), select an action step from the drop-down list at the top, and then enter the progress of the action step. Progress entries may be entered for an unlimited number of time periods. These entries contain the following information:

- Date – the date associated with the status. Use the date spinners to assign the appropriate month and year.
- Progress – the current status of the action. Select from the drop-down list: Planned, Major Issues, Minor Issues, On Track, Completed, or Abandoned.
- Comment – information associated with this progress.

If one or more progress entries already exist, a yellow spinner will be visible in the upper left corner of the progress frame. Click the yellow spinner left to '0 of n' to enter a new record. If no entry has yet been entered, the yellow spinner will not appear; type directly into the available boxes.

In this step, you also enter more detail to the methods needed to accomplish this action step, the name of the person responsible for implementing the action step, and additional comments.

**Action Workplan - Step 3 of 4**

**Describe each Action Step defined in the previous step.**

Strategic Action:

Select an action step from the drop-down list.  
For each action step, enter its relevant information below.

Progress: Click the yellow spinner left to '0 of n' to enter a new record:

1 of 1

Date:

Progress:

Comment:

Method of Executing Step:

Person Responsible:

Comments:

Select **Next >>** when you are ready to move on.

4. In Step 4 of the wizard (below), estimate **costs** for each Action Step.

**Action Workplan - Step 4 of 4** ✖

**Forecast the Costs for each action step\*, then click 'Save and Exit' to update the worksheet.**

Strategic Action: Develop an agreed upon desired future condition and a system of indicators for BLM lands that supports needed biodiversity and influence management actions in order to move toward that

Select an action step from the drop-down list. For each action step, enter its cost information below.

Influence BLM to adopt desired future condition and adaptive management for biodiversity through the landscape health ▾

Are the Costs in U.S. Dollars?   
 Yes  No: Enter conversion rate here 1.00 = \$US 1.00

Enter costs in local currency.

	One-time Cost	350	
Annual Costs			
Average Number of People per Year	1.5	=	Annual Labor Cost
x Average Cost of One Person per Year	20000	=	30000
+ Other Costs per Year	0	=	Total Annual Cost 30000
Years of Costs	2		
Total Cost	60350		

Cost Roll-up from this Action's steps   
 Use the Roll-up to Calculate Cost Rank 60350

\*Costs may be forecasted at this level or at the strategic action level in the Strategy Ranking wizard.

Strategy Ranking
Action Workplan

<< Previous
Next >>
Save and Exit
Cancel

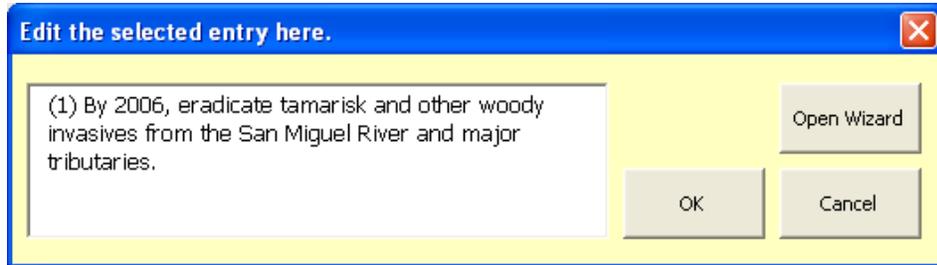
Select **Save and Exit** when finished.

## 6.5 Shortcuts for Entering Data into the Strategies Tables

There are several ways to enter data that are shortcuts to full use of the wizards:

**Double-click editing of component names:** Once objectives, strategic actions, action steps and indicators have been created and are displayed in column B of a table in the Strategies worksheet, they may be edited without using the wizards.

- Double-click on the objective, strategic action, action step or indicator that you want to edit and an edit box will appear containing the selected component.



- Edit the text.
- Click **OK**.

The change will become effective for wherever that component is referenced in the Viability, Strategies and Monitoring worksheets. (Note that you may also go to the wizard from the Edit Name form by clicking the Open Wizard button.)

**Direct Entry of Data into Tables:** Two of the table formats (described in section 6.6), Actions and Steps Detail and Ranking Detail allow direct entry of data into the table. Any cell displayed in blue font is unprotected and will accept direct entries. For the ranks, a drop-down menu will appear with the rank choices.

**Shortcut Wizard Access:** If you double-click cells that are displayed in black font (protected cells) within any of the tables in the Strategies worksheet, a wizard will open at the appropriate step for immediate data entry. For example, note that the ranks under the Feasibility column (below) are displayed in black font (and thus are protected). If you double-click on the cell with the Medium rank, you will go directly

Strategies						
San Miguel/Dolores River						
#	Strategic Actions	Overall Rank	Benefits	Feasibility	Cost	Selected for Action?
1	Develop an agreed upon desired future condition and a system of indicators for BLM lands that supports needed	Very High	Very High	Medium	Medium	Yes
2	Eradicate purple loosestrife (and any other A list species as found) and prevent its reestablishment.	Very High	Very High	Medium	Medium	Yes
3	Eradicate tamarisk and other nonnative woody species from 35 miles of the mainstem and 12 tributaries of the	Very High	Very High	Very High	High	Yes
4	Obtain agreement to work towards improved management at McPhee Dam	Very High	Very High	Medium	Medium	Yes
5	Participate in Statewide Water Supply Initiative to ensure projects do not compromise viability of water dependent	Very High	Very High	Medium	Medium	Yes
6	Select key audiences and give presentations and field tours to distribute lessons learned from tamarisk project	Very High	Very High	High	Low	Yes
7	Develop partnerships with key water users to work cooperatively to protect the elements of the flow regime	High	High	Medium	Medium	Yes

to the appropriate step 5 of the Strategy Ranking wizard for the selected strategic action (below).

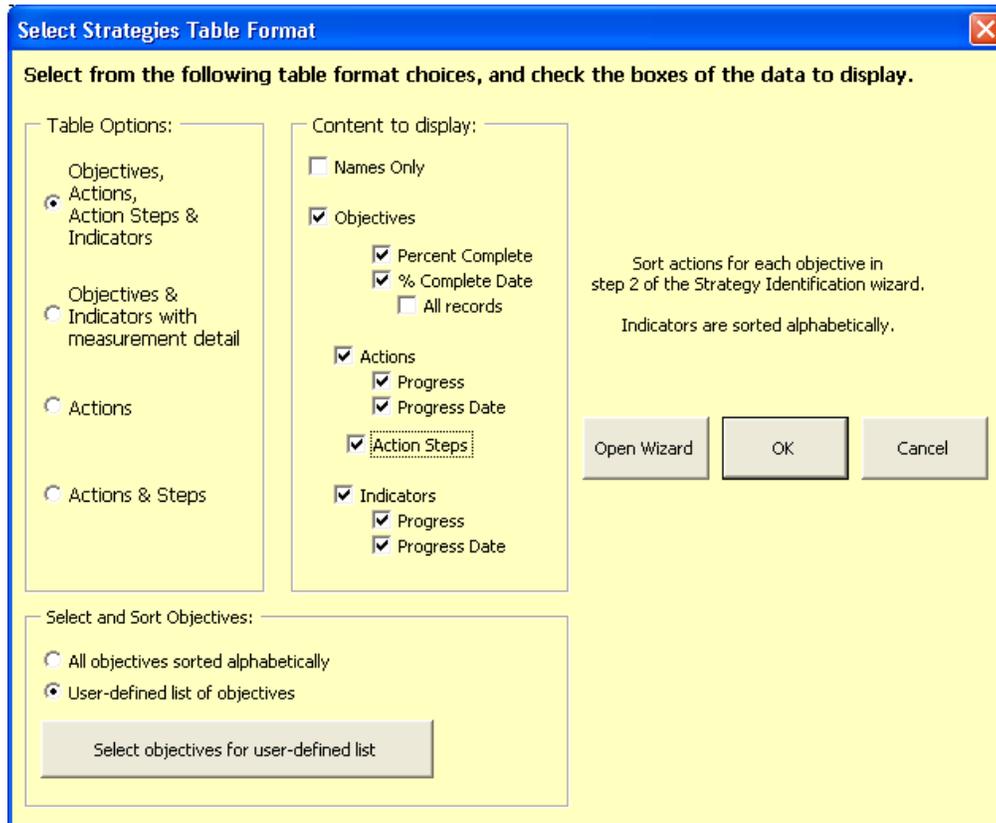
This feature is especially useful for ranking the Threat Abatement and Viability Enhancement ranks, which can only be entered via the Strategy Ranking wizard.

## 6.6 Table Formats

The Strategies worksheet contains table formatting options that can be selected from a Table Format form. To launch the Table Format form, do one of the following:

- Choose the Select Table Format option in the Tables menu
- Select the Table Format toolbar button
- Right-click the mouse to select the Table Format
- or simply double-click the table header or any cell within the Strategies worksheet that is outside of the table.

Select from the four table options, then check the boxes in 'Content to display':



Select from the following table format choices, and check the boxes of the data to display.

**Table Options:**

- Objectives, Actions, Action Steps & Indicators
- Objectives & Indicators with measurement detail
- Actions
- Actions & Steps

**Content to display:**

- Names Only
- Objectives
  - Percent Complete
  - % Complete Date
  - All records
- Actions
  - Progress
  - Progress Date
- Action Steps
- Indicators
  - Progress
  - Progress Date

Sort actions for each objective in step 2 of the Strategy Identification wizard.  
Indicators are sorted alphabetically.

Open Wizard    OK    Cancel

**Select and Sort Objectives:**

- All objectives sorted alphabetically
- User-defined list of objectives

Select objectives for user-defined list

1. Objectives, Actions, Action Steps & Indicators: Use this option (shown above) to display objectives and if desired, the actions, action steps, and indicators that support the selected objectives.
  - Click on the Percent Complete or Progress check box to display percent complete entries for objectives and progress entries for actions, action steps, and indicators.



To view all percent complete entries over time, check the All records box. Only objectives and their percent complete entries are displayed in this format.

3. Objectives & Indicators with measurement detail: Use this option (shown below) to display the indicator measurements that support the selected objectives.
- Check the appropriate boxes to display indicator measurements for:
    - key attributes by target
    - threats by target
    - other by target, or
    - other not associated to a target.
  - Indicator measurements can be selected for all targets or for selected targets only.
  - Only the latest indicator measurement is displayed. Measurements cannot be edited in the Strategies worksheet.
  - Indicator measurements of key attributes are entered in the Viability worksheet. These indicator measurements can be linked to objectives either in the Viability worksheet or via the Strategy Identification wizard.
  - Indicator measurements of threats and other items are entered in the Monitoring worksheet. These indicator measurements can be linked to objectives either in the Monitoring worksheet or via the Strategy Identification wizard.

**Select Strategies Table Format**

Select from the following table format choices, and check the boxes of the data to display.

**Table Options:**

Objectives, Actions, Action Steps & Indicators  
 Objectives & Indicators with measurement detail  
 Actions  
 Actions & Steps

**Content to display:**

**Rows:**  
 Key attributes by target  
 Threat indicators by target  
 Other indicators by target  
 Other indicators not associated to a target

**Columns:**  
 Measurements  
 Only the latest measurement for each row is displayed.

**Select and Sort Objectives:**

All objectives sorted alphabetically  
 User-defined list of objectives

**Select the targets to display:**

All targets  
 Selected targets only

1.	San Miguel River System
2.	Lower Dolores River System
3.	CO Plateau Cliff and Canyon
4.	PJ & Ponderosa Pine Woodland
5.	Montane-mixed shrubland/grassland mosaic
6.	Desert Shrubland
7.	Sagebrush Shrubland
8.	High elevation forest/alpine mosaic

3. Actions: Use this option to display all or selected strategic actions.

4. Actions & Steps (shown below): Use this option to display all or selected strategic actions and their action steps.

For #3 and #4, check the boxes in 'Content to display' to display the desired columns for the actions and steps.

**Select Strategies Table Format**

Select from the following table format choices, and check the boxes of the data to display.

**Table Options:**

- Objectives, Actions, Action Steps & Indicators
- Objectives & Indicators with measurement detail
- Actions
- Actions & Steps

**Content to display:**

- Names Only
- Costs (US\$)
- Costs (local currency)
- Methods
- Progress
- Progress Date
- All records
- Person Responsible
- Start/End Dates
- Timeline

**Sort Action Steps by:**

- Time Order by Start Date
- Alphabetically

**Timeline Format**

Number of years to display:

First year of the table:

**Sort Strategic Actions by:**

- By Rank
- Alphabetically
- User-defined list of strategic actions

Select actions for user-defined list

Open Wizard OK Cancel

Many of the columns describing strategic actions and action steps tables are in blue font, signifying that these are editable formats. Most data that describes or ranks the strategic actions may be directly entered into the table. All data that describes the action steps may be directly entered into the table.

## 6.7 Strategic Action Ranks

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Potential strategic actions may be ranked on nine criteria related to Benefits (contribution, threat abatement, viability enhancement, duration, leverage), Feasibility (lead individual/institution, ease of implementation, ability to motivate), and Cost. Descriptions of each of these ranking criteria are included in this section.

### Benefits

---

The following benefit factors are ranked in Steps 2, 3, 4 and 5 of the Strategy Ranking wizard. Contribution (in step 2), Duration and Leverage (in step 5) may also be entered directly into the Strategies worksheet when in the 'Ranking Detail' format.

#### Contribution

The degree to which the proposed strategic action, if successfully implemented, will contribute to the achievement of the objective(s). Select one of the following ranks in Step 2 of the Strategy Ranking wizard, or enter the rank directly into the Strategies worksheet when in the 'Ranking Detail' format.

- Very High: The strategic action, in itself, achieves one or more objectives.
- High: The strategic action makes a substantial contribution towards achieving one or more objectives, but is not by itself sufficient.
- Medium: The strategic action makes an important contribution towards achieving one or more objectives.
- Low: The strategic action makes a relatively small contribution towards achieving one or more objectives.

#### Threat Abatement

You can specify threat abatement benefits in Step 3 of the Strategy Ranking wizard. Although a threat abatement rank may not be entered directly into the Strategies worksheet when in the 'Ranking Detail' format, if you double-click on the threat abatement rank cell, the Strategy Ranking wizard will appear. Click the next button at the bottom of the wizard twice to go to step 3.

First, select the threat(s) from the list. Select threats that can reasonably be expected to reduce a threat rank by one or more ranks for one or more of the targets within the next ten years if the particular strategic action is successfully implemented.

Then, select targets linked to selected threats. The threats selected from the list will appear in the middle of the page. Select a threat to see the list of targets affected by that threat. The default assumption is that a strategic action associated with a selected threat will abate that threat (i.e., reduce the threat rank by one or more ranks) for ALL targets affected by the threat (identified by the checked check-boxes next to each target). If the strategic action will NOT reduce the future threat rank by one or more ranks for a target, remove the check from the box next to the target.

## Viability Enhancement

You can specify viability enhancement benefits in Step 4 of the Strategy Ranking wizard. Although a viability enhancement rank may not be entered directly into the Strategies worksheet when in the 'Ranking Detail' format, if you double-click on the viability enhancement rank cell, the Strategy Ranking wizard will appear. Click the next button at the bottom of the wizard three times to go to step 4.

Estimate any improvement of key ecological attributes to the targets that might reasonably be expected to occur over ten years if the strategic action is successfully implemented. If the strategic action will improve the key ecological attribute by one or more grade levels for a target, select the row that contains the target, category and attribute.

If two or more selections have the same target, category, and attribute as each other (varying only in their indicators), only one will be recorded in calculating the benefit. In this case of two or more identical target/category/key attribute combinations; the user should highlight the attribute within the lowest current key attribute/indicator rank.

## Duration of Outcome

The degree, to which the proposed strategy, if successfully implemented, is likely to secure a long-lasting outcome. Select one of the following ranks in Step 5 of the Strategy Ranking wizard, or enter the rank directly into the Strategies worksheet when in the 'Ranking Detail' format.

- **Very High:** The strategy, if successfully implemented, is likely to achieve an enduring, long-lasting outcome (e.g. acquisition of fee interest in land; an ongoing management practice; a very secure public policy).
- **High:** The strategy, if successfully implemented, is likely to achieve an outcome with a relatively long (e.g. 10 year) duration (e.g. partial interest in land; solid but potentially vulnerable public policy change).
- **Medium:** The strategy, if successfully implemented, is likely to achieve an outcome of moderate duration (e.g. 3 year management agreement).
- **Low:** The strategy is likely to achieve an outcome with a very short duration (e.g. handshake agreement; 1 year management plan; stopgap policy).

