

**THE WILDERNESS CHARACTER MONITORING DATABASE:  
A GUIDE FOR DATA ENTRY USERS  
April 2017**

Real database: <https://wc.wilderness.net>  
Test database: <https://wc-test.wilderness.net>

This document presents a brief guide on how to use the wilderness character monitoring database for data entry users from all four agencies. The information in this document applies to all four wilderness managing agencies; however, since FS and BLM required measures are still in the process of being updated, agency standard measures are not addressed here. A general understanding of wilderness character monitoring and *Keeping it Wild 2* (Landres et al. 2015) is assumed for all database users—for questions on wilderness character monitoring, selecting measures, calculating trends, etc. refer to *KIW2*. For help with the database, or to request database access, users should contact their agency administrator(s).

FWS: Peter Dratch, Nancy Roeper, Marissa Edwards  
NPS: Erin Drake  
BLM: James Sippel, Emily Simpson  
FS: TBD (formerly Steve Boutcher)

It is important to note that this document is not a formal user guide, and is likely to change in the future as the database continues to be updated. The database was substantially updated in February 2016, and two additional rounds of updates are planned for later in 2016. An official user guide will eventually be written once these database updates have been completed. The database is still under development and there are still issues that may need to be fixed. Please submit any problems, feedback, or suggestions to your agency administrator so it can continue to be improved.

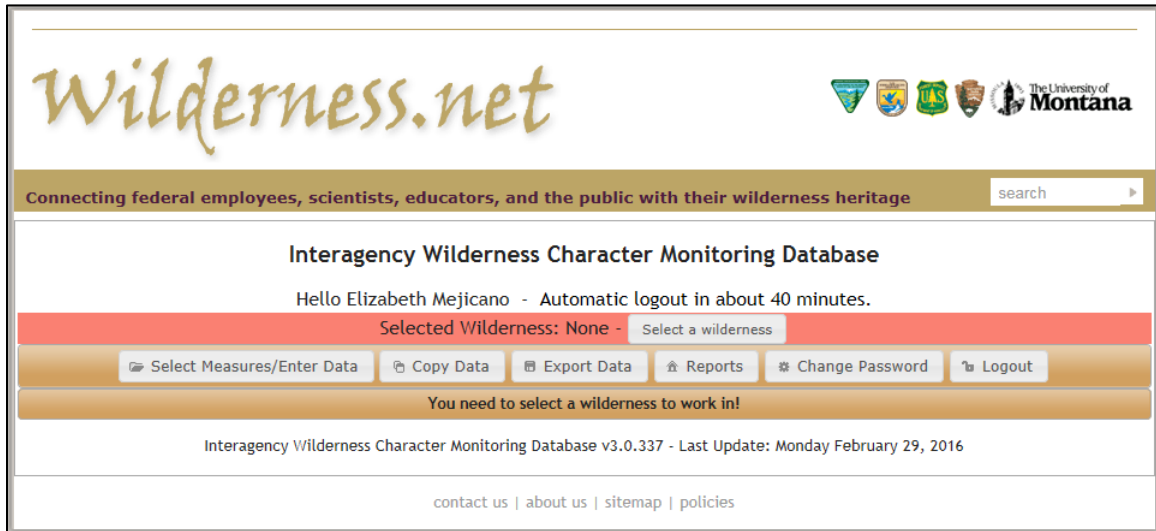
The websites for both the real database and the test database websites are given at the top of this page. The test database was originally created as a place for users to learn how to use the database without the threat of losing their data. The two databases are completely separated—any measures or data entered in the test database will not appear in the real database, and vice versa. In addition, the test database is currently being used for beta-testing updates before they are implemented in the real database; while users may still use the test database to learn and practice in, please note that there may be some substantial differences between the two databases as the updating process continues.

**Contents**

<a href="#">Navigating the database</a> .....	2
<a href="#">Selecting a wilderness</a> .....	3
<a href="#">Select measures tab</a> .....	4
<a href="#">General measure information</a> .....	7
<a href="#">Data information</a> .....	8
<a href="#">Significant change and trend calculation</a> .....	10
<a href="#">Trend report years</a> .....	12
<a href="#">Enter/edit measure values tab</a> .....	14
<a href="#">Adding data</a> .....	16
<a href="#">Trend report tab</a> .....	18
<a href="#">QA/QC checks</a> .....	19
<a href="#">Trend reports</a> .....	20
<a href="#">Appendix A: Basic troubleshooting</a> .....	22
<a href="#">Appendix B: Guidelines for setting trend report years</a> .....	23

## NAVIGATING THE DATABASE

This is the main screen for all wildernesses in the database.



The buttons and tabs on this screen are briefly summarized below:

Top button:

- Select a wilderness: this redirects users to the dropdown menu to select a wilderness. If a wilderness has already been selected, this button is renamed as “Change.”

Second row of buttons:

- Select Measures/Enter Data: This allows for measure entry, data entry, quality assurance checks, and the generation of trend reports (see “third row of tabs” section below).
- Copy Data: This allows measures from one wilderness to be copied to another wilderness without data. This is rarely used and will be deleted in future updates.
- Export Data: This allows data to be saved on a user’s computer. This button is currently nonfunctional.
- Reports: This allows users to see trend reports that have already been generated. This button is intended to be used to generate regional and national reports, but is currently nonfunctional.
- Change Password: This allows the user to change their login password.
- Logout: This logs the user out of the database.

Third row of tabs: (each of these tabs will be discussed in depth later in this document)

- Select Measures: This is where users enter and edit measures. See “select measures tab” section below.
- Enter/Edit Measure Values: This is where users enter and edit data for all measures for any given year. See “enter/edit measure values tab” section below.
- Trend Report: This is where users check measures for errors and generate trend reports for the selected wilderness. See “trend report tab” section below.

## SELECTING A WILDERNESS

Upon logging in to the database, users will first need to select a wilderness to work with. Click on the “Select a wilderness” button and then choose a wilderness from the dropdown menu. Users will only have access to the wildernesses selected for them by their agency administrator—if a user does not see the wilderness they would like to work with in the dropdown menu, they will need to contact their agency administrator to request access to that wilderness.

For interagency wildernesses, a single set of measures and data must be used. Users will need to select which agency’s protocols to follow for that wilderness. Agency administrators can change which agency’s protocols are used; however, doing so will delete all selected measures and entered data. *Therefore, before selecting an agency, users for interagency wildernesses should ensure that the two managing agencies have discussed which protocols to use and come to a mutually agreeable decision.*

Once a wilderness is selected, a wilderness character monitoring (WCM) baseline year will need to be selected. The WCM baseline year is the first year for which all selected measures have data. To close the pop up box without selecting a year, click the “X” in the upper right corner; to select a WCM baseline year after closing the pop up box, click on the red triangle with an exclamation point, to the right of the red highlighted text. If the wrong WCM baseline year is entered accidentally, users must contact their agency administrator to correct it.