## Leverage

Estimate any leverage towards other high-impact strategies (Default = Low) . Select one of the following ranks in Step 5 of the Strategy Ranking Wizard, or enter the rank directly into the Strategies worksheet when in the 'Ranking Detail' format.

- **Very High:** Immediate, visible, tangible results and high leverage towards another high impact strategy.
- **High:** Immediate, visible, tangible results or high leverage towards another high impact strategy.

- Medium: Moderate leverage.
- Low: No apparent leverage.

## Feasibility

---

The following feasibility factors are ranked in Step 5 of the Strategy Ranking wizard and may also be entered directly into the Strategies worksheet when in the 'Ranking Detail' format.

### Lead Individual / Institution

Select one of the following ranks in Step 5 of the Strategy Ranking Wizard, or enter the rank directly into the Strategies worksheet when in the 'Ranking Detail' format.

- Very High: A lead individual ('champion') with sufficient time, proven talent, substantial relevant experience and institutional support is reasonably available and committed to lead implementation of the strategy.
- High: An individual with sufficient time, promising talent, some relevant experience and institutional support is reasonably available and committed to lead implementation of the strategy.
- Medium: An individual with promising talent and sufficient time is reasonably available, but lacks relevant experience or institutional support.
- Low: No lead individual currently available.

### Ease of Implementation

Select one of the following ranks in Step 5 of the Strategy Ranking Wizard, or enter the rank directly into the Strategies worksheet when in the 'Ranking Detail' format.

- Very High: Implementing the strategy is very straightforward; this type of strategy has been done often before.
- High: Implementing the strategy is relatively straightforward, but not certain; this type of strategy has been done before.
- Medium: Implementing the strategy involves a fair number of complexities, hurdles and/or uncertainties; this type of strategy has rarely been done before.
- Low: Implementing the strategy involves many complexities, hurdles and/or uncertainties; this type of strategy has never been done before.

### Ability to Motivate

Select one of the following ranks in Step 5 of the Strategy Ranking Wizard, or enter the rank directly into the Strategies worksheet when in the 'Ranking Detail' format.

To what degree are the key constituencies (e.g. landowners, public officials, interest groups) whose involvement is critical to implementing the strategic action well understood, and the strategic action is likely to appeal to their key motives.

- **Very High:** The key constituencies and their motives are well understood and the strategic action is likely to appeal to their key motives.
- **High:** The key constituencies are well understood and the strategic action may appeal to their key motives.
- **Medium:** The key constituencies are somewhat understood and the strategic action may appeal to their key motives.
- **Low:** The key constituencies are not well understood and it is uncertain whether the strategic action will appeal to their key motives.

## Costs

---

Costs may be entered for each action step or at an aggregated level for the strategic action itself. Costs may entered and ranked in Step 6 of the Strategy Ranking wizard and in Step 4 of the Action Steps Wizard. However, it is often easier to enter them directly into the Strategies worksheet when in the 'Actions and Steps Detail' format.

Costs may be entered in US dollars or in a different currency or in a combination of currencies. If entering action costs or step costs in a different currency, select 'No' in the option box that asks, "Are the costs in US dollars?" then type in the appropriate conversion rate. Cost totals are converted to US dollars to calculate the cost rank.

Enter estimated costs for implementing the strategic action. Strategic action costs should be estimated for the time horizon of the strategy, but no longer than 10 years. Cost estimates should be focused on the use of discretionary or unrestricted dollars. The following five factors should be entered, as applicable:

- **One Time Cost** -- Enter any one-time direct cost, such as for land purchase.
- **Annual Costs** -- Annual costs are split between labor costs and other costs (you may combine labor and other costs together and enter them both as other costs).
- **Labor costs (Staff Time Full Time Equivalents (FTE))** -- Enter the average number of staff required to implement the strategic or action step, and the average cost per person per year. If the strategy involves only part of a staff person's time, it should be entered as a fractional FTE (e.g. 0.2 FTE equals approximately one day per week).
- **Other Costs:** Enter any other direct costs, based on an average cost per year, excluding staff. If a management strategy, such as fire, needs to be done several times, the average annual cost should be estimated.
- **Number of Years** -- Enter the number of years the strategic action will require staff time or annual costs for implementation (**MAXIMUM OF 10 YEARS**). If a strategic action requires only part of a year, enter as decimal (e.g. 0.25 for a three month strategy).



Some staff time & year must be entered for each strategic action.

Cost entries are automatically converted to a cost rank according to the criteria below; a user override option for cost ranks is found in Step 6 of the Strategy Ranking wizard.

Ranking Criteria: Total cost of implementing the strategy, including staff time -- in unrestricted or discretionary dollars (i.e. dollars that might be applied to other purposes) is:

- Very High: \$1,000,000 or more.
- High: \$100,000 or more.
- Medium: \$10,000 or more.
- Low: \$1,000 or more.

## 6.8 Taxonomy of Strategic Actions: *Please go to Appendix E.*

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# 7 Monitoring Worksheet

The Monitoring worksheet does three things:

1. Using the Monitoring wizard, it captures a brief description of all monitoring indicators whether they track threat-based, viability-based or other monitoring needs.
2. Using the Threats and Other Measurements wizard, it records indicators and their measurements for threat-based and other (non-viability) records.
3. It displays monitoring information in multiple table formats.



The Monitoring wizard and the Threats and Other Measurements wizard are accessible in the full version only.

The Monitoring worksheet captures a brief description of all monitoring indicators. The worksheet can display monitoring information in multiple table formats. Only one table is created and visible in the Monitoring worksheet at a time. Below is an example of part of the **Indicators with monitoring detail** table format.

Monitoring San Miguel/Dolores River						
#	Indicators	Key Attribute References by Target (w/ current indicator status)	Threat References by Target (w/ current indicator status)	Objectives	Methods	P
10	High quality (EO rank) occurrences of the kachina daisy	CO Plateau Cliff and Canyon -Condition: Characteristic Species - Kachina daisy (1 A and 1 B occurrences)	CO Plateau Cliff and Canyon -Threat: Invasive/alien species	-(8) Through 2013, no oil and gas roads or pads will be located within rare plants or plant community occurrences. If oil and gas drilling does occur, the work will minimize impacts to biodiversity.	Assess the quality of rare plant occurrences using CNHP methodologies	Mi
11	high quality (occurrence ranks) needed 5 rare plant species occurrences	PJ & Ponderosa Pine Woodland -Condition: Characteristic Species - rare plants (8 A, 4 B, 4 C and 7 unranked)	PJ & Ponderosa Pine Woodland -Threat: Oil or gas drilling -Threat: Development of roads or utilities	-(8) Through 2013, no oil and gas roads or pads will be located within rare plants or plant community occurrences. If oil and gas drilling does occur, the work will minimize impacts to biodiversity.	Assess the quality of rare plant community occurrences using CNHP methodologies	Mi
12	High quality (occurrence ranks) needed Gunnison prairie dog occurrences	Desert Shrubland -Condition: Characteristic Species - Gunnison prairie dog (C ranked occurrence)  Sagebrush Shrubland -Condition: Characteristic Species - Gunnison prairie dog (1 B and 1 C)	Desert Shrubland -Threat: Plague -Threat: Killing - shooting and poisoning  Sagebrush Shrubland -Threat: Plague -Threat: Killing - shooting and poisoning	-(9) By 2013, X acres (TBD) in at least 2 viable Gunnison prairie dog colonies are under full protection status.	Assess the quality of Gunnison prairie dog colonies using CNHP methodologies	Mi
13	High quality occurrence of gray vireo	PJ & Ponderosa Pine Woodland -Condition: Indicator Species - Gray Vireo (C ranked occurrence)	PJ & Ponderosa Pine Woodland -Threat: Invasive/alien species -Threat: Oil or gas drilling -Threat: Fire suppression	-(8) Through 2013, no oil and gas roads or pads will be located within rare plants or plant community occurrences. If oil and gas drilling does occur, the work will minimize impacts to biodiversity.	100 - 200 randomly placed point counts	Mi

## 7.1 Building the Monitoring Tables

With no data, the table in the Monitoring worksheet includes only the header row. If the Assessment of Viability table has been created (see Section 3), the **Indicators Only** table will contain all indicators entered in the Viability table.

A monitoring record is uniquely identified by its indicator. Each monitoring indicator may record measurements within five categories of monitoring:

1. Key Attribute monitoring: Landscape Context
2. Key Attribute monitoring: Condition
3. Key Attribute monitoring: Size
4. Threat-based monitoring
5. Other monitoring (for example, tracking improved conservation capacity)

Indicators for monitoring records that support Assessments of Target Viability (1-3 above) are usually first defined and entered in the Assessment of Target Viability table in the Viability worksheet. Once entered, they are automatically included in the Monitoring worksheet. One monitoring record and its indicator may link to multiple target, category and key attribute entries.

Indicators for threat-based and other (non-viability) records are usually first defined and entered in the Threats and Other Measurements wizard in the Monitoring worksheet.

Indicators can be quantitative measures or qualitative observations. Good indicators meet the following criteria:

- Measurable: Able to be recorded and analyzed in quantitative or in discreet qualitative terms.
- Clear: Presented or described in such a way that its meaning will be the same to all people.
- Sensitive: Changing proportionately in response to actual changes in the condition or item being measured.

See Appendix B (Assessing Target Viability) for more about indicators.

All monitoring activities (1-5 above) may be linked to the objectives that they support. Indicators that support objectives are labeled “effectiveness” indicators for purposes of creating table displays. Indicators that are not linked to objectives are labeled “status” indicators.

New indicators may be created in the following ways:

Key attribute indicators:

- In the Viability worksheet. Double click on the appropriate cell in column E within the table (see Section 3).
- In Step 3 of the Viability wizard, where the indicator may be linked to the selected key attribute (see section 3.6).

Threat indicators:

- In the Threats and Other Measurements wizard, where the indicator may be linked to threats by target.

Other indicators:

- In the Threats and Other Measurements wizard, where the indicator may be linked to other items, either by target or unassociated to targets.
- In Step 5 of the Strategy Identification wizard, where the indicator may be created and linked to other items, either by target or unassociated to targets.

All indicators:

- In Step 1 of the Monitoring wizard, where the indicator and monitoring detail may be created (see Section 7.6).
- From the Table menu, by copying data from one row to a new row (see Section 7.2).

Once the indicator is created:

- Monitoring-related data may be typed directly into the table (see Section 7.3) or entered via the Monitoring wizard (Section 7.6).
- Indicator measurement data may be typed directly into the table or entered via the Threats and Other Measurements wizard.

## 7.2 Using menu options to copy, delete, and merge Monitoring rows

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To copy data from one row to a new row:

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- Make sure that the table is in the **Indicators Only** or the **Indicators with detail** format, and then select a row.
- From the **Tables** menu, select **Create/Copy Rows...** and then the menu item **Monitoring: Copy Selected Row**.

This will copy the contents of a row in the monitoring table where the cursor is residing into a new row immediately below the selected row. The indicator name of the new row will be the same as the indicator name of the original row except that a number will be added to the end of the name ('1' for the first copy, '2' for the second copy, etc.) This utility is helpful if the monitoring approach for a particular indicator is similar to the approach used for another indicator. You can make and edit the copy and avoid repetitive data entry.

## To insert rows within the Monitoring table:

---

To insert rows, the **Tables** menu contains two relevant options: **Insert Rows** and **Create Measurement or Progress Row**:

1. The **Insert Rows** option responds according to the situation. If the table is in:
  - the **Indicators Only** format or in the **Indicators with detail** format and the cursor is not on the Progress columns, the Insert Rows option launches the Monitoring wizard. This allows you to create new indicators, which when saved will create new rows for the table.
  - the **Indicators with detail** format and the cursor **IS on the Progress columns**, the Insert Rows option performs the same as the Create Measurement or Progress Row option and will create a new progress row.
  - either format that displays **measurement detail**, the Insert Rows option performs the same as the Create Measurement or Progress Row option and will create a new measurement row for threat and other measurements. (New indicator measurements for key attributes must be added in the Viability table.)
  - the **By Target: Actions & Indicators** format, the Insert Rows option launches the form for linking threats to strategic actions and to indicators. This allows you to create new links, which when saved will create new rows for the table.
2. The **Create Measurement or Progress Row** option also responds according to the situation. If the table is in:
  - the **Indicators Only** format or in the **Indicators with detail** format the Create Measurement or Progress Row option will create a new progress row. If the progress fields are hidden, they will be displayed.
  - either format that displays **measurement detail**, the Create Measurement or Progress Row option will create a new measurement row for threat and other measurements. (New indicator measurements for key attributes must be added in the Viability table.)
  - the **By Target: Indicators & Actions** format, the Create Measurement or Progress Row option will first redisplay the table in the **By Target with measurement detail** format. It will then create a new measurement row.



A new measurement or progress row will not be created until the existing row has been used. You will be prompted to first enter data into the existing row.

## To delete rows within the Monitoring table:

---

To delete rows from the Monitoring table, select **Delete Selected Rows** from the **Tables** menu.



If you wish to delete ALL data for an indicator, make sure that the table is formatted in the **Indicators Only** or the **Indicators with monitoring detail** format, where all information for an indicator is confined to one row.



In this case, the **Delete Selected Rows** option will delete the selected indicator, its monitoring program data, and all measurements tied to this indicator from the ENTIRE WORKBOOK, including Viability.

If the row selected is a measurement row or a progress row that is one of several measurement or progress rows for that indicator, then

- If it is NOT the current measurement or progress entry, the **Delete Selected Rows** option will delete only that selected measurement or progress data.
- If it IS the current measurement or progress entry, the **Delete Selected Rows** option will delete ALL rows related to that selected measurement or progress data.

If the table is in the **By Target: Indicators & Actions** format, the 'Delete Selected Rows' option launches the form for linking threats to strategic actions and to indicators. This allows you to remove links, which when saved will delete rows from the table.

If you change the name of an indicator in the Viability table that is listed in the Monitoring table, that indicator in the Monitoring table will probably no longer be appropriate. In this case, you must either delete the row in the Monitoring table or disconnect the indicator from the Viability listing in Step 2 of the Monitoring Wizard.

To merge two indicator rows into one indicator row:

1. From the **Tables** menu, select **Merge Rows...**
2. Select **Monitoring: Merge Two Rows**. A form will appear (see below).

**Merge two indicators into one.**

Select the two indicators that you want merged from the list below, then click OK.

The first indicator that you click will be the default indicator -- the indicator whose values will be retained if there is a difference between the two indicators' entries.

Default Indicator:  
population size of flannelmouth sucker

Second Indicator:  
population size of flannelmouth sucker and bluehead sucker

OK Cancel

List of Indicators:

- miles of roads and pipelines
- Miles of San Miguel River controlled
- MOU in place to implement flow prescriptions on Dolores River
- Number of active nests
- number of other groups that begin tamarisk eradication projects (within and outside the area)
- Number of viable prairie dog colonies
- population size of flannelmouth sucker
- population size of flannelmouth sucker and bluehead sucker
- population size of roundtail chub
- Presence of invasive species that can significantly change systems
- Quality of rare plant, animal and plant community occurrences
- San Miguel River hydrograph
- sedimentation regime

3. Select the two indicators to be merged together. The first indicator selected is the default indicator – its data is preserved whenever there is a difference between the default indicator's data and the secondary indicator's data. Links to key attributes and to objectives will be combined so that no links are lost or duplicated.

### 7.3 Entering Data into the Monitoring table

---

Some entries in the Monitoring table cannot be directly typed into the Monitoring table -- specifically indicators, which key attributes by target, threats by target, or other items they measure, and objective references. These entries must be made via the wizards to ensure that data is consistent across the workbook.

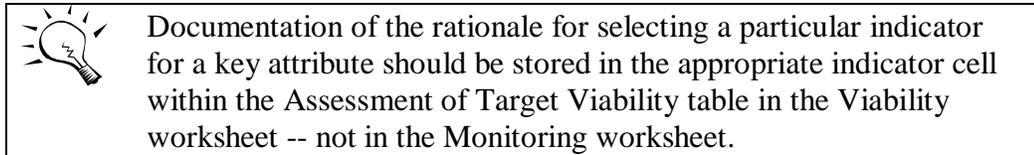
Other entries -- the descriptive fields that pertain to a specific indicator and indicator measurement detail that pertains to a selected row in a table -- may be typed directly into the appropriate cells of the table. These entries will display in blue font.

### 7.4 Documenting Monitoring Programs with Comments

---

The Monitoring table stores brief comments for documenting the approach for measuring a particular monitoring indicator, for documenting monitoring status, and for documenting an indicator measurement.

To enter documentation, select the relevant row in the table; then select the **Comments** toolbar button. A comment form will appear. Enter your documentation and save.



You may also enter comments in the wizards:

- Monitoring status: Step 2 of the Monitoring Wizard
- Indicator monitoring approach: Step 4 of the Monitoring Wizard
- Indicator measurement: Step 4 of the Threat and Other Measurements wizard..

If a comment is entered, the corresponding Indicator cell in the table will be shaded. If there is no text, the shading will disappear.

To clear the shading from the cells (for example, while printing) select **Change Comment Shading** and **Clear** from the **Tables** menu at the top of the screen.

## 7.5 Table Formats

The Monitoring worksheet contains table formatting options that can be selected from a Table Format form. To launch the Table Format form, do one of the following:

- Choose the Select Table Format option in the Tables menu
- Select the Table Format toolbar button
- Right-click the mouse to select the Table Format
- or simply double-click the table header or any cell within the Monitoring worksheet that is outside of the table.

Select from the five table options, then check the boxes in 'Content to display':

Note: In the basic version, only the first two table format options are available.

1. **Indicators Only:** This table format displays the indicator column only.

Use this format when you are working in other parts of the workbook to speed up the refresh operation of the workbook.

2. **Indicators with monitoring detail:** This table format (shown below) can display related key attributes, threats, and objectives, and monitoring-related data, including progress data over time for each indicator.

- Monitoring-related data entry can be typed directly into this table instead of through the Monitoring wizard.
- Click on the Progress check box to display progress entries for each indicator. To view all progress entries over time, check the **All records** box.

**Select Monitoring Table Format**

Select from the following table format choices, and check the boxes of the data to display.

**Table Options:**

- Indicators Only  
(Select this format when not using this table to improve the workbook's speed.)
- Indicators with monitoring detail
- Indicators with measurement detail
- By target with measurement detail
- Threats by target: Indicators & Actions

**Content to display:**

**References:**

- Key Attributes
- Threat References
- Objectives (names)

**Monitoring Detail:**

- Methods
- Priority
- Progress
- Progress Date
- All records
- Other Detail

**Select which indicators to display:**

- All Indicators
- 'Status' Indicators (indicators unattached to objectives)
- User-defined list of indicators
- 'Effectiveness' Indicators (indicators linked to objectives)

Select indicators for user-defined list

Open Wizard OK Cancel

3. **Indicators with measurement detail:** Use this option (shown below) to display the indicator measurements by indicator.

- Check the appropriate boxes to display indicator measurements for:
  - key attributes by target
  - threats by target
  - other by target, or
  - other not associated to a target.
- Check the appropriate boxes to display:
  - measurement data
  - the names of related objectives, or
  - the number of related objectives.

**Select Monitoring Table Format**

Select from the following table format choices, and check the boxes of the data to display.

**Table Options:**

- Indicators Only  
(Select this format when not using this table to improve the workbook's speed.)
- Indicators with monitoring detail
- Indicators with measurement detail
- By target with measurement detail
- Threats by target: Indicators & Actions

**Content to display:**

**Rows:**

- Key attributes by target (latest measurement only)
- Threat indicators by target
- Other indicators by target
- Other indicators not associated to a target

**Columns:**

- Measurements
- Objectives (count)
- Objectives (names)

**Select the measurements to display:**

- Only the latest measurement for each row
- All measurements for each row

**Select the threats to display:**

- All threats for the selected targets
- Only threats which have indicators linked to them

**Select the targets to display:**

- All targets
- Selected targets only

**Select which indicators to display:**

- All Indicators
- User-defined list of indicators
- 'Status' Indicators (indicators unattached to objectives)
- 'Effectiveness' Indicators (indicators linked to objectives)

Select indicators for user-defined list

Open Wizard OK Cancel

- Indicator measurements can be selected for all targets or for selected targets only.
- All indicator measurements or only the latest indicator measurement can be displayed.
  - Indicator measurements of threats and other items are entered here in the Monitoring worksheet. These indicator measurements can be linked to objectives either in the Monitoring worksheet or via the Strategy Identification wizard.
  - Indicator measurements of key attributes cannot be edited in the Monitoring worksheet; they are entered in the Viability worksheet.

For the above three formats, the user may choose to display all indicators, “status” indicators (those unlinked to objectives), “effectiveness” indicators (those linked to objectives), or selected indicators.

4. **By target with measurement detail:** Use this option to display the indicator measurements by target.

This table format (shown below) has the same display options as #3 above.

**Select Monitoring Table Format**

Select from the following table format choices, and check the boxes of the data to display.

**Table Options:**

- Indicators Only  
(Select this format when not using this table to improve the workbook's speed.)
- Indicators with monitoring detail
- Indicators with measurement detail
- By target with measurement detail
- Threats by target: Indicators & Actions

**Content to display:**

**Rows:**

- Key attributes by target (latest measurement only)
- Threat indicators by target
- Other indicators by target
- Other indicators not associated to a target

**Columns:**

- Measurements
- Objectives (count)
- Objectives (names)

**Select the measurements to display:**

- Only the latest measurement for each row
- All measurements for each row

**Select the threats to display:**

- All threats for the selected targets
- Only threats which have indicators linked to them

**Select which indicators to display:**

- All Indicators
- User-defined list of indicators
- 'Status' Indicators (indicators unattached to objectives)
- 'Effectiveness' Indicators (indicators linked to objectives)

Select indicators for user-defined list

**Select the targets to display:**

- All targets
- Selected targets only

1.	San Miguel River System
2.	Lower Dolores River System
3.	CO Plateau Cliff and Canyon
4.	PJ & Ponderosa Pine Woodland
5.	Montane-mixed shrubland/grassland mosaic
6.	Desert Shrubland
7.	Sagebrush Shrubland
8.	High elevation forest/alpine mosaic
9.	tgt9

Open Wizard    OK    Cancel

5. **Threats by target - Indicators & Actions:** This table format displays the indicators and strategic actions that relate to each threat for each target.

Threats can be selected for all targets or for selected targets only.

## 7.6 Using the Monitoring Wizard

Open the Monitoring Wizard by clicking on the **wizard** icon on the custom tool bar along the right side of the screen, select the **Monitoring** radio button (if it is not already highlighted), and select **OK**. You may also open the wizard by simply double-clicking any cell with black font within the Monitoring table.

1. In Step 1 of the wizard (below), select one of the indicators from the List of Indicators. To add a new indicator, type the indicator in the **Add new Indicators** box, then click **Add New Indicator to Monitoring Table**. Use the Remove Selected Indicator and the Edit Selected Indicator buttons to manage the list of indicators.

**Monitoring Programs - Step 1 of 4**

Use this first step of this wizard to create a list of indicators that define your monitoring programs. Then, select one indicator from the list of indicators, and click Next.

You may edit steps 2 - 5 for multiple indicators without ever leaving the wizard. After editing an indicator, return to step 1 and switch to a different indicator -- the wizard will ask you if you want to save your changes for the prior indicator before switching to the next indicator.

Add new Indicators -- type here.  
Click the button to add new item to the list below.

List of Indicators - select an indicator to go to the next steps of the wizard.

- miles of roads and pipelines
- Miles of San Miguel River controlled
- MOU in place to implement flow prescriptions on Dolores River
- Number of active nests
- number of other groups that begin tamarisk eradication projects (within and outside the area)
- Number of viable prairie dog colonies
- population size of flannelmouth sucker
- population size of flannelmouth sucker and bluehead sucker
- population size of roundtail chub
- Presence of invasive species that can significantly change systems**
- Quality of rare plant, animal and plant community occurrences
- San Miguel River hydrograph

Select **Next >>** when you are ready to move on.

2. In Steps 2, 3, and 4 of the wizard, briefly describe the monitoring approach for this indicator. Enter information as best you are able for as many fields as you can.

At the bottom of Step 2 (shown below), enter the progress of the monitoring activity for this indicator. Progress entries may be entered for an unlimited number of time periods. These entries contain the following information:

- Date – the date associated with the status. Use the date spinners to assign the appropriate month and year.
- Progress – the current status of the action. Select from the drop-down list: Planned, Major Issues, Minor Issues, On Track, Completed, or Abandoned.
- Comment – information associated with this progress.

If one or more progress entries already exist, a yellow spinner will be visible in the upper left corner of the progress frame. Click the yellow spinner left to '0 of n' to enter a new record. If no entry has yet been entered, the yellow spinner will not appear; type directly into the available boxes.

**Monitoring Programs - Step 2 of 4**

**Describe the Monitoring Program**

Indicator: Presence of invasive species that can significantly change systems

Methods: Maps are being developed and updated for A list species such as purple loosestrife. Expand efforts to include other high priority and recently discovered (controllable) species

Frequency and Timing: annually updated maps as information is available

Location: Across the site

Who Monitors: county weed managers, land managers, and Colorado Department of Agriculture

Priority:  Low  Medium  High  Very High

Progress: Click the yellow spinner left to '0 of n' to enter a new record:

1 of 1

Date: Jun 2006

Progress: Planned  
Major Issues  
Minor Issues  
**On Track**  
Completed  
Abandoned

Comment: comment regarding progress

3. Complete the remaining steps. When finished, click **Save and Exit**.

## Monitoring Detail

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Each indicator should be described by information about the particular monitoring program and indicator, including:

- **Methods:** Methods are specific techniques used to collect data to measure an indicator. A good method meets the criteria:
  - Accurate: The data collection method has little or no margin of error.
  - Reliable: The results are consistently repeatable - each time that the method is used it produces the same result.
  - Cost-Effective: The method does not cost too much in relation to the data it produces and the resources the project has.
  - Feasible: The method can be implemented by people on the project team.
  - Appropriate: Acceptable to and fitting within site-specific cultural, social, and biological norms.

Methods do not need to be complex or sophisticated - if you can get the information you need using a simple, inexpensive method, it is far preferable to do this than to choose a complex, expensive method. While the information you gather may be less precise, it may be sufficient for the types of decisions you are making. When planning for measuring results, you need to keep in mind that it should be a relatively small portion of your project budget. If your methods for measuring results are too complex, you will not have enough money to implement actions and measure the results.

- **Priority rank:** Indicators can be assigned different priority ratings as follows:
  - Very High: Must be monitored.
  - High: High priority for monitoring.
  - Medium: Monitor only if resources allow.
  - Low: Not necessary to monitor.
- **Status: You can update the status of a given indicator:**
  - Planned: Indicator is not yet started
  - Major Issues: Ongoing, but has major issues that need attention
  - Minor Issues: Ongoing, but has minor issues that need attention
  - On Track: Ongoing, generally on track
  - Completed: Successfully accomplished
  - Abandoned: No longer relevant or useful
- **Frequency and timing.**
- **Location.**
- **Who monitors.**
- **Annual cost.**
- **Funding source.**
- **Detailed Monitoring Plan reference.**
- **Last updated summary/analysis report reference.**

## 7.7 Using the Threats and Other Measurements Wizard

---

Use this wizard to enter measurements for threats and other items.

Open the Threats and Other Measurements wizard by clicking on the **wizard** icon on the custom tool bar along the right side of the screen, select the **Threat and Other Measurements** radio button (if it is not already highlighted), and select **OK**. If the table is in either format that displays measurement detail, you may also open the wizard by simply double-clicking any row that displays threat or other (non-viability) data.

If the table is in either format that displays measurement detail and the cursor is on a row within the table when you open the wizard, the data from that row will be loaded into the wizard.

1. In Step 1, first select whether the measurement is of a threat or an other item.
  - If threat-based, select a focal conservation target.
  - If other measurements, select whether this is a measurement for a selected target, and if so, select a focal conservation target.

**Threat and Other Measurements - Step 1 of 5**

Use this wizard to enter measurements for threats and other items.

Is this measurement for a threat or other item?

Threat  Other Item

Is this a measurement for a selected target?

Yes  No, this is not associated with a specific target.

Select a target from the list:

1. San Miguel River System
2. Lower Dolores River System
3. CO Plateau Cliff and Canyon
4. PJ & Ponderosa Pine Woodland
5. Montane-mixed shrubland/grassland mosaic
6. Desert Shrubland
7. Sagebrush Shrubland
8. High elevation forest/alpine mosaic
9. New Target

Threat and Other Measurements Wizard

<< Previous    Next >>    Save and Exit    Cancel

The next two steps vary depending whether the measurement is threat-based or other.

If the measurement is **threat-based**:

2. In Step 2 (below), **select a threat** from the list of threats. The list contains only threats that have been entered for the selected target. Threats are entered in the Stress/Source or Threats worksheet (the fourth worksheet).

**Threat and Other Measurements - Step 2 of 5**

Select a threat for the selected target.

Target:

Select a threat from the list:

- 1. Invasive/alien species
- 2. Primary home development
- 3. SWSI - new water projects
- 4. Development of roads or utilities
- 5. Recreational use
- 6. Operation of drainage or diversion systems

<< Previous    Next >>    Save and Exit    Cancel

3. In Step 3, **identify an indicator** that will directly inform you of the status of the threat. To add a new indicator, type the indicator in the text box, then click the Add New Indicator to List button. Use the Remove Selected Indicator and the Edit Selected Indicator buttons to manage the list of indicators.

If it is an **other** measurement (NOT measuring a threat or key attribute):

2. In Step 2, **identify an indicator** that will directly inform you of the status of what is being measured. To add a new indicator, type the indicator in the text box, then click the Add New Indicator to List button. Use the Remove Selected Indicator and the Edit Selected Indicator buttons to manage the list of indicators.
3. In Step 3 (below), **enter a short description or classifier** for the indicator. To add a new description, type the description in the text box, then click the Add Description to List button. Use the Remove Selected Item and the Edit Selected Item buttons to manage the list of descriptions.

**Threat and Other Measurements - Step 3 of 5**

**Enter a short description or classification of this indicator.**

Target:

Indicator:

1. Add a new description or classification -- type here.  
Click the button to add new item to the list below.

2. List of descriptions -- select an item from the list to go to the next steps of the wizard.

4. In Step 4 of the wizard, enter the indicator measurements and the desired indicator ratings.

Multiple indicator measurements over time can be entered. These measurements contain the following information:

- Date of measurement – the date associated with the measurement. Use the date spinners to assign the appropriate month and year.
- Current Indicator Measurement – the current status of the key ecological attribute in the context of the described indicator ratings.
- Trend – the direction of the measurement – Unknown, Strong Increase, Mild Increase, Flat, Mild Decrease, or Strong Decrease.
- Measurement source – Rough Guess, Expert Knowledge, Rapid Assessment, and Intensive Assessment options.
- Comment – information associated with these measurement and trend entries.

If one or more indicator measurements already exist, a yellow spinner will be visible in the upper left corner of the indicator measurement frame. Click the yellow spinner left to '0 of n' to enter a new record. If no indicator measurement has yet been entered, the yellow spinner will not appear; type directly into the available boxes.

**Threat and Other Measurements - Step 4 of 5**

**Enter current measurements.**

Target: San Miguel River System

Threat: Development of roads or utilities

Indicator: % of key private lands that are under conservation easement

Measurements: Click the yellow spinner left to '0 of n' to enter a new record: Click the yellow spinner left

1 of 1

Date: Dec 2004

Clear this Measurement

Measurements

Measurement: measurement #13

Comment: measurement comment

Trend:

- Unknown
- Strong Increase
- Mild Increase
- Flat
- Mild Decrease
- Strong Decrease

Measurement Source:

- Rough Guess
- Expert Knowledge
- Rapid Assessment
- Intensive Assessment

Add Citation

<< Previous    Next >>    Save and Exit    Cancel

- In Step 5 of the wizard, link objectives to this measurement. Select objectives from the list of objectives or type in a new objective in the Add new objectives box then click the **Add New Objectives to List** button. Click on the objectives from the list of objectives to link them to this record.

**Threat and Other Measurements - Step 5 of 5** ✖

**What objectives are supported by this measurement?**

Target:

Threat:

Indicator:

Objectives related to this measurement:

(7) By 2013, key public and private lands of the Lower Dolores River and surrounding areas (specific locations to be selected) are

(9) By 2013, X acres (TBD) in at least 2 viable Gunnison prairie dog colonies are under full protection status.