## SELECT MEASURES TAB

Each wilderness must select at least one measure for each of the 13 required indicators. To add measures, click on the “choose/add new measure” button.

Selected Wilderness: Lostwood Wilderness Change - ? WCM Baseline Year: 2013

Select Measures/Enter Data Copy Data Export Data Reports Change Password Logout

DATA ENTRY: Lostwood Wilderness - FWS

Select Measures Enter/Edit Measure Values Trend Report

### Select Measures for Lostwood Wilderness

Measures for the Lostwood Wilderness are selected here. You can filter which measures are displayed by indicator. To choose from the existing "Library of measures" or add a new measure, click the "Choose/Add New Measure" button. [More information...](#)

Wilderness character monitoring requires at least one measure to be selected for each of the 13 required indicators. Indicators under the "Other features of value" quality are not required. Measures are added by clicking the "Choose/Add New Measure" button.

An indicator with a **red** background in the drop down below indicates that no measure has been selected for it.

Total number of required indicators: 13 Number selected: 0

Select Measures for Lostwood Wilderness

Show Measures for which Indicator? Selected Measures/Indicators Choose/Add New Measure

Quality	Indicator	Measure	Edit	Select	Active	Baseline Year	Trend Report Years
Showing 0 Measures							
There are no selected measures for Lostwood Wilderness. Click "Choose/Add new measures" button above to select measures.							

This will open a pop up screen that allows users to select the indicator for the measure they are adding.

### Select an Indicator

Quality	Indicator	Select
Natural	Air and Water	Select
Natural	Animals	Select
Natural	Ecological Processes	Select
Natural	Plants	Select
Other Features of Value	Deterioration or loss of integral cultural features	Select
Other Features of Value	Deterioration or loss of other integral site-specific features of value	Select
Solitude or Primitive and Unconfined Recreation	Facilities that decrease self-reliant recreation	Select
Solitude or Primitive and Unconfined Recreation	Management restrictions on visitor behavior	Select
Solitude or Primitive and Unconfined Recreation	Remoteness from sights and sounds of human activity inside wilderness	Select
Solitude or Primitive and Unconfined Recreation	Remoteness from sights and sounds of human activity outside the wilderness	Select
Undeveloped	Presence of inholdings	Select
Undeveloped	Presence of non-recreational structures, installations, and developments	Select
Undeveloped	Use of motor vehicles, motorized equipment, or mechanical transport	Select
Untrammelled	Actions authorized by the federal land manager that intentionally manipulate the biophysical environment	Select
Untrammelled	Actions not authorized by the federal land manager that intentionally manipulate the biophysical environment	Select

After an indicator is selected, a list of “library measures” will appear. Library measures are shared between multiple wildernesses within an agency, and as such cannot be edited for an individual wilderness. In future database updates, library measures will be eliminated. *It is therefore strongly recommended that users ignore the library measures and click on the “add new measure” at the bottom of the screen.*

Select Measures to Use ✕

Check the boxes of the measures you want to use. Use the "Save & Close" button to select the measures and return to the Selected Measures display screen.

**Quality:** Natural  
**Indicator:** Air and Water

Use keywords to filter the displayed measures

Displaying 20 measures

Select measures	Agency	0 measures checked	Select	Edit
<a href="#">Air quality</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Air quality - Total nitrogen wet deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Air quality - Total sulfur wet deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Air quality - Visibility</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Air quality: visibility</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Number of contaminants above EPA guidelines</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Ozone air pollution</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Ozone air pollution</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Ozone air pollution</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Ozone Air Pollution</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total Nitrogen deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total nitrogen wet deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total Nitrogen Wet Deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total Sulfur Deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total Sulfur Wet Deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total sulfur wet deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Total wet nitrogen deposition</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Visibility</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Visibility</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>
<a href="#">Visibility</a>	FWS	<input type="checkbox"/>	<input type="button" value="Copy"/>	<input type="button" value="Copy"/>

The following is the “add measure” screen. The question marks to the left of words on this screen denote where hovering the cursor will reveal a brief explanation.

DATA ENTRY: Lostwood Wilderness - FWS

\* Select Measures ▲
Enter/Edit Measure Values
Trend Report

### Add Measure

**Measure Definition**

**NOTE:** Once you add a measure into the "Library" you will not be able to edit it, unless you mark it specifically for use with Lostwood Wilderness. "Library" measures should be general in nature and also apply to other wildernesses. If you need a "Library" measure edited, contact the system administrator.

**Quality** Natural

**Indicator** Air and Water

**? For Agency** FWS

**Required?** Optional

**? For Specific Wilderness?** Yes  Used for Lostwood Wilderness only?

**Title of Measure**

**Description of Measure**

**Protocol Source (URL or other)**

**National Data Source?** No

**Reference Condition Text**

**Comments**

**Data Information**

**Unit of Measure**

**? Frequency (Years)** Select a frequency

**? Data Type** Select a data type

**Significant Change and Trend Calculation**

**? Significant Change Type** Select a change type

**? Significant Change Amount**

**? Switch to regression analysis after 5 data values have been added?**

**? An increasing change in data values correlates to this trend:** Select a trend

**+ Trend Report Years ?**

Each field on this screen is discussed below in the order it appears, divided into general measure information, data information, significant change and trend calculation, and trend report years. Most fields are required; optional fields are noted both in the text and by an open circle bullet point.

### General measure information:

● = required field

○ = optional field, or users can leave the default setting as is

- Change indicator (button): This allows the user to change the selected indicator. This field is only necessary when the wrong indicator was selected originally.
- For agency: The agency is set when the wilderness is selected. This dropdown menu is inaccessible for data entry users.
- Required?: This is only relevant for BLM and FS wildernesses. For FWS and NPS wildernesses, all measures are set as optional. This dropdown menu is inaccessible for data entry users.
- For specific wilderness?: This determines whether or not the measure will be a library measure, and therefore whether or not users will be able to edit it in the future for the selected wilderness. *As library measures and this field will be eliminated in future updates, it is strongly recommended that users mark this as "yes."*
- Title of measure: The measure name.
- Description of measure: The measure description and/or protocol. This field is optional.
- Protocol source (URL or other): If the data come from an online source or another source with a simple address, it can be entered here. This field is optional.
- National data source?: If the data come from a national data source, "yes" can be selected. Otherwise, it can left as the default "no."
- Reference condition text: If the user would like to describe the current or baseline condition of the measure, they can do so here. This field is optional.
- Comments: Any additional notes or comments can entered here. This field is optional.