1. Add new Objectives -- type here.  
Click the button to add new item to the list below.

Add New  
Objective to  
List

Objectives

2. List of Objectives  
Click on an objective to add to or remove from the above list:

(3) By 2009, eradicate any populations that are found of Colorado Weed list A species (purple loosestrife).

(4) By 2008, at least 2 other priority landscapes in the Southwest have begun woody invasive eradication projects based on le

(5) By 2013, an operational flow regime exists at McPhee Dam that is sufficient to protect water dependent targets (warm water

(6) By 2006, all new water projects will take into account key elements of the San Miguel River flow regime that are needed to

(7) By 2013, key public and private lands of the Lower Dolores River and surrounding areas (specific locations to be selected)

(8) Through 2013, no oil and gas roads or pads will be located within rare plants or plant community occurrences. If oil and c

(9) By 2013, X acres (TBD) in at least 2 viable Gunnison prairie dog colonies are under full protection status.

Remove Selected Objective

Edit Selected Objective

<< Previous

Next >>

Save and Exit

Cancel

When finished, click **Save and Exit**.

# 8 Resources Worksheet

The purpose of the Project Resources worksheet (below) is to evaluate and grade the internal and external resources available for project success.

**Project Resources**  
San Miguel/Dolores River

Categories & Measures	Score
<b>People</b>	
Staff Leadership	High
Multidisciplinary Team	Very High
<b>People Average</b>	Very High
<b>Internal Resources</b>	
Institutional Leadership	High
Funding	Medium
<b>Internal Resources Average</b>	Medium
<b>External Resources</b>	
Social/Legal Framework for Conservation	Very High
Community and Constituency Support	High
<b>External Resources Average</b>	Very High
<b>Overall Project Resource Rank</b>	<b>High</b>

Category	Score
Staff Leadership	High
Multidisciplinary Team	Very High
Institutional Leadership	High
Funding	Medium
Social/Legal Framework for Conservation	Very High
Community and Constituency Support	High
Overall Project Resource Rank	High

Score this worksheet by entering ranks -- Low, Medium, High, or Very High -- in the cells in the Score column. When you select a cell in the Score column and drop down menu will appear from which you select the grade.

To document the reasons for your ranks, select the **Comments** button on the Toolbar. The comment form will open and you can enter your rationale.

The project resource categories are explained in more detail in the following sections.

## 8.1 Staff Leadership

Definition: The presence of a talented staff member with lead responsibility for conserving the area. If multiple staff leaders are involved, they must also have a shared vision of success and successful collaboration mechanisms in place.

- Very High: A staff leader has (1) clearly assigned responsibility, authority, and accountability for conserving the area, (2) experience in implementing conservation strategies, and (3) sufficient time to focus on developing and implementing conservation strategies at the area. If multiple staff leaders

are involved, they have a shared vision of success and successful collaboration mechanisms in place.

- High: A staff leader has any two, but not all three elements of focused staff responsibility (responsibility, experience, time). If multiple staff leaders are involved, there may be some difficulties in collaboration.
- Medium: A staff leader has no more than one of the three elements of focused staff responsibility (responsibility, experience, time). If multiple staff leaders are involved, they have conflicting visions of success and no collaboration mechanisms.
- Low: No staff member(s) with designated job responsibility for site conservation.

## 8.2 Multidisciplinary Team

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Definition: Project receives support from an experienced, multidisciplinary team to develop and implement key strategies - located on site, within the lead institution(s) or provided by partner organizations.

- Very High: The project receives sufficient experienced support from a project team in all functions needed for successful strategy implementation.
- High: The project receives support from a project team – but regular assistance is not available in a few important programmatic areas needed for successful strategy implementation.
- Medium: The project receives support from a project team – but regular assistance is not available in many important programmatic areas needed for successful strategy implementation.
- Low: The project receives insufficient assistance in most programmatic areas.

## 8.3 Institutional Leadership

---

Definition: A private conservation organization (NGO), government agency, other private sector institution or some combination of institutions is providing leadership for developing and implementing conservation strategies at the project area. If multiple institutions are involved they must have a shared vision of success and successful collaboration mechanisms in place.

- Very High: There is clear leadership provided by one or a combination of institutions that (1) have established clear responsibility and (2) developed adequate capacity to implement conservation strategies. If multiple institutions are involved they have a shared vision of success and successful collaboration mechanisms in place.
- High: Institutional leadership is being provided but assignment of responsibility or adequate capacity is not at a sufficient level. If multiple institutions are involved, there may be some difficulties in collaboration.

- Medium: Institutional leadership is failing to provide adequate capacity to implement conservation strategies even though responsibility for project area is has been accepted by one our more institutions. If multiple institutions are involved, there are serious difficulties in collaboration.
- Low: No institution has clear responsibility or adequate capacity to implement conservation strategies

## 8.4 Funding

---

Definition: Existence of sufficient operational funding to support the staff and operating costs, as well as program funding to implement and sustain key strategies. Funding may come from both private and public sectors and be available through a variety of mechanisms and sources, such as appropriation of public funds, contributions by donors, endowment and other sources.

- Very High: Funding to implement key conservation strategies and for core operations has been secured, pledged, or is highly probable for at least two years, and the project has developed likely sources of long-term funding to sustain core costs and key conservation strategies for the next 5 years
- High: Funding to develop and launch key conservation strategies and for core operations has been secured, pledged, or is highly probable for at least two years, and the project has undertaken the necessary financial planning and achieved partial success in developing sources of long-term funding to sustain core costs and key conservation strategies for the next 5 years.
- Medium: Funding has been secured or pledged for core operations for at least one year and some planning underway to develop diversified sources of long-term support for operations and conservation strategies.
- Low: Funding has not been secured or pledged for core operations for one-year and no planning or implementation of long-term funding sources.

## 8.5 Social/Legal Framework for Conservation

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Definition: Existence of an appropriate framework of protection tools and policy instruments that can be deployed to secure enduring conservation results at the project area. The potential legal protection tools include many types of ownerships and forms, such as parks, privately owned conservation areas, community reserves, conservation easements or public designations. The potential policy instruments also include many types, such as development ordinances, legal permits, seasonal restrictions or no-take fisheries zones. This factor seeks to assess whether the potential legal framework for conservation at the project area exists, not whether it has been fully deployed or fulfilled.

- Very High: An appropriate framework of protection tools and policy instruments exists, and is either being deployed, or has the potential to be deployed at the project area.

- High: Most key elements of a legal framework exist, but one key protection tool or policy instrument needs to be authorized or substantially amended.
- Medium: Some elements of a legal framework exist, but two or more key protection tools or policy instruments need to be authorized or substantially amended.
- Low: Few or no elements of a legal framework for conservation exist.

## 8.6 Community and Constituency Support

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Definition: The project team effectively engages and gains the support of key constituencies, including those in the local community.

- Very High: The project team and their program are favorably received and supported by key constituencies, including those in the local community. There are no major obstacles to key strategy implementation due to community resistance.
- High: The project team and their program are largely favorably received and supported by key stakeholders, but there is some difficulty in strategy implementation due to community resistance.
- Medium: The project team and their program have mixed support in the community and there is some significant community opposition to strategy implementation.
- Low: The project team and their program have very little support in the community and there is significant community opposition preventing most key strategy implementation.

## 9 Targets Worksheet

The Targets worksheet (below) allows you to provide additional detail about the eight focal conservation targets for the project, and other species, natural communities, or ecological systems (e.g., ecoregional targets) that may be nested within them. See Section 9.2 (Conservation Targets: Explanation of Concepts and Terms) for more information regarding targets.

Targets				
Focal Target Description and Nested Conservation Targets				
San Miguel/Dolores River				
Conservation Targets	San Miguel River System	Lower Dolores River System	CO Plateau Cliff and Canyon	PJ & Pc
	1	2	3	
<b>Focal Target Description</b>	The river system is the aquatic and riparian targets that are needed to meet ecoregional goals within the San Miguel Watershed	The river system is the aquatic and riparian targets that are needed to meet ecoregional goals within the Dolores River Watershed beginning at McPhee and ending at the Colorado/Utah state line	The cliffs and canyon along the Lower Dolores River form this system.	PJ and Juniper woodlands s Miguel and t also include rare plants.
<b>Nested Target # 1</b>	Foothill-Desert Riparian woodland/shrubland ecological system (COP)	Foothill-Desert Riparian woodland/shrubland ecological system (COP)	Peregrine Falcons	PINYON-JU WOODLAND
<b>Nested Target # 2</b>	Foothills Riparian Woodland and Shrubland ecological system (SRM)	Yellow-billed Cuckoo	Roosting areas for Townsend's big-eared bat	PINYON-JU Ecological S

### 9.1 Entering Data into the Targets Table:



Everything in the Targets worksheet may be entered directly into the table in the Targets worksheet or via the Targets wizard (Steps 2 and 4) from the Home worksheet.

Enter a brief description of the focal conservation target (system) under the appropriate focal conservation target heading (row 6). Targets are automatically displayed in the table. Identify the type of target (individual species, ecological system, major grouping of species, etc.). Other relevant information to include is the scientific name (if appropriate), Natural Heritage Program rank, Federal Endangered Species Act rank.

Enter the name of each nested species or natural community in a **Nested Conservation Targets** row under the appropriate focal conservation target name. Nested conservation targets list the species, natural communities, species assemblages, and species groups that should be conserved if the broader "focal conservation targets" or "systems" are effectively conserved.

To add additional nested targets to the table or delete nested targets from the table, select the **Insert Rows** option or the **Delete Selected Rows** option from the **Tables** menu at the top of the screen.

The Targets table stores comments for documenting focal target descriptions and nested targets. To enter documentation, select the relevant cell in the table; then select the **Comments** toolbar button. A Comment form will appear. Enter your documentation and save.

## 9.2 Conservation Targets: Explanation of Concepts and Terms

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Three types of conservation targets may be referred to in conservation project planning and measures of success.

### Focal Targets

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Focal targets (also called Systems) are the eight or fewer conservation targets used as the basis for conservation project planning and measures of success. Focal conservation targets are selected to represent the numerous other species, natural communities, or ecological systems that (1) occur together with the focal conservation target on the landscape; or (2) are linked by ecological processes, underlying environmental features (e.g., soils, geology, topography), or environmental gradients (e.g., elevation, precipitation, temperature).

### Ecoregional targets

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Ecoregional targets are the species, natural communities and congregations for which the site was selected in an ecoregional assessment.

### Nested Conservation Targets

---

Nested conservation targets are the individual species, natural communities and species assemblages that are associated with, and represented by, the focal target. The list of nested conservation targets will include, at a minimum, all ecoregional targets (species and communities for which the site was chosen in ecoregional planning) that are subsumed by the system. It should also include any other species or communities that the site planning team has recognized as important to conserve at the site. These may be species or communities that are of local concern due to declines in populations or habitat loss, those that provide important functions to the system, or any others that have an important link to the viability of the system. We refer to these species, communities or species groups or assemblages as "nested conservation targets" because they are contained within or otherwise subsumed by one or more of the focal conservation targets.

You may choose to also include ranking information from natural heritage programs or indicate whether the conservation target is protected under the Federal Endangered Species Act.

# 10 Menus worksheet

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The Menu worksheet contains the lists used to create the pull-down menu options for the workbook. Click the **Table Format** button to open a form with a selection of buttons that can take the user to the following menu lists:

- Target Types
- Habitat Associations
- Key Ecological Attributes
- Threats -- Common Taxonomies
- Strategic Actions -- Common Taxonomies
- Ecoregions
- TNC Operating Units ('OU's')
- Countries

Use the Table Format form or the Page Up / Page Down buttons to move to each list.

## 1. Target Types, Habitat Associations:

These lists are used in the Target wizard to provide a common taxonomy of target types and habitat associations. See Section 4.7 for more information about these lists. Users should not edit this list.

## 2. Key Ecological Attributes:

The list of key ecological attributes contains two columns: the Category of the attribute (Landscape Context, Condition, and Size) and the Key Ecological Attribute name. This list is intended to contain a standard set of key attributes.



It is not necessary for you to enter your key attributes into this list for them to be accessible. The drop-down lists of key attributes used for data entry in the workbook automatically include any key attribute entered into the Viability table by the user (see section 3.6).

**3. Threat (Sources) – Common Taxonomy:**

Here is located the list of threats that provide the entries for the common taxonomy of threats. This list is used in the Threats table in the Stress, Source (X) worksheet, and is also accessible from the Summary of Threats table. See Appendix E for more information about this list. Users should not edit this list.

**4. Strategic Actions – Common Taxonomy:**

Here is located the list of strategic actions that provide the entries for the common taxonomy of actions. This list is used in the Action Links table in the Strategies worksheet. See Appendix E for more information about this list. Users should not edit this list.

**5. Ecoregions menus:**

The Ecoregion menu contains the ecoregion realm code, the ecoregion name and its major habitat type. Users should not edit this list.

**6. TNC Operating Units (OU's), Countries:**

These items are linked to the project in the Project wizard.

# 11 Appendix A: Importing and Exporting Data

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## 11.1 Loading Data from another Workbook

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You can automatically transfer data from another workbook into this, the 'active' workbook.

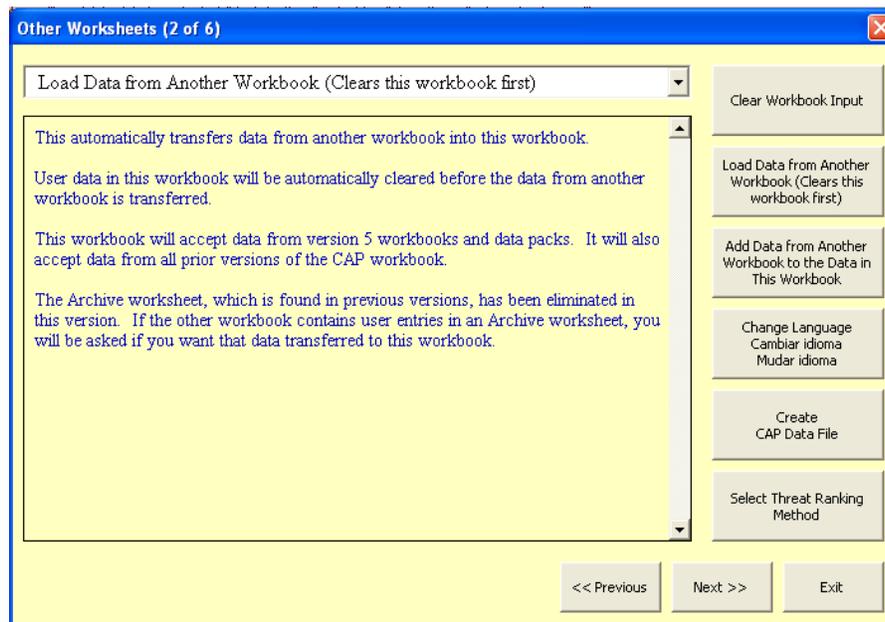
User data in this workbook -- except the list of citations, if it exists -- will be automatically cleared before the data from another workbook is transferred. (If this workbook contains a citation list, you will be asked if you want it cleared.)

This workbook will accept data from version 5a and 6a workbooks and data packs.

To transfer information from a previous workbook (the 'source' workbook) into the newest version of the workbook (the active workbook), you must have both the source workbook and the active workbook open simultaneously. The data import procedure is executed from the active workbook.

To load the data:

1. On the Home worksheet, click **Workbook Setup**. A form will appear:



2. Click **Load Data from Another Workbook** (Clears this workbook first). If one or more other workbooks are open, a list of the open Excel workbooks (other than this workbook) will appear.
3. Select the workbook with the data that you want loaded into this workbook.
4. Click **Load Data from Selected Workbook**.

Check the results of the transfer!

## 11.2 Adding Data from Another Workbook

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You can automatically combine data from another version 6a workbook or data pack (called the 'source' workbook below) to the data in this workbook (called the 'active' workbook).

To transfer information, you must have both the source workbook and the active workbook open simultaneously. The data import procedure is executed from the active workbook.

To load the data:

1. On the Home worksheet, click **Workbook Setup**. A form will appear.
2. Click **Add Data from Another Workbook to the Data in This Workbook**. If one or more other workbooks are open, a list of the open Excel workbooks (other than this workbook) will appear.
3. Select the workbook with the data that you want loaded into this workbook.
4. Click **Add Data from Selected Workbook**.