## Data information:

● = required field

○ = optional field, or users can leave the default setting as is

- **Unit of measure:** The data's measurement unit. This could range from "visitors" to "mg/L" and more. For indices, simply entering "index value" is sufficient.
- **Frequency (years):** How frequently data should be entered into the database. This does not necessarily indicate the frequency of data collection but rather the frequency of data entry in the database for wilderness character monitoring purposes.
- **Data type:** The type of data used for this measure. Unlike all of the other fields, the data type will lock once a measure is saved such that users will be unable to edit it. *Therefore, it is important that users select the correct data type at the start.* A description of the data types and when to use each one is below:

- **Number – integer:** Select this data type if the measure's data are simple integer counts or measurements.  
For example, this data type would be appropriate for measures such as "number of invasive species present in the wilderness" or "number of trampling actions."
- **Number – decimal:** Select this data type if the measure's data are simple decimal measurements, counts, or calculations (e.g. averages, median values, etc.).  
For example, this data type would be appropriate for measures such as "total wet deposition of nitrogen" or "area of wilderness away from travel routes and developments."
- **Index (decimal) – calculated:** Select this data type if the measure value is derived from a calculated index.  
For example, this data type would be appropriate for measures such as an "index of development" that calculates the measure value based on the number, size, and material of installations in wilderness, or an "index of management restrictions" that calculates the measure value based on the intensity and extent of each restriction.
- **Categories:** Select this data type if the measure value is based on professional judgment or an estimate rather than on hard data, or if the measure value is text-based rather than numeric. The following fields will appear when "categories" is selected as the data type:

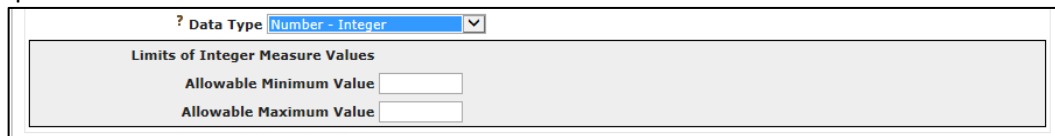
The screenshot shows a web form for configuring a data type. At the top, a dropdown menu is set to 'Categories'. Below this, a text box contains instructions: 'Categories - Enter categories in the order of least degraded (lower rank) to most degraded (higher rank). For any given year, the measure value is selected from a dropdown list of the categories entered below.' There are two input fields for 'Rank 1 Category' and 'Rank 2 Category', with a plus sign icon to the left of the second field. Below these is a section titled 'Significant Change and Trend Calculation' containing three fields: 'Significant Change Type' (dropdown set to 'Any'), 'Significant Change Amount' (text input), and 'An increasing change in data values correlates to this trend:' (dropdown set to 'downward'). At the bottom, there is a 'Trend Report Years' field with a plus sign icon, and 'Save' and 'Cancel' buttons.



For this data type, users must enter a minimum of two categories, ranked from least degraded to most degraded. Any change from one category to another is considered a significant change for the measure, and users are not permitted to change any of the significant change and trend calculation information.

For example, this data type would be appropriate for measures such as “condition of a significant cultural resource” (in which the condition could be described as “excellent,” “good,” “concerning,” or “poor”) or “estimate of annual visitation” (in which no visitation data are collected, but professional judgment could be used to distinguish between broad categories such as “less than 100 visitors,” “100 to 500 visitors” and “more than 500 visitors”).

- Limits of measure values: This grey box only appears for the data types of “number – integer,” “number – decimal,” or “index (decimal) – calculated.” If users would like to set minimum and/or maximum values for the measure, they may do so here. Data entry will be restricted to the range of values between (and including) the entered minimum and maximum values. These fields are optional.



The screenshot shows a form interface for setting data type limits. At the top, there is a dropdown menu labeled "? Data Type" with "Number - Integer" selected. Below this is a grey rectangular box titled "Limits of Integer Measure Values". Inside this box, there are two input fields: "Allowable Minimum Value" and "Allowable Maximum Value", each followed by a small white text box for user input.

## Significant change and trend calculation:

● = required field

○ = optional field, or users can leave the default setting as is

- **Significant change type:** The type of significant change used to determine the trend in the measure. For all significant change types except “regression,” trends in the measure are determined by comparing the measure’s baseline data value with the measure’s most recent data value. For “regression,” trends in the measure are determined through a statistical analysis of all available measure values. Measures may also switch to a regression significant change type once they have a minimum of 5 data values (see “Switch to regression analysis after 5 data values have been added?” on the following page). A description of the significant change types and when to use each is below:
  - **Any:** Select this type if any change from the baseline data value indicates a change in the trend in the measure.

For example, for a measure on “number of trammeling actions,” if an increase of a single trammeling action would indicate a downward trend in the measure, a decrease of a single trammeling action would indicate an upward trend in the measure, and no change would indicate a stable trend in the measure, then “any” would be an appropriate significant change type.
  - **Fixed number:** Select this type if a change of a specific fixed number from the baseline data value indicates a change in the trend in the measure.

For example, for a measure on “number of visitors,” if an increase of 100 or more visitors would indicate a downward trend in the measure, a decrease of 100 or more visitors would indicate an upward trend in the measure, and any variation in the measure value below the 100 visitor threshold would indicate a stable trend in the measure, then “fixed number” would be an appropriate significant change type.
  - **Percent:** Select this type if a change of a specific percent from the baseline data value indicates a change in the trend in the measure.

For example, for a measure on “acres of non-native plants,” if an increase of 25% (i.e. 5 acres) or more would indicate a downward trend in the measure, a decrease of 25% or more would indicate an upward trend in the measure, and any variation in the measure value below the 25% threshold would indicate a stable trend in the measure, then “percent” would be an appropriate significant change type.
  - **Regression:** Select this type if a finding of statistically significant change in the data (determined by simple linear regression) indicates a non-stable trend in the measure. When this significant change type is selected, a warning will pop up to alert users that measure trends cannot be calculated until there are a minimum of five data values for the measure.

For example, for a measure on “hours of administrative flights,” if statistically significant increasing flight hours would indicate a downward trend in the measure, statistically significant decreasing flight hours would indicate an upward trend in the measure, and a lack of statistical significance would indicate a stable trend in the measure, then “regression” would be an appropriate significant change type.
  - **Categorical:** Select this type if a change from one numerical category to another indicates a change in the trend in the measure. While this significant change type is similar to the

“categories” data type, in this case the categories are required to be numerical ranges rather than text based values. When this type is selected, the following fields will appear:

Significant Change and Trend Calculation

? Significant Change Type **Categorical**

Define Categorical Change Types - NOTE: Each category is a range of numbers defined by its minimum and maximum values. Categories may not overlap; minimum values are calculated by adding 0.1 to the maximum value of the previous category. The minimum value of the first category and the maximum value of the final category determine the limits of allowable measure values. If the minimum value of the first category is left blank, a value of negative infinity is assumed; if the maximum value of the last category is left blank, a value of positive infinity is assumed. Rank each category in the order of least degraded (lower numbers) to most degraded (higher numbers).