Requirements:

- The source workbook (or data pack) must be version 6a.
- **THE TARGETS IN THE SOURCE WORKBOOK MUST ALL BE DIFFERENT** than the targets in the active workbook.
  - If the two workbooks share targets, remove the duplicate targets from one of the workbooks. Go to step 1 of the Target wizard to remove a target.
- Since the workbooks must have different targets, the viability information, the threat rankings, and the nested target data from the source workbook will simply be added to the active workbook.
- Threats (and stresses) that have the exact same spelling between the two workbooks will be considered the same threat (stress).
  - You can edit threat names for all targets in a workbook by double-clicking on the threat name in column B of the Summary of Threats table in the Summary worksheet. (This feature is not available for stresses. Stresses must be edited in the Stress/Source worksheet for individual targets.)
- Objectives, strategic actions and indicators that have the exact same spelling between the two workbooks will be considered the same.
  - Use the Strategy Identification wizard to make changes to the objectives and to adjust any links with actions and indicators as necessary.
  - You will have the opportunity to merge two strategic actions into one strategic action and two indicators into one indicator during the clean-up phase, explained below.

- Citations that have the exact same spelling (in the citation abbreviation) will be considered the same citation.
  - Select ‘Update Citations’ from the Tables menu to modify the list of citations after the merge is complete.
- Project resource data is not merged.

Clean-up phase:

- Check the results of the transfer!
- After merging two workbooks, you may find it necessary to merge some data rows that are similar but were spelled differently. Do the following:
  - In the Tables menu, the Merge Rows...’ selection contains two options:
    - Stress/Source: Merge Two Threats
    - Monitoring: Merge Two Indicators
    - Strategies: Merge Two Strategic Actions
  - Use these options to combine indicators and strategic actions as necessary.

### 11.3 Creating a CAP Data Pack

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Users can automatically create a data pack – a separate Excel file (usually less than 200 kb) that contains only the user data in this workbook. The data pack is a convenient way to email user data to another CAP workbook user.

This workbook can create both version 5a and version 6a data packs.

The **version 5a** data pack:

- does NOT contain data that is new to version 6a.
- is loadable into version 5 and 6 workbooks.
- **at the moment, is the only CAP workbook data pack that can be uploaded into ConPro**, the conservation projects database. ConPro also creates a version 5a data pack that can be imported into this workbook.

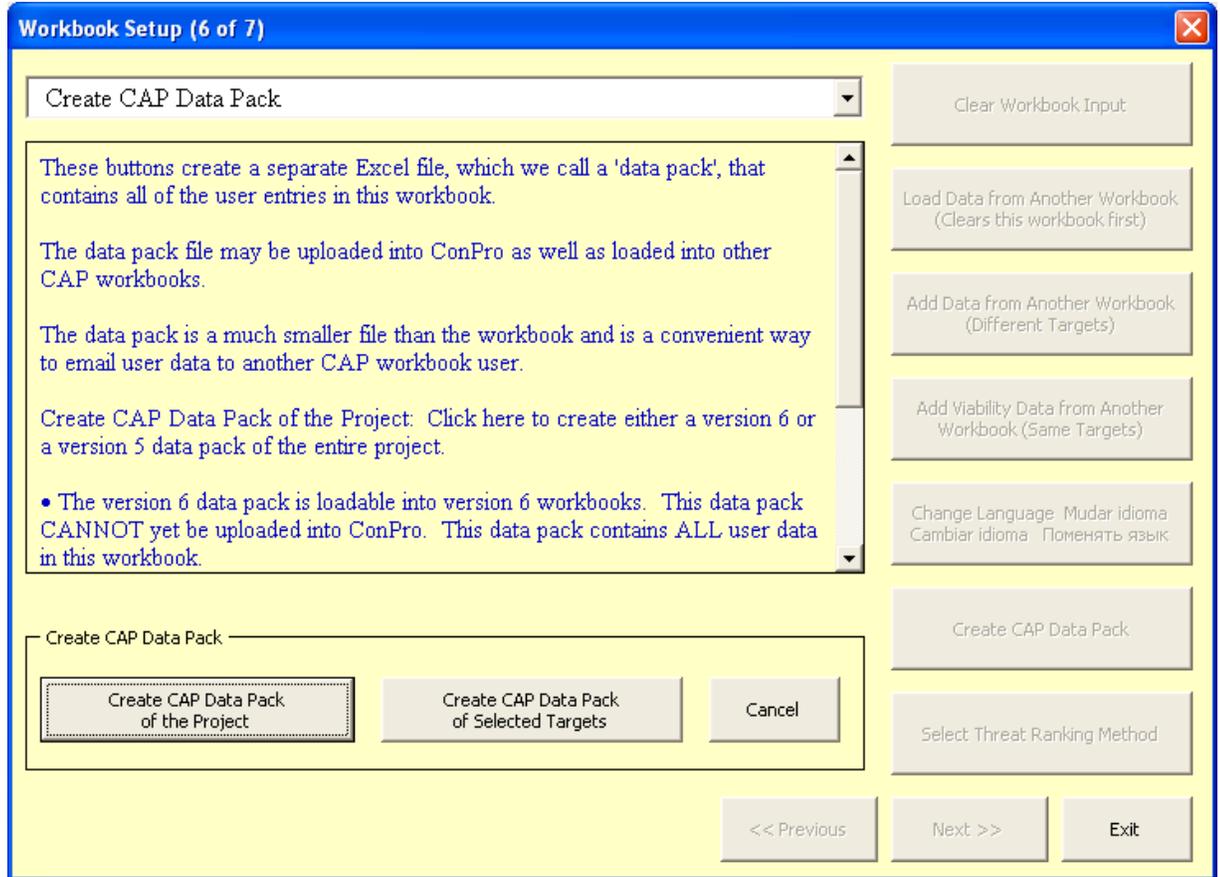
The **version 6a** data pack:

- contains ALL user data in this workbook.
- is loadable into version 6 workbooks.
- **CANNOT yet be uploaded into ConPro**. It can be stored in ConPro as an associated file.

The data pack is a convenient way to email user data to another CAP workbook user.

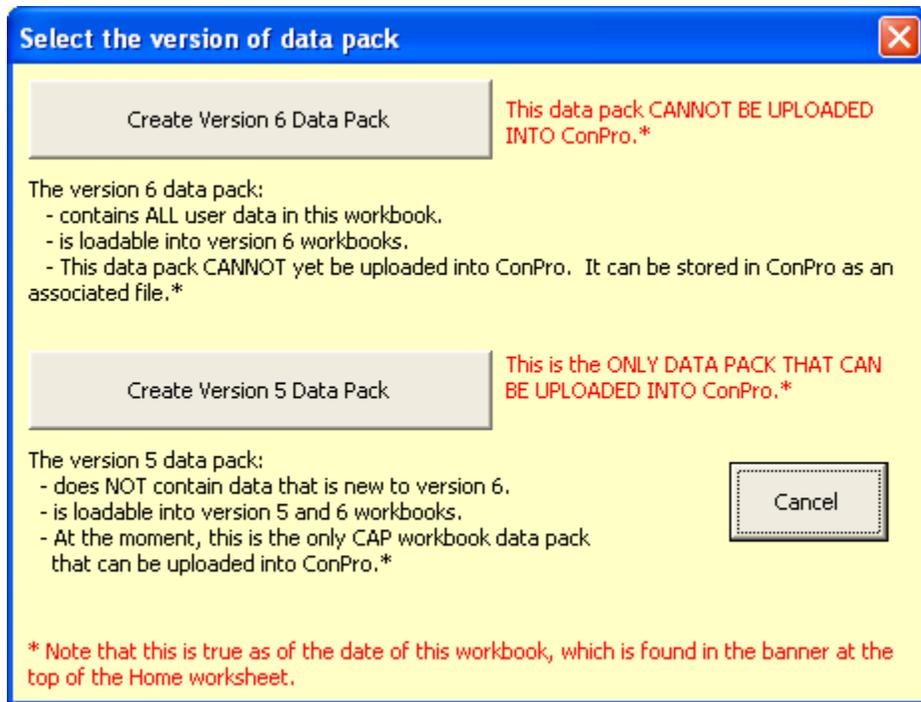
To create a data pack:

1. On the Home worksheet, click **Workbook Setup**. A form will appear.
2. Click **Create CAP Data Pack**. You may be asked to enter the project name and contact information if it is not already entered in the workbook.



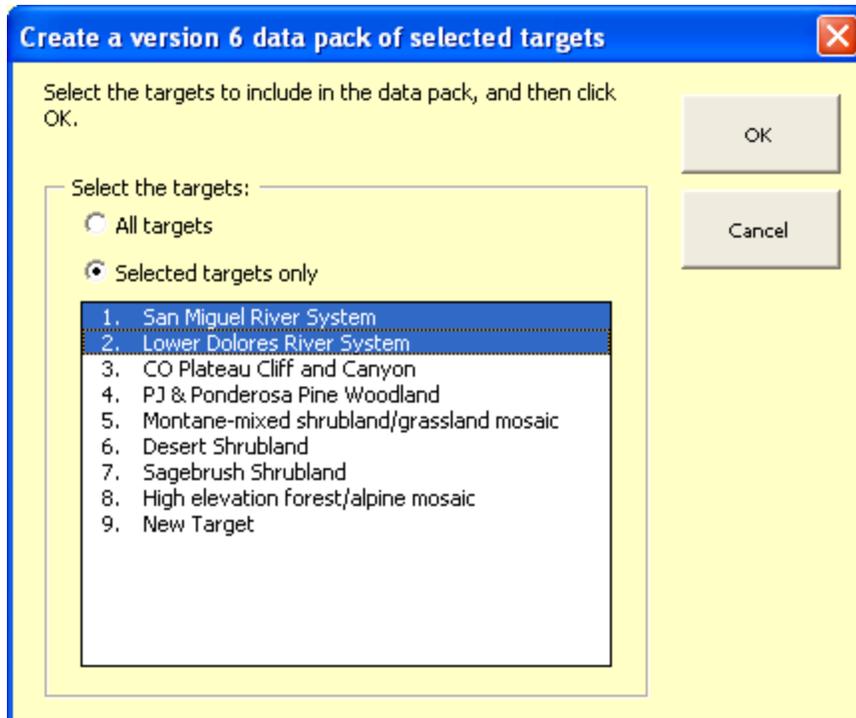
For a data pack of the **entire project**:

3. Click the **Create CAP Data Pack of the Project** button. A form will appear (see below).
4. Click the:
  - **Create Version 6 Data Pack** button if you want a complete data set of the workbook data, or the ...
  - **Create Version 5 Data Pack** button if you want to upload the data into ConPro, or into a version 5 CAP workbook.



For a data pack of **selected targets**

3. Click the **Create CAP Data Pack of Selected Targets** button. A form will appear.



4. Select the targets from the list that you want included in the data pack, and click OK.

## 12 Appendix B: Assessing Target Viability

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### 12.1 Assessing Viability: Explanation of Concepts and Terms

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There are three core components of the Assessment of Target Viability worksheet that apply to all focal conservation targets in a conservation project of any scale – whether these focal targets are individual populations or species, assemblages of species, ecological communities, or ecological systems. These elements and their function are as follows:

1. Key ecological attributes – structure, composition, interactions and abiotic and biotic processes that enable the target to persist through their influence on the target's size, condition and landscape context.
2. Indicators – measurable entities that are used to assess the status and trend of key ecological attributes.
3. Indicator ratings – the ranges of variation in an Indicator that define and distinguish Very Good, Good, Fair, and Poor rating categories to provide a consistent and objective basis for assessing the status of each Indicator.

### 12.2 Key Ecological Attributes

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A key ecological attribute is a critical component of a conservation target's life history, physical processes, community interaction, habitat or interaction with other species.

To help identify these attributes, consider those characteristics of the conservation target that, if degraded (e.g., water quality) or missing (e.g., pollinator), would seriously jeopardize that target's ability to persist over time.

Key ecological attributes are the essential currency for identifying and measuring the composition, structure and function of conservation targets at any biological or geographic scale.

....

At its most basic, a Key Ecological Attribute (KEA) is an aspect of a target's biology or ecology that if present, defines a healthy target and if missing or altered, would lead to the outright loss or extreme degradation of that target over time. For example, a key attribute for a freshwater stream target might be some aspect of water chemistry. If the water chemistry becomes sufficiently degraded, then the stream target is no longer viable.

## 12.3 Viability Categories for Key Attributes

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Key ecological attributes may be categorized in terms of:

- Landscape context
- Condition
- Size

While these categories are useful to consider for every attribute, each should be applied only where relevant (e.g., size is often not relevant for marine system targets). Identify key ecological attributes based on ecological models, the best available scientific literature, local scientific data and/or comparative data from other areas or similar types of targets.

### Size

---

Size is a measure of the area or abundance of the conservation target's occurrence. For ecological systems and communities, size is simply a measure of the occurrence's patch size or geographic coverage. For animal and plant species, size takes into account the area of occupancy and number of individuals. Minimum dynamic area, or the area needed to ensure survival or re-establishment of a target after natural disturbance, is another aspect of size.

### Condition

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Condition is an integrated measure of the composition, structure and biotic interactions that characterize the occurrence. This includes attributes such as reproduction, age structure, biological composition (e.g., presence of native versus exotic species; presence of characteristic patch types for ecological systems), structure (e.g., canopy, understory, and ground cover in a forested community; spatial distribution and juxtaposition of patch types or seral stages in an ecological system), and biotic interactions (e.g., levels of competition, predation, and disease).

### Landscape Context

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Landscape context is an integrated measure of two attributes: the dominant environmental regimes and processes that establish and maintain the target occurrence, and connectivity.

Dominant environmental regimes and processes may include, hydrologic and water chemistry regimes (surface and groundwater), geomorphic processes, climatic regimes (temperature and precipitation), fire regimes and many kinds of natural disturbance.

Connectivity includes such attributes as species targets having access to habitats and resources needed for life cycle completion, fragmentation of ecological communities and system, and the ability of any target to respond to environmental change through dispersal, migration, or re-colonization.

## 12.4 Indicators

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An indicator, in simplest terms, is just what we measure to keep track of the status of a key attribute. Indicators for a monitoring plan are driven primarily from three different sources:

- Objectives and work plan
- Viability table
- Threat table

You should have monitoring indicators for all stated objectives in your work plan. Some of these objective-driven indicators will measure threat abatement and some will track changes in the status of key ecological attributes. There is also a need to track indicators for key ecological attributes listed in the viability table that are not tied to specific objectives - this gives you the ability to report on the overall status of the biodiversity we are striving to conserve. Some of these key ecological attributes will be linked to known threats – others will be presumably unthreatened. You may also have a need to track indicators for identified threats that aren't currently linked to objectives and actions but where you want to monitor changes in the status of the threat to determine if you should be taking action to abate it.

Indicators measuring progress for objectives and strategic actions in the work plan are a top priority. Assuming your objectives are addressing your highest priority threats and your key ecological attributes most in need of attention - this will direct your monitoring efforts to the most important indicators.

A monitoring record is uniquely identified by its indicator. Each monitoring indicator may support multiple targets, categories (e.g., viability or threat) and even key ecological attributes within five categories of monitoring:

1. Landscape Context within Assessments of Target Viability
2. Condition within Assessments of Target Viability
3. Size within Assessments of Target Viability
4. Threat-based monitoring
5. Other monitoring (e.g., tracking improved conservation capacity)

Indicators for monitoring records that support Assessments of Target Viability (1-3) must first be defined and entered in the Assessment of Target Viability table in the Viability worksheet before they can be accessed in the Monitoring or the Strategies worksheets.

A key attribute may need only one indicator. However, many key attributes may be difficult to pin down so easily; they may themselves be multi-faceted phenomena (e.g., the composition of a plant community), or there may be no single best way to monitor it (e.g., transect surveys of floodplain vegetation versus analysis of aerial photographs; census surveys of fishes via electro-fishing versus seining methods). In these cases, you will have to consider using several indicators together to get the best picture of what is going on.

For example, in a river Water Chemistry Regime may be a key ecological attribute, but it is not reasonable to expect that every possible chemical parameter would be measured. A few water chemistry parameters must be selected that will give us an overall indication (indicator) of how the status of our Key Attribute (Water Chemistry Regime) is changing. So the indicator may be a subset of the variables defining the key attribute, or a more measurable substitute for the attribute.

Indicators are monitored to track the status of a conservation target, and ultimately to measure the success of our conservation strategies. Identify indicators for each key attribute based on ecological model development, expert consultation and/or reviews of scientific literature.

## 12.5 Indicator Ratings

The status indicator ratings are defined as:

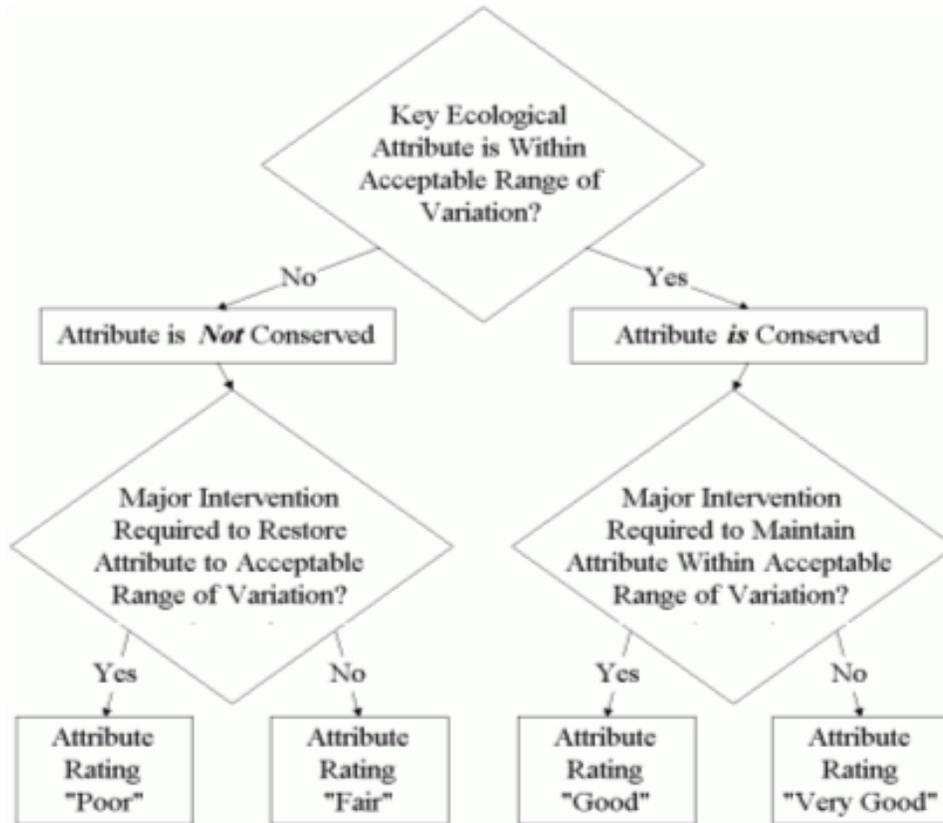
- **Very Good:** The indicator is functioning within an ecologically desirable status, requiring little human intervention for maintenance within the natural range of variation (i.e., is as close to “natural” as possible and has little chance of being degraded by some random event).
- **Good:** The indicator is functioning within its range of acceptable variation, although it may require some human intervention for maintenance.
- **Fair:** The indicator lies outside of its range of acceptable variation and requires human intervention for maintenance. If unchecked, the target will be vulnerable to serious degradation.
- **Poor:** Allowing the indicator to remain in this condition for an extended period will make restoration or prevention of extirpation of the target practically impossible (e.g., it will be too complicated, costly, and/or uncertain to reverse the alteration).



Any target’s key ecological attributes (and therefore their indicators) will vary over time in a relatively undisturbed setting. This variation is not random, but limited to a particular range that we recognize as either a) natural and consistent with the long-term persistence of each target, or b) outside the natural range because of human influences (e.g., fire suppression in fire maintained systems). We consider managing for an acceptable range of variation for each target’s key ecological attributes to be the soundest strategy for biodiversity conservation at any scale.

We define “conserving conservation targets” as maintaining each target’s key ecological attributes within their acceptable ranges of variation. The viability assessment framework therefore emphasizes the importance of identifying the ranges of variation that define the categories of Very Good, Good, Fair, and Poor for indicators of the key ecological attributes.

The following diagram illustrates the distinction between different indicator and Key Attribute ratings.



Assessing the status of each indicator involves two tasks:

- Assembling and analyzing the appropriate monitoring data for the indicator
- Using the results of the analysis to determine the appropriate rating for the indicator.

This step is an important component of the overall measurement of conservation success. In some cases where human disturbance has had a profound impact for a long time, it may be appropriate to locate a “reference condition” (an example of the target that is close to the desired future condition) that has been relatively unaltered to provide data on good or very good ranges of variation for the indicators selected.

## 12.6 Current and Desired Status Ratings

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The Viability Worksheet also contains fields to classify the Current Status and Desired Status for a key attribute and its indicator(s) into one of the four indicator ratings: “Poor”, “Fair”, “Good”, or “Very Good”.

The workbook also has fields to specify the date of the Current Status rating (Year or Month+Year) and the date of the Desired Status. If the desired status is not the current status, the date of the desired status should be a future date; If the desired status is the current status, the date of the desired status should be the same as the date of the current status.

The desired status date specifies the time frame to improve the key ecological attribute and indicator status. Ideally, restoration or maintenance would bring all Attributes to a “Very Good” rating. However, maintaining or restoring Attributes in at least “Good” status may be more realistic. Many landscapes are so altered by human impacts that optimal viability is not possible even if it were understood. Further, the cost and feasibility of moving an Attribute from “Good” to “Very Good” must be considered before such an effort is undertaken. When compared to the current status of each attribute, the desired status provides a sound and explicit basis for gauging how much improvement may be required to conserve each target. The desired status rating is likely to evolve, as the landscape changes and knowledge of each target and attribute improves.

Identifying key ecological attributes, indicators and ratings for each conservation target also provides a crucial and powerful means for integrating the assessment of target status and threats. Using the Viability worksheet, a “stress” to a conservation target can now be defined explicitly as any alteration of a key ecological attribute that can result or has resulted in that attribute declining below a “Good” rating. The indicators selected for tracking the status of key attributes therefore will also track “stresses” to these attributes. Further, the ranges of variation specified for each indicator rating provide the basis for determining how much abatement of each stress is needed to meet conservation objectives.

## 12.7 Measures of Success Recommendations

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1. Minimum assessment requirements for every target:
  - Specify at least one indicator for one attribute with measurable (but not necessarily numerical) rating criteria. For example, consider Connectivity among Communities / Ecosystems as a key ecological attribute for a specific aquatic system where the concern is upstream and downstream connectivity. An indicator for this attribute could be the number of dams that serve as barriers to biota movement. In deciding on a rating scheme, setting the extremes is often the best place to start. At one extreme, all would agree that no barriers to movement of biota would be considered very good status for a given river system. At the other extreme, many barrier dams would be considered poor status. Only one dam on a single tributary might still lead to a good assessment, and a few dams might define fair. In this way, the rating scheme is easily measurable. We often do not really know how the number of dams translates to target viability and as we learn more we can replace these broad categories with more specific and quantitative ones.
  - If project teams are unable to identify criteria for each rating category (poor through very good) of an indicator, rate your best assessment of the current status of the indicator with sufficient justification that someone else would be able to identify a change in the status of that indicator. When assigning the current indicator status, try to consider the concept of natural, or acceptable, range of variation as a guidepost to separate "conserved" (Good or better) versus "not conserved" (Fair or worse). Document how the current status was determined and include a strategy to improve understanding of how to rate status of that target in the CAP.
  - Where the data that would clearly establish criteria for viability are not available, document the best guesses of experts and consider the indicator ratings as hypotheses that we hope to refine over time.
2. Project teams should increase the level of detail above the recommended minimum (i.e., one attribute and indicator per target) over time. Project teams should periodically reevaluate whether the addition of a more comprehensive list of key attributes and further indicators is necessary. Several important conditions to consider that influence the urgency of developing additional indicators are:
  - The viability of the target is clearly threatened over the short-term as indicated by the threats analysis. Sufficient attributes / indicators will be necessary to ensure that threats are being abated by strategies.
  - The team has developed strategies, objectives, and/or actions designed to improve the status of a target. For every action taken to improve target viability, the project team needs to have identified the attributes and indicators with ratings that will respond to that action (and link those to the workplan and monitoring page).

- The project team is concerned about risk incurred if the assumptions of target viability are incorrect. These risks may be to the target (i.e., extinction, collateral damage from conservation action directed to abate threats (like non-target herbicide effects), or to the program (i.e., public relations or political damage, legal or financial liability). If risk is high, project teams need to think more comprehensively about multiple attributes across size, condition, landscape context and their indicators.

Project planning/measures teams should strive to identify the minimum number of attributes and indicators that allow viability to be assessed, not an exhaustive list.

## 13 Appendix C: Developing Strategies

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### 13.1 Strategic Process: Explanation of Concepts and Terms

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The process of developing effective conservation strategies involves six main steps (See Guidelines for Designing and Selecting Conservation Strategies, available at [www.conserveonline.org/2003/06/b/Strategy\\_Guidelines\\_ver6\\_03](http://www.conserveonline.org/2003/06/b/Strategy_Guidelines_ver6_03), for a more comprehensive treatment of conservation strategies):

1. Review the project goal;
2. Define objectives for abating the critical threats and/or for restoring the viability of focal conservation targets (i.e., threat objectives and viability objectives);
3. Deeply probe the contextual situation of the critical threats;
4. Brainstorm potential strategic actions that might accomplish each objective, or multiple objectives;
5. Select priority strategic actions based on benefits, feasibility and costs.
6. Determine key action steps.

The Strategies worksheet and associated Strategy Identification, Strategy Ranking, and Action Steps wizards support the application and documentation of steps 2, 4, 5, and 6. Step 1 is captured within the Project Description field on the Home worksheet. Step 3 informs the strategy selection process but is documented elsewhere.

### 13.2 Objectives

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An objective is a specific statement detailing the desired accomplishment or outcome of a particular set of strategic actions within a project. A typical project will have multiple objectives. Ideally, realization of all the project's objectives should lead to fulfillment of the project goal. It is important to set good objectives—they are the foundation for selecting strategic actions in which to invest and for determining the effectiveness of those actions. A good objective meets the criteria of being:

- Impact Oriented – represents changes in key ecological attributes or critical threat factors that are necessary to achieve the project goal.
- Measurable – definable in relation to some standard scale (e.g., numeric, percentage, fractions or all/nothing states).
- Time-Limited – achievable within a specified period of time.
- Specific – clearly defined so that all people involved in the project have the same understanding of what the terms mean.
- Practical – achievable and appropriate within the context of the project.

- Credible – representing best scientific judgment as to what is necessary for conservation success.

Objectives can be stated in terms of reducing the status of a critical threat, enhancing or maintaining the status of a key ecological attribute, or both.

### 13.3 Strategies – Strategic Actions & Action Steps

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A strategic action is a broad or general course of action undertaken by a project team to reach one or more of the project's objectives. A good strategic action meets the criteria of being:

- Linked – directly related to a specific objective(s).
- Strategic – maximizes leverage and efficiency.
- Focused – outlines specific steps for implementing the action.
- Feasible – achievable in light of the project's resources and constraints.
- Appropriate – acceptable to and fitting within project-specific cultural, social and ecological norms.

Action Steps are the principle steps or activities necessary for implementing the actions.

## 13.4 Examples of Objectives, Strategic Actions, and Action Steps

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Example focused on threat abatement:

Objective: By 2010, reduce the percent cover of invasive species A to less than 5%, throughout the mixed grassland habitat in Conservation Area X.

Strategic Action: Implement a volunteer-based program to manually control invasive species A.

Action Step: Organize a volunteer training event to recruit and instruct volunteers on invasive species removal techniques.

Example focused on enhancing target viability:

Objective: By 2010, increase the population size of juvenile Chinook salmon to more than 1,000 individuals, within in the lower floodplain habitat of Conservation Area Y.

Strategic Action: Improve juvenile salmon recruitment by changing watershed practices that cause a high degree of embedded sediments from excessive erosion.

Action Step: Review all public agency management plans to evaluate the likely contribution of logging, road building and grazing plans on excessive erosion within the watershed.

Example focused on threat abatement and enhancing target viability:

Objective: By 2015, restore the fire regime to achieve a fire return interval of 5-10 years over at least 5,000 acres of grassland habitat at Conservation Area Z (in this case, fire suppression efforts were identified as a key threat limiting the key ecological process of periodic burning).

Strategic Action: Establish a partnership with the Bureau of Land Management fire crew to conduct annual prescribed burns.

Action Step: Establish a Memorandum of Understanding with the local Bureau of Land Management office to enable partnership prescribed burns to occur. If you still get one of the above error messages, then send the source file to the Conservation Action Planning maintenance team to load.

## 14 Appendix D: Scoring Worksheet

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This worksheet contains the underlying matrices and scoring thresholds used to combine and rank the input of the various worksheets. Descriptions accompany each matrix or scoring threshold table in this worksheet. The contents of this worksheet will help you understand how and why certain rank combinations produce particular results. Changes to the matrices in this worksheet will change the results of scoring in the individual target worksheets and the Summary worksheet.

### 14.1 Formatting the cells containing ranks

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The first screen of this worksheet (below) enables the user to define the formats (color and hatch marks) of ranks. This may be helpful in distinguishing between ranks for printed output.

**Menus**

Scoring Tables, Matrices, and Lists The tables and lists below define the scoring and ranking algorithms of the model. Changes made to the matrices and lists below will change the results of the worksheets in this model.

**Click the Instructions button of the Toolbar for a detailed description of the scoring methodology. Click the page-down icon ▼ to the right to view more tables, matrices and lists.**

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**Formatting the cells containing ranks**

The default color format for ranks is the color sequence dark green, light green, yellow, and red, with no hatch marks. You may change the formatting for all tables in the workbook:

- Select one of the four cells under "Grade or Rank Formats".
- Click the Unprotect Worksheet button.
- From the Format menu at the top of the screen, select Cells..., then the Patterns tab.
- Select the color and/or pattern that you want to use for that cell. Then click OK.
- Click the Protect Worksheet button.

Click the Refresh Data button on the toolbar or from the Tables menu to reformat all worksheets.

Ranks	Format for each rank	Unprotect Worksheet	Reset to Default Format
Very Good or Low	Dark Green	Unprotect Worksheet	Reset to Default Format
Good or Medium	Light Green		
Fair or High	Yellow	Protect Worksheet	
Poor or Very High	Red		

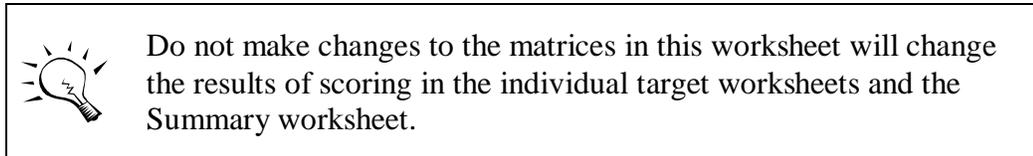
The default color format for ranks is the color sequence dark green, light green, yellow, and red, with no hatch marks. You may change the formatting for all tables in the workbook.

1. Select one of the four cells under Grade or Rank Formats.
2. Click Unprotect Worksheet.
3. From the Format menu at the top of the screen, select Cells..., then the Patterns tab.
4. Select the color and/or pattern that you want to use for that cell.

5. Click OK.
6. Click Protect Worksheet.

Click the Refresh Data button on the toolbar or from the Tables menu to reformat all worksheets.

The other screens of the Scoring worksheet contain matrices and scoring thresholds used to combine and rank the input of the various worksheets.



## 14.2 Viability Ranks in the Assessment of Target Viability Summary Table

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Each Target's Category of viability -- landscape context, condition and size -- is described by Key Ecological Attributes that are measured by Indicators. Unique Key Ecological Attribute - Indicator combinations make up each row in the Assessment of Target Viability table and are graded as Very Good, Good, Fair, or Poor.