	Minimum Value	Maximum Value	Rank
Category 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Category 2	<input type="text"/>	<input type="text"/>	<input type="text"/> +

+ Trend Report Years ?

Save Cancel

For this type, users must describe a minimum of two categories. Users enter the upper bound for each category, and the database will automatically generate the lower bound for the subsequent category by adding 0.1. The minimum value for the first category and the maximum value for the final category are optional and determine the limits of the measure values; data entry will be restricted to the range of values between (and including) these minimum and maximum category values, if any are entered. Users are also required to rank each category from least degraded to most degraded.

For example, for a measure on “ozone,” where the categories are set as <60 ppb (good), 60–76 ppb (moderate), and >76 ppb (concern), if a change from the baseline category to an improved category would indicate an upward trend in the measure, a change from the baseline category to a degraded category would indicate a downward trend in the measure, and any variation within the baseline category would indicate a stable trend in the measure, then “categorical” would be an appropriate significant change type.

- Significant change amount: Significant change amounts can only be entered for significant change types of “fixed number,” “percent,” and “regression.” For “fixed number” and “percent,” the number entered for the significant change amount determines the threshold for significant change; for example, a significant change amount of 5 would mean that a change greater than or equal to 5, or 5%, is significant. For “regression,” the significant change amount determines the significance level for the regression analysis; users must select a significance level of 0.2 (80% confidence), 0.1 (90% confidence), or 0.05 (95% confidence) from a dropdown menu.
- Switch to regression analysis after 5 data values have been added?: This box can only be checked for significant change types of “any,” “fixed number,” and “percent.” Checking this box means that once five data values have been entered for the measure, the significant change type will switch to regression. If this box is checked, a new field will appear:

? Switch to regression analysis after 5 data values have been added?

Significant Change Amount after switch to regression Select a significance level

Users must then select the significance level for the regression analysis from a dropdown menu of 0.2 (80% confidence), 0.1 (90% confidence), or 0.05 (95% confidence).

- An increasing change in data values correlates to this trend: This field appears for all significant change types except “categorical.” This determines whether increases in the data correlate with an upward or downward trend in the measure. For example, an increase in motorized flights would correlate with a downward trend in the measure, while an increase in historical sites listed on the National Register of Historic Places would correlate with an upward trend in the measure.

## Trend report years:

● = required field

○ = optional field, or users can leave the default setting as is

- **Trend report years:** This expandable section allows users to set the years the measure will be used for calculating and reporting the trend in wilderness character. It is used to document the elimination, replacement, or addition of new measures over time. The default setting assumes that the measure will not change over time (i.e. the measure will always be used in trend calculations and reporting). When the plus sign to the left of the title is clicked to expand this section, a pop up warning will appear to alert users that the settings should only be adjusted if a measure has been eliminated, replaced, or added after the WCM baseline year. Once expanded, the following fields appear:

Trend Report Years ?

Measures will not be used for calculating/reporting the trend in wilderness character before the entered "start" year and after the entered "stop" year.

Year to start using the measure for calculating/reporting overall trend No Limit ▼

Year to stop using the measure for calculating/reporting overall trend No Limit ▼

Save Cancel

If the measure has been eliminated, enter the last year the measure should be used in trend calculations in the "stop" field (bottom field). If the measure has been added after the WCM baseline year, enter the first year the measure should be included in trend calculations in the "start" field (top field). See [Appendix B: Guidelines on setting trend report years](#) for more information.

Once all required field have been completed, click the “save” button. Users will be returned to the home screen for the select measures tab, and the new measure will appear in the table. Measures can be sorted using the “show measures for which indicator?” dropdown menu. This menu will also highlight in red all indicators that do not yet have at least one measure.

**DATA ENTRY: Lostwood Wilderness - FWS**

Select Measures **▲** Enter/Edit Measure Values Trend Report

**Select Measures for Lostwood Wilderness**

Measures for the Lostwood Wilderness are selected here. You can filter which measures are displayed by indicator. To choose from the existing "Library of measures" or add a new measure, click the "Choose/Add New Measure" button. [More information...](#)

Wilderness character monitoring requires at least one measure to be selected for each of the 13 required indicators. Indicators under the "Other features of value" quality are not required. Measures are added by clicking the "Choose/Add New Measure" button.

An indicator with a **red** background in the drop down below indicates that no measure has been selected for it.

Total number of required indicators: 13    Number selected: 1 **▲**

**Select Measures for Lostwood Wilderness**

Show Measures for which Indicator? Natural/Air and Water

Showing 1 Measures

Quality	Indicator	Measure	Edit	Select	Active	Baseline Year	Trend Report Years
Natural	Air and Water	<a href="#">Example: number of trammeling actions</a>	<input type="button" value="Edit"/> <input type="button" value="Copy"/>	<input checked="" type="checkbox"/>	Active	2013	All Years

Clicking on the measure title will produce a summary of the information entered for that measure. Clicking the “edit” button will allow users to edit all measure fields except “data type.” Clicking the “copy” button will copy all measure information (but not the data) to a new measure that the user can then edit. The “select” and “active” columns determine whether a measure is included in wilderness character monitoring trend calculations. Unchecking the box under “select” will delete the measure if no data have been entered, or will make the measure inactive if data have been entered. The baseline year for a measure is automatically determined by the database as the first year of data collection; measures that do not yet have data entered are assigned the overall WCM baseline year as their baseline year. The trend report years are the years the measure will be used for calculating and reporting the trend in wilderness character and are used to document the elimination, replacement, or addition of new measures over time. These years are pulled from the information entered when adding or editing a measure, with “all years” as the default setting.

## ENTER/EDIT MEASURE VALUES TAB

After a measure has been added, it will appear under the enter/edit measure values tab.

DATA ENTRY: Lostwood Wilderness - FWS

Select Measures Enter/Edit Measure Values Trend Report

Select Measure for Lostwood Wilderness for Measure Value Data Entry

Select Measure for Lostwood Wilderness for Measure Value Data Entry

Show Measures for which Indicator? ALL

Showing 1 Measures

Quality	Indicator	Measure	Measure Baseline Year	Year of Measure Value	Trend Report Years
Natural	Air and Water	Example: number of trammeling actions	2013	First: None Last: None Next: 2013	All Years

Add Data

Data for a measure are referred to in the database as “measure values.” In this document, they are referred to as “measure values” and “data values” interchangeably. To add data for a measure, click on the “add data” button. The first time data are added for a measure, clicking this button will direct users to the “add measure value” screen. After a measure has data entered, clicking this button will direct users to the measure’s “data entry home screen”. That screen will be discussed after the “add measure value screen,” below.