There may be multiple Indicators measuring one Key Ecological Attribute for one Category for a Target; if so, a numeric value is given to each graded Indicator: Very Good = 4.0, Good = 3.5, Fair = 2.5 and Poor = 1.0. The grade for the Key Ecological Attribute is derived from the average of these numeric values for the Indicators, using the following ranges:

Poor: 1.0 - 1.745

Fair: 1.75 - 2.995

Good: 3.0 - 3.745

Very Good: 3.75 - 4.0

There may also be multiple Key Ecological Attributes for one Category for a Target; if so, the following describes the scoring method for getting the Category grade from the ranks of multiple Key Ecological Attributes:

- If any Key Attribute = Poor, the Category is Poor.
- If any Key Attribute = Fair, the Category is Fair.
- If all Key Attributes are all ranked Good and/or Very Good:
  - The Category is Good if the number of Good ratings are equal to or greater than the number of Very Good ratings.
  - The Category is Very Good if the number of Very Good ratings are greater than the number of Good ratings.

Each Category (landscape context, condition and size) can be overridden and/or can be weighted at 1.0, 0.75, 0.5, 0.25 or zero.

The weighted average of the Categories (using the same values as used for the Indicators: Very Good = 4.0, Good = 3.5, Fair = 2.5, and Poor = 1.0) yields a score which is converted into a Viability Rank for each target. The conversion back from numbers to ranks is the same as above.

To derive a Site Biodiversity Health Rank, the Viability Rank for each target is normalized to the numeric values for each grade (again Very Good = 4.0, Good = 3.5, Fair = 2.5, and Poor = 1.0), and these Target Viability Ranks are averaged. This average is converted back to a Site Biodiversity Health Rank using the above conversion ranges.

### 14.3 Stress Ranking (Severity-Scope)

Each stress is ranked Very High, High, Medium or Low. The rank of each stress is typically a combination of the Severity and Scope ranking for the stress. The stress rank is calculated automatically from the matrix below.

For example, if the Scope of the stress is Very High and the Severity of the stress is Medium the overall rank of the stress is Medium.

Users can directly enter an alternative stress rank in the "User Override" cells.

#### Scoring: Stress Ranking

Stress = f ( Severity and Scope )

		Severity				
		Very High	High	Medium	Low	-
Scope	Very High	Very High	High	Medium	Low	-
	High	High	High	Medium	Low	-
	Medium	Medium	Medium	Medium	Low	-
	Low	Low	Low	Low	Low	-

### 14.4 Alternative Threat Ranking (Severity-Scope combined with Irreversibility)

The alternative threat rank is calculated from the combination of the two matrices below. The first matrix combines the Severity ranking for the threat and Scope ranking for the threat to yield a Threat Magnitude rank. The second matrix below is combines the Threat Magnitude rank calculated in the first matrix with the Irreversibility rank for the threat. There is no user override option for alternative threat ranking.

### 14.5 Threat (Source-Stress Combination) Ranking

#### Source Ranking

Each source is ranked Very High, High, Medium or Low. A source rank is a combination of the Contribution ranking for the source and the Irreversibility ranking for the source. The source rank is calculated automatically from the first matrix below; for example, if the Irreversibility of the source is Very High and the

Contribution of the source is Medium the overall rank of the source is High. Users can directly enter an alternative source rank in the "Override" cells.

### Threat Ranking

The source rank calculated from the first matrix is combined with the stress rank (which was calculated from the Stress Ranking matrix.) This combination is done in the threat matrix (below). There is no user override option for the result.

#### Scoring: Source and Threat Ranking

Source = f ( Contribution and Irreversibility )

		Contribution				
		Very High	High	Medium	Low	
Irreversibility	Very High	Very High	High	High	Medium	-
	High	Very High	High	Medium	Medium	-
	Medium	High	Medium	Medium	Low	-
	Low	High	Medium	Low	Low	-
		-	-	-	-	-

Threat = f ( Source and Stress )

		Source				
		Very High	High	Medium	Low	
Stress	Very High	Very High	Very High	High	Medium	-
	High	High	High	Medium	Low	-
	Medium	Medium	Medium	Low	Low	-
	Low	Low	Low	Low	-	-
		-	-	-	-	-

## 14.6 Threat-to-System Ranking - Threat Summary at the Target Level

The Threat-to-System rank table is the summary ranking for all threats associated with a particular source of stress to a conservation target. It summarizes the individual threat ranks shown in each stress column. The Threat-to-System rank is found in the far right column of the "Threats - Sources of Stress" table in the Stress,Sources worksheets.

The Threat-to-System rank is at least the highest rank given to any threat associated with a particular source of stress. Thus, if any one of the threats associated with a source of stress is ranked Very High within a target, the Threat-to-System rank for that source line will be Very High.

If there are multiple threats related to the same source of stress, the Threat to System rank may be adjusted upwards by using the "3-5-7" rule as follows:

- Three High rankings equal a Very High.
- Five Medium rankings equal a High.
- Seven Low rankings equal a Medium.

Using this rule, multiple threat ranks are consolidated into new aggregate threat ranks for each source of stress. In some cases, additional consolidation of the aggregate threat ranks with the remaining threat ranks may be needed to yield the final Threat-to-System Rank. For example, assume you have the following threats associated with

the same source of stress: two High rankings and five Medium rankings across the seven stress columns. The five Medium rankings equal one High ranking. This High rank would be added to the two other High rankings to yield a Threat-to-System rank of Very High. The computation is therefore:  $2H + 5M = 3H = 1VH$ .

#### 14.7 Overall Threat Ranking - Threat Summary ACROSS ALL TARGETS

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Overall Threat ranks are determined by combining Threat-to-System ranks across all System/Targets affected by that threat. The Overall Threat rank is found in the next-to-last column of the "Summary of Threats for All Systems" table in the "Summary" worksheet.

The Overall Threat rank is determined by the "2 Prime" rule which is as follows:

- Two Very High threat rankings yield an Overall Threat Rank of Very High
- One Very High or Two High threat rankings yield an Overall Threat Rank of High
- One High or Two Medium threat rankings yield an Overall Threat Rank of Medium
- Less than Two Medium threat rankings yield an Overall Threat Rank of Low.

As in the Threat-to-System ranking, multiple threat ranks are first aggregated using the "3-5-7" rule prior to calculation of the Overall Threat Rank. Thus, three High threat ranks equal one Very High threat rank, five Medium threat ranks equal one High threat rank and seven Low threat ranks equal one Medium threat rank.

For example, assume that a threat (labeled by its source of stress) has three High rankings and five Medium rankings across the eight target columns. The five Medium rankings equal one High ranking, thus equating to four High rankings. Since three High rankings equal a Very High rank, this equates to one Very High and one High. Under the "2 Prime" rule a Very High Overall Threat Rank requires two Very High's, so the Overall Threat Rank would be only High.

#### 14.8 Threat Status FOR THE ENTIRE CONSERVATION PROJECT

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The Threat Status for the Project is determined using the "2 Prime" rule explained in the Overall Threat Ranking. It is based on the ranking of the eight highest Overall Threats (sometimes adjusted by the "majority rank override" rule explained below). The Threat Status for a Project is found in the lower right corner of the "Summary of Active Threats" table in the "Summary" worksheet.

Summary ranks are also provided for each Conservation Target in the bottom row of the "Summary of Active Threats" table. These ranks are provided to characterize the overall threat status for each target. The ranks are determined using the "2 Prime" rule explained above in the Overall Threat Ranking. These ranks, however, are NOT used to calculate the overall Threat Status for the Project (below), which is calculated from the ranks in the Overall Threat Rank column.

**Scoring: Threat Status of the Site**

Kick-in percentage for the "majority rank override" rule: over 50%

		Majority Rank Override Rule			
		Very High	High	Medium	None
<2Prime>	Very High	Very High	Very High	Very High	Very High
	High	Very High	High	High	High
	Medium	Very High	High	Medium	Medium
	Low	Very High	High	Medium	Low
	-	Very High	High	Medium	-

**14.9 Rules for the Threat Status for a project**

There are two rules governing the determination of the Threat Status for a Project Rank:

1. "2 Prime" Rule
2. Majority Rank Override Rule

**"2 Prime" Rule**

The threat status for a project rank is determined by a "2 Prime" rule as follows:

- Two Very High threat rankings yield a Very High rank for the Project.
- One Very High or Two High threat rankings yield a High rank for the Project.
- One High or Two Medium threat rankings yield a Medium rank for the Project.
- Less than Two Medium threat rankings yield a Low rank for the Project.

As in the Threat-to-System and the Critical Threat ranking, three High threat ranks equal one Very High threat rank, five Medium threat ranks equal one High threat rank, and seven Low threat ranks equal one Medium threat rank.

For example, assume that a project has three High rankings and five Medium rankings as its eight highest threats. The five Medium rankings equal one High ranking, thus equating to four High rankings. Since three High rankings equal a Very High rank, this equates to one Very High and one High. Under the "2 Prime" rule a Very High rank for the Project requires two Very High's, so the project rank would be only High.

**Majority Rank Override Rule**

The "2 Prime" rule is more sensitive to threats that affect multiple targets within a project than it is to threats that affect only one target. Unfortunately, in cases where targets are threatened by multiple unrelated threats, the Threat Status of a project may not be ranked high enough. For example, assume a project had targets A, B, and C that were threatened independently at a "Very High" level by threats X, Y, and Z. Under the "2 Prime" rule the Critical Threat rank of each threat would be "High" and,

using the "2 Prime" rule again, the three High ranks would yield a High Threat Status for the project.

To adjust ranks upward in cases such as the example above, the "majority rank override" rule would kick in. This rule states that if a majority (more than 50%) of the targets within a project have a Very High (or High, or Medium...) threat to their system, then the Threat Status of the project would be Very High (or High, or Medium...).

Occasionally, the "2 Prime" rule yields a higher rank than the "majority rank override" rule. The matrix ensures that in all cases, the higher rank is selected.

## 14.10 Strategic Action Ranking

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An Overall Rank for a strategic action is calculated from the following factors, all of which are entered in the Strategy Ranking wizard.

Overall Benefit Rank	Method of Ranking
Contribution	Directly by User
Threat Abatement	Calculated
Viability Enhancement	Calculated
Duration	Directly by User
Leverage	Directly by User
Overall Feasibility Rank	Method of Ranking
Lead Individual / Institution	Directly by User
Ease of Implementation	Directly by User
Overall Cost Rank	Method of Ranking
Cost	either Calculated or Directly by User

## 14.11 Calculation Methodology for Threat Abatement Benefit Scoring

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In the Strategy Ranking wizard, the user selects which of the top sixteen Threats, and which targets affected by that Threat, are addressed by a Strategic Action -- whether the Action is predicted to reduce the Threat rank by one or more ranks (e.g. "Very High" --> "High", "High --> Medium", "High --> Low", etc). The Action is given a threat abatement score equivalent to the current threat rank for that Threat for that Target. Thus, an action that is expected to reduce a "Very High" threat rank by one or more rank classes for Target #1 is assigned a "Very High" benefit for Target #1, and another strategy that is expected to reduce a "Medium" threat rank to a "Low" threat rank is assigned a "Medium" benefit.

A single strategic action may reduce stresses attributed to multiple sources of stress. For example, an action to obtain conservation easements may be predicted to reduce

or eliminate threats caused by both primary home development and commercial/industrial development. The Threat Abatement rank is at least equal to the highest benefit rank assigned to any threat addressed by a particular action. Therefore:

- A strategic action that abates a Very High rank yields a Very High benefit.
- A strategic action that abates a High rank yields a High benefit.
- A strategic action that abates a Medium rank yields a Medium benefit.
- A strategic action that abates a Low rank yields a Low benefit.

If an action affects multiple threats the Threat Abatement rank is determined by the "3-5-7" rule as follows:

- Three High rankings equal a Very High.
- Five Medium rankings equal a High.
- Seven Low rankings equal a Medium.



The Threat Abatement rank aggregates all of the action's benefit ranks attributed to any individual threats affected by a particular strategic action. Thus, it can include benefits from multiple targets and multiple threats.

## 14.12 Calculation Methodology for Viability Enhancement Benefit Scoring

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The calculations for viability enhancement are similar to those for threat abatement. In the Strategy Ranking wizard, the user selects which Key Ecological Attributes in which Target for which Category -- that is to say which rows from the Viability table -- are addressed by a Strategic Action. A row is selected if the Action is predicted to improve the rating of the Key Attribute by one or more ranks (e.g. "Poor" --> "Fair", "Fair --> Good", "Poor --> Good", etc).

The Action is given a viability enhancement score as follows:

- A strategic action that improves the equivalent of two Poor ranks yields a Very High benefit.
- A strategic action that improves the equivalent of one Poor grade yields a High benefit.
- A strategic action that improves the equivalent of one Fair grade yields a Medium benefit.
- A strategic action that improves less than a Fair grade yields a Low benefit.

If an action affects multiple key ecological attributes the Viability Enhancement rank uses the following equivalencies:

- Two Fair ranks equal a Poor.
- Three Good ranks equal a Fair.
- Very Good ranks have no value.

## 14.13 Overall Strategy Rank

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The rankings of Threat Abatement and Viability Enhancement Benefits ranking are combined using the series of scoring matrices shown below to determine the Overall Rank.

### To Calculate the Benefit Rank:

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1. The Threat Abatement rank is combined with the Viability Enhancement rank to get an Initial rank.
2. The Initial rank is combined with the Contribution rank to get a Second rank.
3. The Second rank is combined with the Duration rank to get a Third rank.
4. The Third rank is combined with the Leverage rank to get the Benefit rank.

### To Calculate the Feasibility Rank

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The Lead Individual/Institution rank is combined with the Ease of Implementation rank.

## To Determine the Overall Rank

The Overall Rank (below) is determined by one of the four Feasibility x Cost matrices. The matrix used depends on the Benefit Rank. For example, if the Benefit Rank is “Medium”, then the “Benefits = Medium” Matrix (the fifth matrix below) is used to determine the Overall Rank.

### Overall Strategy Rank = f ( Benefits, Feasibility and Cost )

		Feasibility				
		Very High	High	Medium	Low	
Benefits = Very High						
< Cost >	Very High	Very High	High	High	Medium	-
	High	Very High	Very High	High	Medium	-
	Medium	Very High	Very High	Very High	High	-
	Low	Very High	Very High	Very High	Very High	-
Benefits = High						
< Cost >	Very High	High	Medium	Medium	Low	-
	High	High	High	Medium	Low	-
	Medium	Very High	High	High	Medium	-
	Low	Very High	Very High	High	High	-
Benefits = Medium						
< Cost >	Very High	Medium	Low	Low	Low	-
	High	Medium	Medium	Low	Low	-
	Medium	High	Medium	Medium	Low	-
	Low	Very High	High	Medium	Medium	-
Benefits = Low						
< Cost >	Very High	Low	Low	Low	Low	-
	High	Low	Low	Low	Low	-
	Medium	Medium	Low	Low	Low	-
	Low	High	Medium	Low	Low	-

## 14.14 Project Resource Measures

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The Project Resource Measures rank six resource indicators with the following four ranks and point values:

Very High	4.0
High	3.0
Medium	2.0
Low	1.0

The indicators are equally weighted in deriving an overall average point value. This average is converted to a rank of Very High, High, Medium or Low for the project according to the following grading scale:

Very High	3.5 - 4.0
High	3.0 - 3.49
Medium	2.0 - 2.99
Low	0.1 - 1.99

## 15 Appendix E: Common Taxonomies

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This workbook includes common taxonomies of threats and strategic actions. To print either of the taxonomy lists into Word, click **Load Taxonomy List into Microsoft Word** from the help system.

There are two main reasons for developing such taxonomy:

To facilitate cross-project learning and the development of a science of conservation. A common taxonomy enables practitioners to search a database of conservation projects and find projects addressing similar conservation problems and (hopefully) to learn how, and with what success, those threats are being addressed.

To create general summaries or “roll-ups” for broader organizational purposes and/or use by senior managers, fundraisers, and external affairs staff. Summaries can tally the frequency a given type of threat across projects at various organizational scales or be combined with other information for more detailed summaries.

The below taxonomy is meant to be comprehensive in terms of the numbered categories and lettered classes. It only provides examples of each category of specific threat types in the *italic text*.