Each field on the “add measure value screen” is discussed below in the order it appears. Optional fields are noted below. The question marks to the left of words on this screen denote where hovering the cursor will reveal a brief explanation.

DATA ENTRY: Lostwood Wilderness - FWS

✖ Select Measures ⚠
📄 Enter/Edit Measure Values
📊 Trend Report

**Select Measure for Lostwood Wilderness for Measure Value Data Entry** 🔍

Measure Value for Lostwood Wilderness

**Add Measure Value** Cancel

**Measure** Example: number of trammeling actions

? **Year of Data Collection**

? **Data Collection Comments**

**Significant Change Type** Any

**Significant Change Amount** 0

**Reference Condition**

**Allowable Values** Minimum: 0 Maximum:

? **Value**

**Value Comment**

**Unit of Measure** actions

**Condition** Select a condition

**Condition Comment**

**Confidence** Select a confidence

**Confidence Comment**

+ - **Link for GIS Data**

+ - **Link for Photos**

+ - **Link for Addtl. Docs**

Save Cancel

Other Measure Value Records for this Measure in Lostwood Wilderness

Year	Value	Condition	Trend
Showing 0 Measure Values			
No other values were found for this measure.			

### **Adding data:**

● = *required field*

○ = *optional field, or users can leave the default setting as is*

- Year of data collection: The year the measure value currently being entered was collected or compiled. If multiple years of data collection were compiled or calculated into a single data value, enter the final year of data collection in this field.
- Data collection comments: Users may enter notes about the year(s) of data collection. For example, if multiple years of data collection were compiled or calculated into a single measure value, the full time period of data collection can be noted here. Similarly, users could also note whether data were collected over the course of the fiscal year or calendar year, or provide any other relevant information. This field is optional.
- Value: The measure/data value. This value is rounded to the tenths place to avoid false precision in the database.
- Value comments: Users may enter notes about the data value. This field is optional.
- Condition: The current condition of the measure (good, caution, or poor). Users select the condition from a dropdown menu, or they may select N/A or unknown. This field will be updated in the future to reflect standard NPS condition terminology (good condition, moderate concern, or significant concern), and will be made optional. Currently, however, it is required.
- Condition comments: Users may enter notes about the condition. This field is optional.
- Confidence: The level of confidence in data quality and quantity. In future updates, this field will be called "data adequacy." Users select the data adequacy level (high, medium, or low) from a dropdown menu.
- Confidence comments: Users may enter notes about the data adequacy. This field is optional.
- Link for GIS data: Users may enter links for GIS data. This field is optional.
- Link for photos: Users may enter links for photos. This field is optional.
- Link for additional documents: Users may enter links for any other document, website, share drive, etc. This field is optional.

If previous data values have been entered, they will appear in the table at the bottom of the screen. These data cannot be edited but rather are available as a reference.



Once one or more data values have been entered for a measure, clicking on the “add data” button on the main data entry screen will direct users to the measure’s “data entry home screen.” Clicking the “cancel” button will return users to the main screen of the enter/edit measure values tab.

DATA ENTRY: Lostwood Wilderness - FWS

Select Measures Enter/Edit Measure Values Trend Report

Select Measure for Lostwood Wilderness for Measure Value Data Entry

Cancel

**Quality** Natural  
**Indicator** Air and Water  
**Measure** Example: number of trammeling actions

All measure value records that are available for the selected measure and wilderness in the database will be displayed here. Click the edit/view button next to a record to see all of the details for a measure value. To add a new measure value, click the Add Another Year button. You should have already finished choosing and weighting measures for the selected wilderness.

Showing 2 Measure Values

Year	Frequency	Value	Units	Condition	Trend	Add Another Year
2014	1	1	actions	N/A	Upward	Edit/View
2013	1	3	actions	N/A	Baseline	Edit/View

The table at the bottom of the measure’s “data entry home screen” provides an overview of all data values entered for a measure. Trend in the measure is noted in the second to last column on the right. The trend for each measure value is calculated automatically by the database based on the original information entered for the measure. The measure baseline year will have a “baseline” trend in the measure; measures using “regression” as a significant change type (which cannot be calculated until there are at least five data values) will have four years of “baseline” trend in the measure. New measure values can be entered by clicking the “add another year” button. Each measure value may be edited by clicking on the “edit/view” button to the right. The data history for each measure value can be examined by clicking the “edit/view” button, scrolling to the very bottom of the data entry screen, and clicking “measure history.”

Other Measure Value Records for this Measure in Lostwood Wilderness

Showing 1 Measure Values

Year	Value	Condition	Trend
2013	3	N/A	Baseline

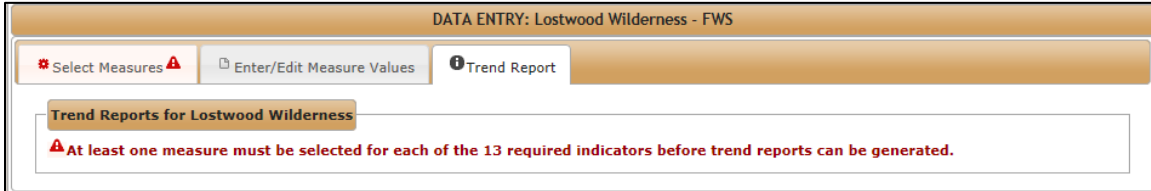
[Hide History](#)

**Measure Value History - 50 most recent changes.**

<b>Created By</b> Elizabeth Mejicano on Feb 28 2016 5:26PM		
<b>Last Edited By</b>		
<b>Date</b>	<b>By</b>	<b>Detail</b>
February, 28 2016 17:26:04	Elizabeth Mejicano	The measure value trend was calculated as Upward. The difference between the current measure value and the baseline measure value was less than 0. The difference is: -2 and the significant change type = Any.
February, 28 2016 17:26:04	Elizabeth Mejicano	*** (Year of Data Collection ORIGINAL VALUE: NEW VALUE: 2014 END)*** ***(Value ORIGINAL VALUE: NEW VALUE: 1 END)*** ***(Condition ORIGINAL VALUE: (Select a condition) NEW VALUE: 4 (N/A) END)*** ***(Confidence ORIGINAL VALUE: (Select a confidence) NEW VALUE: 1 (High) END)***

## TREND REPORT TAB

This tab encompasses both trend reports and QA/QC checks. At least one measure must be selected for all required indicators (not including indicators under the Other Features of Value Quality) before the database will allow the QA/QC checks to proceed. If some indicators lack measures, the following screen will appear under the trend report tab:



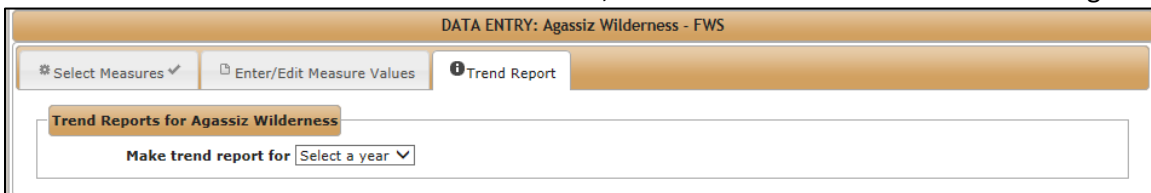
DATA ENTRY: Lostwood Wilderness - FWS

\* Select Measures ⚠ Enter/Edit Measure Values Trend Report

Trend Reports for Lostwood Wilderness

⚠ At least one measure must be selected for each of the 13 required indicators before trend reports can be generated.

Once all indicators have at least one selected measure, users will be able to access the following screen:



DATA ENTRY: Agassiz Wilderness - FWS

\* Select Measures ✓ Enter/Edit Measure Values Trend Report

Trend Reports for Agassiz Wilderness

Make trend report for Select a year ▼

**QA/QC checks:**

Trend reports may be generated from the wilderness character monitoring baseline year onward. Upon selecting a year to generate a trend report, the QA/QC check screen will appear

DATA ENTRY: Agassiz Wilderness - FWS

\* Select Measures ✓    Enter/Edit Measure Values    Trend Report

**Trend Reports for Agassiz Wilderness**

Make trend report for **2011** ▼

**QA/QC Check Results**

Trend reports can only be generated if there are at least 2 measure values for each measure. Measures with a significant change type of "regression" require 5 measure values before trend reports can be generated.

Number of required indicators with measures active for the requested year: 13

Quality	Indicator	Measure	Number of Data Values	Minimum Number of Data Values	Measure Years	Trend Errors
Natural	Air and Water	Ozone Air Pollution	4	5 ?	Last: 2012 Next: 2014	0
Natural	Air and Water	Total Nitrogen Wet Deposition	2	2	Last: 2009 Next: 2014	0
Natural	Air and Water	Total Sulfur Wet Deposition	2	2	Last: 2009 Next: 2014	0
Natural	Air and Water	Visibility	2	2	Last: 2009 Next: 2014	0
Natural	Animals	Index of presence and abundance of coniferous bog bird species	2	2	Last: 2010 Next: 2013	0
Natural	Animals	Index of presence and abundance of open bog bird species	4	2	Last: 2008 Next: 2013	0
Natural	Animals	Number of active bald eagle nests inside wilderness	19	2	Last: 2011 Next: 2012	0
Natural	Ecological Processes	Mean summer temperature	2	2	Last: 2010 Next: 2015	0
Natural	Ecological Processes	Mean winter temperature	2	2	Last: 2010 Next: 2015	0
Natural	Ecological Processes	Number of deviations from water levels recommended for Thief Bay Pool and Webster Pool	3	2	Last: 2011 Next: 2012	0
Natural	Ecological Processes	Total summer evapotranspiration	2	2	Last: 2010 Next: 2015	0
Natural	Ecological Processes	Total summer precipitation	2	2	Last: 2010 Next: 2015	0
Natural	Plants	Percent of wilderness dominated by indigenous and/or non-indigenous invasive plant species	1	2	Last: 2014 Next: 2016	0
Other Features of Value	Deterioration or loss of integral cultural features	Number of disturbances to statutorily protected cultural resources	1	2	Last: 2014 Next: 2016	0

For measures that do not have data values for the selected year, the database will pull the most recent data value to use instead. Measures not used for a selected year (i.e. measures that have been eliminated, replaced, or added since the WCM baseline year and had their "trend report years" edited accordingly) will be listed at the bottom of the table.

**Measures not used for calculating/reporting the overall trend for the selected year**

Quality	Indicator	Measure	Trend Report Years
There are no unused measures to display here.			

Failure to pass the QA/QC checks is indicated in red. The QA/QC checks search for three things for the selected year:

1. That there is at least one measure for each of the 13 required indicators.
2. That all measures can generate a trend (i.e. all measures must have at least two data values, and measures with a significant change type of "regression" must have at least five data values).
3. That no measure is reporting a trend error.

## Trend reports:

Trend reports cannot be generated until the QA/QC checks have been passed. Once the QA/QC checks are completed, a “Calculate trends” button will appear above the QA/QC table. Clicking this button will generate a trend report for the selected year. (Trend reports automatically open when newly calculated. To return to the main trend report tab screen, click the “close” button at the top of the report.) Once a trend report has been generated, the trend report heading will look like this:

The screenshot shows the 'Trend Reports for Agassiz Wilderness' interface. At the top, there are navigation buttons: 'Select Measures', 'Enter/Edit Measure Values', and 'Trend Report'. Below this, a dropdown menu is set to '2015' and a 'Calculate Trends' button is visible. A table titled 'Showing 1 Reports' displays the following data:

Year	Overall Trend	Report Date	By	Trends in the measures last calculated	View/Edit
2015	Upward ↑	Feb 28 2016 5:44PM	Elizabeth Mejicano	Feb 28 2016 5:40PM	View/Edit Comments View (w/ Values)

Below the table is a 'QA/QC Check Results' section with a message: 'Trend reports can only be generated if there are at least 2 measure values for each measure. Measures with a significant change type of "regression" require 5 measure values before trend reports can be generated. Number of required indicators with measures active for the requested year: 13'. A table below this message shows the following data:

Quality	Indicator	Measure	Number of Data Values	Minimum Number of Data Values	Measure Years	Trend Errors
Natural	Air and Water	Ozone Air Pollution	5	5 ?	Last: 2012 Next: 2014	0
Natural	Air and Water	Total Nitrogen Wet Deposition	2	2	Last: 2009 Next: 2014	0

The “trends in the measures last calculated” column will turn red if the trend for any of the measure values used for the selected year was changed or updated after the trend report was generated (i.e. if the trend report is out of date and needs to be recalculated). The trend report can be regenerated by clicking the “calculate trends” button again. Only one trend report will be saved for each year, so recalculating the trends will eliminate the previously generated report.

The screenshot shows the 'Trend Reports for Agassiz Wilderness' interface. The 'Trends in the measures last calculated' column in the table is now red, indicating an update. The data in the table is as follows:

Year	Overall Trend	Report Date	By	Trends in the measures last calculated	View/Edit
2015	Upward ↑	Feb 26 2016 10:49AM	Elizabeth Mejicano	Feb 28 2016 5:40PM ?	View/Edit Comments View (w/ Values)

There are two types of trend reports produced by the database: “view/edit comments” and “view (w/values).” These reports are quite similar, and in future updates will be merged into a single version. Both reports give the trend in each of the measures, indicators, monitoring questions, qualities, and in overall wilderness character, and can be exported as a Microsoft Word document, a Microsoft Excel spreadsheet, or a PDF. For each measure, both reports also include any comments made by users, the year of the most recent data value, and a symbol to describe how the measure’s trend was determined (with the symbology explained at the bottom of each report).

**Measure Trend Calculation Method Key**

Σ = Compared with baseline data

Π = Linear Regression

The “view/edit comments” report offers a location to add additional comments by clicking on the “comment” button.

DATA ENTRY: Agassiz Wilderness - FWS

Select Measures ✓ Enter/Edit Measure Values Trend Report

Trend Reports for Agassiz Wilderness

### Summary Trends in the Agassiz Wilderness (FWS) 2015

2/28/2016 5:44 PM

Close Excel PDF Word

Category	Trend
<b>Overall Wilderness Character</b> Comments: <input type="button" value="Comment"/>	↑ <b>Upward</b>
<b>Quality: Natural</b> Comments: <input type="button" value="Comment"/>	↕ <b>Offsetting stable</b>
<b>Question: What are the trends in the natural environment from human-caused change?</b> Comments: <input type="button" value="Comment"/>	↔ <b>Offsetting stable</b>
<b>Indicator: Air and Water</b> Comments: <input type="button" value="Comment"/>	↓ <b>Downward</b>
▯ <b>Measure: Ozone Air Pollution</b> Comments: <input type="button" value="Comment"/>	(2012) ↓ <b>Downward</b>

The “view (w/values)” report includes the most recent data value. The fields of this report can be expanded and minimized by clicking on the title of the quality, monitoring question, or indicator. Unlike the previous report version, users cannot make additional comments here.

DATA ENTRY: Agassiz Wilderness - FWS

Select Measures ✓ Enter/Edit Measure Values Trend Report

Trend Reports for Agassiz Wilderness

### Summary Trends in the Agassiz Wilderness (FWS) 2015

2/28/2016 5:44 PM

Close Excel PDF Word

Category	Trend
<b>Natural</b> ↕ <b>Offsetting stable</b>	↕ <b>Offsetting stable</b>
<b>What are the trends in the natural environment from human-caused change?</b> ↕ <b>Offsetting stable</b>	↕ <b>Offsetting stable</b>
<b>Air and Water</b> ↓ <b>Downward</b>	↓ <b>Downward</b>
▯ <b>Ozone Air Pollution: 61.2717</b> - (2012) ↓ <b>Downward</b>	(2012) ↓ <b>Downward</b>
⊗ <b>Total Nitrogen Wet Deposition: 4.06789</b> - (2009) ↔ <b>Stable</b>	↔ <b>Stable</b>
Trend is an assessment of change in the measure value from the previous 5-year time interval	
⊗ <b>Total Sulfur Wet Deposition: 1.55697</b> - (2009) ↔ <b>Stable</b>	↔ <b>Stable</b>
Trend is an assessment of change in the measure value from the previous 5-year time interval	
⊗ <b>Visibility: 5.7726</b> - (2009) ↔ <b>Stable</b>	↔ <b>Stable</b>
Trend is an assessment of change in the measure value from the previous 5-year time interval	
<b>Animals</b> ↑ <b>Upward</b>	↑ <b>Upward</b>
<b>Ecological Processes</b> ↓ <b>Downward</b>	↓ <b>Downward</b>
<b>Plants</b> ↑ <b>Upward</b>	↑ <b>Upward</b>
<b>Other Features of Value</b> ↑ <b>Upward</b>	↑ <b>Upward</b>
<b>Solitude or Primitive and Unconfined Recreation</b> ▯ <b>Downward</b>	▯ <b>Downward</b>

## APPENDIX A: BASIC TROUBLESHOOTING

Certain common problems with the database have simple solutions. If the troubleshooting techniques described below do not resolve an issue, users should contact their agency administrator(s).

Problem	Possible Solution
The database website does not seem to be loading correctly, or there is a “page not found” error message.	Make sure the website address is correct ( <a href="https://wc.wilderness.net">https://wc.wilderness.net</a> ). (These types of errors will occur when users use <a href="http://wc.wilderness.net">http://wc.wilderness.net</a> or <a href="https://www.wc.wilderness.net">https://www.wc.wilderness.net</a> .)
This is the first time using the database since it was updated and errors are occurring.	Log out of the database, clear browsing history (especially temporary files), then log back in. (To check for this problem in the future, note that the date of the last database update is listed at the bottom of the log in screen.)
Newly added measures or data do not appear, the QA/QC checks or trend reports do not seem to register recent changes, or other miscellaneous errors are occurring.	Several possible troubleshooting techniques may solve this problem. The first technique below will solve most of the problems users have in the database and should be attempted first. If this technique does not solve the problems, attempt the remaining techniques. <ol style="list-style-type: none"> <li>1. Click the “Select Measures/Enter Data” button (on the far left of the middle row of buttons on the main database screen) to refresh the database.</li> <li>2. Refresh the page.</li> <li>3. Log out of the database, then log back in. It may also help to close the window and open a new tab before logging back in.</li> </ol>
A change was made to a measure that already had data entered and now the trends for the measure values are incorrect.	Navigate to the measure baseline data value and click edit. Re-save the data value (no need to make any changes) to reset all of the trend calculations.

## APPENDIX B: GUIDELINES FOR SETTING TREND REPORT YEARS

“Trend report years” are used to document the elimination, replacement, or addition of new measures over time. They can be set from the “add measure” screen in an expandable section that allows users to set the years the measure will be used for calculating and reporting the trend in wilderness character:



The default setting assumes that measures will not change over time (i.e. a measure will always be used in trend calculations and reporting). If a measure has been eliminated, users would enter the last year the measure should be used in trend calculations as the “stop” year (bottom field). If a measure has been added after the WCM baseline year, users would enter the first year the measure should be included in trend calculations as the “start” year (top field). (Note that the “start” and “stop” years are inclusive—if 2016 is selected as the “stop” year for a measure, that measure will be included in trend reporting through 2016, but not in 2017 or subsequent years; if 2016 is selected as the “start” year for a measure, it will be included in trend reporting from 2016 onwards, but not in 2015 or previous years.)