### 15.1 Taxonomy of Threats

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**(1) Residential & Commercial Development** - Threats from human settlements or other non-agricultural land uses with a substantial footprint

**a) Housing & Urban Areas** - Human cities, towns, and settlements including non-housing development typically integrated with housing (*urban areas, suburbs, villages, ranchettes, vacation homes, shopping areas, offices, schools, hospitals, birds flying into windows*)

**b) Commercial & Industrial Areas** - Factories and other commercial centers (*military bases, factories, stand-alone shopping centers, office parks, power plants, train yards, ship yards, airports, landfills*)

**c) Tourism & Recreation Areas** - Tourism and recreation sites with a substantial footprint (*ski areas, golf courses, resorts, cricket fields, county parks, afghan goat polo fields, campgrounds*)

**(2) Agriculture & Aquaculture** - Threats from farming and ranching as a result of agricultural expansion and intensification, including silviculture, mariculture and aquaculture

**a) Annual & Perennial Non-Timber Crops** - Crops planted for food, fodder, fiber, fuel, or other uses (*wheat farms, sugar cane plantations, rice paddies, hillside rice production, household swidden plots, banana or pineapple plantations, mango or apple orchards, olive or date groves, vineyards, oil palm plantations, tea or coffee plantations, mixed agroforestry systems, coca plantations*)

**b) Wood & Pulp Plantations** - Stands of trees planted for timber or fiber outside of natural forests, often with non-native species (*teak or eucalyptus plantations, loblolly pine silviculture, Christmas tree farms*)

**c) Livestock Farming & Ranching** - Domestic terrestrial animals raised in one location on farmed or non-local resources (farming); also domestic or semi-domesticated animals allowed to roam in the wild and supported by natural habitats (ranching) (*cattle feed lots, chicken farms, dairy farms, cattle ranching, goat, camel, or yak herding*)

**d) Marine & Freshwater Aquaculture** - Aquatic animals raised in one location on farmed or non-local resources; also hatchery fish allowed to roam in the wild (*shrimp or fin fish aquaculture, fish ponds on farms, hatchery salmon, seeded shellfish beds, artificial algal beds*)

**(3) Energy Production & Mining** - Threats from production of non-biological resources

**a) Oil & Gas Drilling** - Exploring for, developing, and producing petroleum and other liquid hydrocarbons (*oil wells, deep sea natural gas drilling*)

**b) Mining & Quarrying** - Exploring for, developing, and producing minerals and rocks (*coal strip mines, alluvial gold panning, gold mines, rock quarries, sand/salt mines, coral mining, deep sea nodules, guano harvesting, dredging outside of shipping lanes*)

**c) Renewable Energy** - Exploring, developing, and producing renewable energy (*geothermal power production, solar farms, wind farms (including birds flying into windmills), tidal farms*)

**(4) Transportation & Service Corridors** - Threats from long narrow transport corridors and the vehicles that use them including associated wildlife mortality

**a) Roads & Railroads** - Surface transport on roadways and dedicated tracks (*highways, secondary roads, primitive roads, logging roads, bridges & causeways, road kill, fencing associated with roads, freight/passenger/mining railroads*)

**b) Utility & Service Lines** - Transport of energy & resources (*electrical & phone wires, aqueducts, oil & gas pipelines, electrocution of wildlife*)

**c) Shipping Lanes** - Transport on and in freshwater and ocean waterways (*dredging, canals, shipping lanes, ships running into whales, wakes from cargo ships*)

**d) Flight Paths** - Air and space transport (*flight paths, jets impacting birds*)

**(5) Biological Resource Use** - Threats from consumptive use of "wild" biological resources including both deliberate and unintentional harvesting effects; also persecution or control of specific species

**a) Hunting & Collecting Terrestrial Animals** - Killing or trapping terrestrial wild animals or animal products for commercial, recreation, subsistence, research or cultural purposes, or for control/persecution reasons; includes accidental mortality/bycatch (*bushmeat hunting, trophy hunting of lions, beaver trapping, butterfly collecting, honey or bird nest hunting, wolf control, pest control, persecution of snakes because of superstition*)

**b) Gathering Terrestrial Plants** - Harvesting plants, fungi, and other non-timber/non-animal products for commercial, recreation, subsistence, research or cultural purposes, or for control reasons (*wild mushroom collection, forage for stall fed animals, orchid collection, rattan harvesting, control of host plants to combat timber diseases*)

**c) Logging & Wood Harvesting** - Harvesting trees and other woody vegetation for timber, fiber, or fuel (*clear cutting of hardwoods, selective commercial logging of ironwood, pulp or woodchip operations, fuel wood collection, mangrove charcoal production*)

**d) Fishing & Harvesting Aquatic Resources** - Harvesting aquatic wild animals or plants for commercial, recreation, subsistence, research, or cultural purposes, or for control/persecution reasons; includes accidental mortality/bycatch (*trawling for tuna, blast fishing for grouper, spear fishing for sharks, shellfish harvesting, whaling, seal hunting, turtle egg collection, live coral collection, seaweed collection*)

**(6) Human Intrusions & Disturbance** - Threats from human activities that alter, destroy and disturb habitats and species associated with non-consumptive uses of biological resources

**a) Recreational Activities** - People spending time in nature or traveling in vehicles outside of established transport corridors, usually for recreational reasons (*off-road vehicles, motorboats, motorcycles, jet-skis, snowmobiles, ultralight planes, dive boats, whale watching, mountain bikes, hikers, cross-country skiers, hanggliders, birdwatchers, scuba divers, pets brought into recreation areas, temporary campsites, caving, rock-climbing*)

**b) War, Civil Unrest & Military Exercises** - Actions by formal or paramilitary forces without a permanent footprint (*armed conflict, mine fields, tanks & other military vehicles, training exercises & ranges, defoliation, munitions testing*)

**c) Work & Other Activities** - People spending time in or traveling in natural environments for reasons other than recreation or military activities (*law enforcement, drug smugglers, illegal immigrants, species research, vandalism*)

**(7) Natural System Modifications** - Threats from actions that convert or degrade habitat in service of “managing” natural or semi-natural systems, often to improve human welfare

**a) Fire & Fire Suppression** - Suppression or increase in fire frequency and/or intensity outside of its natural range of variation (*fire suppression to protect homes, inappropriate fire management, escaped agricultural fires, arson, campfires, fires for hunting*)

**b) Dams & Water Management/Use** - Changing water flow patterns from their natural range of variation either deliberately or as a result of other activities (*dam construction, release of too little or cold water from dam operations, sediment control, change in salt regime, wetland filling for mosquito control, levees and dikes, surface water diversion, groundwater pumping, channelization, ditching, artificial lakes*)

**c) Other Ecosystem Modifications** - Other actions that convert or degrade habitat in service of “managing” natural systems to improve human welfare (*land reclamation projects, abandonment of managed lands, rip-rap along shoreline, mowing grass, tree thinning in parks, beach construction, removal of snags from streams*)

**(8) Invasive & Other Problematic Species & Genes** - Threats from non-native and native plants, animals, pathogens/microbes, or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread and/or increase in abundance

**a) Invasive Non-Native/Alien Species** - Harmful plants, animals, pathogens and other microbes not originally found within the ecosystem(s) in question and directly or indirectly

introduced and spread into it by human activities (*feral cattle, household pets, zebra mussels, Dutch elm disease or chestnut blight, Miconia tree, introduction of species for biocontrol, chytrid fungus affecting amphibians outside of Africa*)

**b) Problematic Native Species** - Harmful plants, animals, or pathogens and other microbes that are originally found within the ecosystem(s) in question, but have become “out-of-balance” or “released” directly or indirectly due to human activities (*overabundant native deer, overabundant algae due to loss of native grazing fish, native plants that hybridize with other plants, plague affecting rodents*)

**c) Introduced Genetic Material** - Human altered or transported organisms or genes (*pesticide resistant crops, hatchery salmon, restoration projects using non-local seed stock, genetically modified insects for biocontrol, genetically modified trees, genetically modified salmon*)

**(9) Pollution** - Threats from introduction of exotic and/or excess materials or energy from point and nonpoint sources

**a) Household Sewage & Urban Waste Water** - Water-borne sewage and non-point runoff from housing and urban areas that include nutrients, toxic chemicals and/or sediments (*Discharge from municipal waste treatment plants, leaking septic systems, untreated sewage, outhouses, oil or sediment from roads, fertilizers and pesticides from lawns and golf-courses, road salt*)

**b) Industrial & Military Effluents** - Water-borne pollutants from industrial and military sources including mining, energy production, and other resource extraction industries that include nutrients, toxic chemicals and/or sediments (*toxic chemicals from factories, illegal dumping of chemicals, mine tailings, arsenic from gold mining, leakage from fuel tanks, PCBs in river sediments*)

**c) Agricultural & Forestry Effluents** - Water-borne pollutants from agricultural, silvicultural, and aquaculture systems that include nutrients, toxic chemicals and/or sediments including the effects of these pollutants on the site where they are applied (*nutrient loading from fertilizer run-off, herbicide run-off, manure from feedlots, nutrients from aquaculture, soil erosion*)

**d) Garbage & Solid Waste** - Rubbish and other solid materials including those that entangle wildlife (*municipal waste, litter from cars, flotsam & jetsam from recreational boats, waste that entangles wildlife, construction debris*)

**e) Air-Borne Pollutants** - Atmospheric pollutants from point and nonpoint sources (*acid rain, smog from vehicle emissions, excess nitrogen deposition, radioactive fallout, wind dispersion of pollutants or sediments, smoke from forest fires or wood stoves*)

**Excess Energy** - Inputs of heat, sound, or light that disturb wildlife or ecosystems (*noise from highways or airplanes, sonar from submarines that disturbs whales, heated water from power plants, lamps attracting insects, beach lights disorienting turtles, damaging atmospheric radiation resulting from ozone holes*)

**(10) Geological Events** - Threats from catastrophic geological events

**a) Volcanoes** - Volcanic events (*eruptions, emissions of volcanic gasses*)

**b) Earthquakes/Tsunamis** - Earthquakes and associated events (*earthquakes, tsunamis*)

**c) Avalanches/Landslides** - Avalanches or landslides (*avalanches, landslides, mudslides*)

**(11) Climate Change & Severe Weather** - Threats from long-term climatic changes which may be linked to global warming and other severe climatic/weather events that are outside of the natural range of variation, or potentially can wipe out a vulnerable species or habitat

**a) Habitat Shifting & Alteration** - Major changes in habitat composition and location (*sea-level rise, desertification, tundra thawing, coral bleaching*)

**b) Droughts** - Periods in which rainfall falls below the normal range of variation (*severe lack of rain, loss of surface water sources*)

**c) Temperature Extremes** - Periods in which temperatures exceed or go below the normal range of variation (*heat waves, cold spells, oceanic temperature changes, disappearance of glaciers/sea ice*)

**d) Storms & Flooding** - Extreme precipitation and/or wind events (*thunderstorms, tropical storms, hurricanes, cyclones, tornados, hailstorms, ice storms or blizzards, dust storms, erosion of beaches during storms*)

## 15.2 Taxonomy of Strategic Actions

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**(1) Land/Water Protection** - Actions to identify, establish or expand parks and other legally protected areas

**a) Site/Area Protection** - Establishing or expanding public or private parks, reserves, and other protected areas roughly equivalent to IUCN Categories I-VI (*national parks, town wildlife sanctuaries, private reserves, tribally owned hunting grounds*)

**b) Resource & Habitat Protection** - Establishing protection or easements of some specific aspect of the resource on public or private lands outside of IUCN Categories I-VI (*easements, development rights, water rights, instream flow rights, wild & scenic river designation*)

**(2) Land/Water Management** - Actions directed at conserving or restoring sites, habitats and the wider environment

**a) Site/Area Management** - Management of protected areas and other resource lands for conservation (*site design, demarcating borders, putting up fences, training park staff, control of poachers*)

**b) Invasive/Problematic Species Control** - Controlling and/or preventing invasive and/or other problematic plants, animals, and pathogens (*cutting vines off trees, preventing ballast water discharge*)

**c) Habitat & Natural Process Restoration** - Enhancing degraded or restoring missing habitats and ecosystem functions; dealing with pollution (*creating forest corridors, prairie re-creation, riparian tree plantings, coral reef restoration, proscribed burns, breaching levees, dam removal, fish ladders, liming acid lakes, cleaning up oil spills*)

**(3) Species Management** - Actions directed at managing or restoring species, focused on the species of concern itself

**a) Species Management** - Managing specific plant and animal populations of concern (*harvest management of wild mushrooms, culling buffalo to keep population size within park carrying capacity, controlling fishing effort*)

**b) Species Recovery** - Manipulating, enhancing or restoring specific plant and animal populations, vaccination programs (*manual pollination of trees, artificial nesting boxes/platforms, clutch manipulation, supplementary feeding, disease/pathogen/parasite management*)

**c) Species Re-Introduction** - Re-introducing species to places where they formally occurred or benign introductions (*re-introduction of wolves*)

**d) Ex-situ Conservation** - Protecting biodiversity out of its native habitats (*captive breeding of gorillas, artificial propagation of orchids, gene-banking*)

**(4) Education & Awareness** - Actions directed at people to improve understanding and skills, and influence behavior

**a) Formal Education** - Enhancing knowledge and skills of students in a formal degree program (*public schools, colleges & universities, continuing education*)

**b) Training** - Enhancing knowledge, skills and information exchange for practitioners, stakeholders, and other relevant individuals in structured settings outside of degree programs (*monitoring workshops or training courses in reserve design for park managers, learning networks or writing how-to manuals for project managers, stakeholder education on specific issues*)

**c) Awareness & Communications** - Raising environmental awareness and providing information through various media or through civil disobedience (*radio soap operas, environmental publishing, web blogs, puppet shows, door-to-door canvassing, tree sitting, protest marches*)

**(5) Law & Policy** - Actions to develop, change, influence, and help implement formal legislation, regulations, and voluntary standards

**a) Legislation** - Making, implementing, changing, influencing, or providing input into formal government sector legislation or policies at all levels: international, national, state/provincial, local, tribal (*Global: promoting conventions on biodiversity, wildlife trade laws like CITES National: work for or against government laws such as the US Endangered Species Act, influencing legislative appropriations State/Provincial: state ballot initiatives, providing data to state policy makers, developing pollution permitting systems, dam relicensing Local: developing zoning regulations, countryside laws, species protection laws, hunting bans Tribal: creating tribal laws*)

**b) Policies & Regulations** - Making, implementing, changing, influencing, or providing input into policies and regulations affecting the implementation of laws at all levels: international, national, state/provincial, local/community, tribal (*Input into agency plans regulating certain species or resources, working with local governments or communities to implement zoning regulations; promoting sustainable harvest of timber on state forest lands*)

**c) Private Sector Standards & Codes** - Setting, implementing, changing, influencing, or providing input into voluntary standards & professional codes that govern private sector practice (*Marine & Forest Stewardship Councils, Conservation Measures Partnership (CMP) Open Standards, corporate adoption of forestry best management practices, sustainable grazing by a rancher*)

**d) Compliance & Enforcement** - Monitoring and enforcing compliance with laws, policies & regulations, and standards & codes at all levels (*Water quality standard monitoring, initiating criminal and civil litigation*)

**(6) Livelihood, Economic & Other Incentives** - Actions to use economic and other incentives to influence behavior

**a) Linked Enterprises & Livelihood Alternatives** - Developing enterprises that directly depend on the maintenance of natural resources or provide substitute livelihoods as a means of changing behaviors and attitudes (*ecotourism, non-timber forest product harvesting, harvesting wild salmon to create value for wild population*)

**b) Substitution** - Promoting alternative products and services that substitute for environmentally damaging ones (*Viagra for rhino horn, farmed salmon as a replacement for pressure on wild populations, promoting recycling and use of recycled materials*)

**c) Market Forces** - Using market mechanisms to change behaviors and attitudes (*certification, positive incentives, boycotts, negative incentives, grass & forest banking, valuation of ecosystem services such as flood control*)

**d) Conservation Payments** - Using direct or indirect payments to change behaviors and attitudes (*quid-pro-quo performance payments, resource tenure incentives*)

**e) Non-Monetary Values** - Using intangible values to change behaviors and attitudes (*spiritual, cultural, links to human health*)

**(7) External Capacity Building** - Actions to build the infrastructure to do better conservation

**a) Institutional & Civil Society Development** - Creating or providing non-financial support & capacity building for non-profits, government agencies, communities, and for-profits (*creating new local land trusts, providing circuit riders to help develop organizational capacity*)

**b) Alliance & Partnership Development** - Forming and facilitating partnerships, alliances, and networks of organizations (*country networks, Conservation Measures Partnership (CMP)*)

**c) Conservation Finance** - Raising and providing funds for conservation work (*private foundations, debt-for-nature swaps*)