This appendix describes several possible scenarios for setting “trend report years” and how each of those scenarios would affect trend reporting. As a general rule, it’s recommended that users set the “start” year as the first year to include a measure in QA/QC checks and trend calculations, and the “stop” year as the last year to include a measure in QA/QC checks and trend calculations. However, if users do not need to be able to calculate trends every single year, there are other possible “start” and “stop” years that may also be appropriate.

To set appropriate “start” and “stop” years, it is essential to understand how “trend report years” affect the QA/QC checks—if a wilderness fails the QA/QC checks for a given year, users will not be able to generate a trend report for that year and therefore will not be able to assess the trend in wilderness character. There are two ways wildernesses can fail the QA/QC checks:

- **QA/QC fail #1:** A required indicator does not have any measures selected (all indicators are required except those under the Other Features of Value Quality). For example, if no measures have been added under the Plants indicator of the Natural Quality, the wilderness would fail the QA/QC checks.
- **QA/QC fail #2:** A measure lacks sufficient data to derive a trend. All measures must have at least 2 years of data (2 measure values) to calculate trends; if regression is set as the significant change type, measures must have at least 5 years of data (5 measure values) to calculate trends. For example, all measures fail the QA/QC checks in the measure baseline year (the first year data are available for a measure) since they have only 1 measure value and cannot assess trends over time.

All of the scenarios described below include hypothetical example tables that use the same structure. Years from 2011-2016 are listed in the columns, with the WCM baseline marked as 2012. The first two rows contain data for two measures: an “old measure” (i.e. the measure being eliminated) and a “new measure” (i.e. the measure being added); neither the “old measure” nor the “new measure” have data for all 6 years shown. The “trend report years” are indicated with red shading for the “old measure” (the last year with red shading would be the “stop” year) and with green shading for “new measure” (the first year with green shading would be the “start” year). The final row describes how the “trend report years” depicted would affect the QA/QC checks and trend reports; for simplicity, the examples assume that neither measure uses regression analysis to derive trends, and that there are sufficient data for all other measures and indicators to be able to otherwise calculate the trend in wilderness character.

Scenario 1:

If there's a gap between the "stop" year of the old measure and the "start" year of the new measure, you will not be able to calculate the overall trend in wilderness character in the gap year(s) unless there are other measures under the same indicator *or* the indicator is under the Other Features Quality.

Example 1	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data		
New measure to be added	Data					Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	Yes Old measure: 2011 data point compared to 2013 data point	Yes Old measure: 2011 data point compared to 2014 data point	NO, no measures are selected (QA/QC fail #1), (unless the indicator has other measures or is under the Other Features Quality)	Yes New measure: 2011 data point compared to 2016 data point

Scenario 2:

If the "start" year for the new measure is set it to a year *before* trends can be calculated in the new measure (i.e. before the measure has at least 2 measure values, or 5 measure values if regression is used), the QA/QC checks will fail. (Also see examples 4a, 4b, and 4d.)

Example 2	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data		
New measure to be added	Data					Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	Yes Old measure: 2011 data point compared to 2013 data point	Yes Old measure: 2011 data point compared to 2014 data point	NO, the new measure only has 1 data point (QA/QC fail #2)	Yes New measure: 2011 data point compared to 2016 data point



Scenario 3:

When setting the “stop” year for the old measure, users can set it to be *after* the last data value (trends in the measure will be calculated using the most recent data available). Obviously, users should do this within reason—a “stop” year 20 years after the last viable data point for an old measure is likely a bad idea. (Also see examples 4a and 4c.)

Example 3	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data		
New measure to be added	Data					Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	Yes Old measure: 2011 data point compared to 2013 data point	Yes Old measure: 2011 data point compared to 2014 data point	Yes Old measure: 2011 data point compared to 2014 data point	Yes New measure: 2011 data point compared to 2016 data point

Scenario 4:

If there is an overlap between the “stop” year of the old measure and the “start” year of the new measure, there are two possible outcomes for the overlapping years:

- Trends cannot be calculated: If the “start” year for the new measure is set it to a year *before* trends can be calculated in the new measure, the QA/QC checks will fail and users will not be able to generate a trend report (as in scenario 2, above). See examples 4a (2015), 4b (2011-2014), and 4d (2013).
- Both measures are used to calculate trends: If the “trend report years” are set such that trends can be calculated in both measures, users will be able to generate a trend report but the trend in wilderness character will be calculated using both measures. See examples 4c (2016), 4d (2014-2015), and 4e (2014-2015).

(Note that examples 4d and 4e use different hypothetical data than the previous examples.)

Example 4a	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data		
New measure to be added	Data					Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	Yes Old measure: 2011 data point compared to 2013 data point	Yes Old measure: 2011 data point compared to 2014 data point	NO, the new measure only has 1 data point (QA/QC fail #2)	Yes New measure: 2011 data point compared to 2016 data point

Example 4b	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data		
New measure to be added	Data					Data
Can the trend in wilderness character be calculated?	NO, both measures only have 1 data point (QA/QC fail #2)	NO, the new measure only has 1 data point (QA/QC fail #2)	NO, the new measure only has 1 data point (QA/QC fail #2)	NO, the new measure only has 1 data point (QA/QC fail #2)	NO, the new measure only has 1 data point (QA/QC fail #2)	Yes New measure: 2011 data point compared to 2016 data point

Example 4c	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data		
New measure to be added	Data					Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	Yes Old measure: 2011 data point compared to 2013 data point	Yes Old measure: 2011 data point compared to 2014 data point	Yes Old measure: 2011 data point compared to 2014 data point	Yes—using <i>both</i> measures Old measure: 2011 data point compared to 2014 data point New measure: 2011 data point compared to 2016 data point

Example 4d	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data	Data	
New measure to be added			Data	Data	Data	Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	NO, the new measure only has 1 data point (QA/QC fail #2)	Yes—using <i>both</i> measures Old measure: 2011 data point compared to 2014 data point New measure: 2013 data point compared to 2014 data point	Yes—using <i>both</i> measures Old measure: 2011 data point compared to 2015 data point New measure: 2013 data point compared to 2015 data point	Yes New measure: 2013 data point compared to 2016 data point

Example 4e	2011	2012 (WCM baseline)	2013	2014	2015	2016
Old measure to be eliminated	Data	Data	Data	Data	Data	
New measure to be added			Data	Data	Data	Data
Can the trend in wilderness character be calculated?	NO, the old measure only has 1 data point (QA/QC fail #2)	Yes Old measure: 2011 data point compared to 2012 data point	Yes Old measure: 2011 data point compared to 2013 data point	Yes—using <i>both</i> measures Old measure: 2011 data point compared to 2014 data point New measure: 2013 data point compared to 2014 data point	Yes—using <i>both</i> measures Old measure: 2011 data point compared to 2015 data point New measure: 2013 data point compared to 2015 data point	Yes New measure: 2013 data point compared to 2016 data point