Integrated Monitoring in Bird Conservation Regions (IMBCR):

Point Transect Full Proofing Protocol

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Cover Photos:
Upland Sandpiper by Jeff Birek. Used with permission.

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I. Introduction

In order to provide data quality assurance, IMBCR Partners proof the data collected and entered into the database after each field season. To efficiently catch as many errors as possible the data undergoes both a full proof and a proof using data queries. The full proof is designed to catch errors made during the data entry process (i.e. typos) that cannot be detected using the data queries. The proofing queries will identify errors made in data collection. This document details instructions for conducting the full proof. If at any time you come across incomplete or incorrect data while following this protocol and there are not clear instructions in this document on how to proceed, contact your proofing supervisor.

II. Full Proof

We conduct a full proof of all IMBCR data collected each year to catch and fix as many data entry errors as possible. The main goal of a full proof is to ensure that the data in the database mirrors that on the datasheet. It is a long and tedious process requiring considerable concentration. Proofers are therefore encouraged to work through the full proof process by dedicating shorter intervals of time each day to the proofing process so they may maintain a sufficient level of focus (and sanity). Following the full proof, crew leaders will run some proofing queries to catch errors unrelated to typos such as ground cover percentages not adding up to 100%.

To conduct a full proof, you will need to compare the data on the datasheet with the data entered into the database for every survey assigned to you by your proofing supervisor. If the data does not match up, then you will need to correct the data in the database to match the datasheet. In some cases, you may find erroneous or missing data on the actual datasheet.
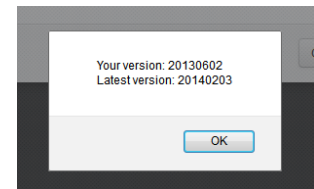
1. Downloading the Data Entry App

A. App Installation
When your crew leader sends you the zipped data entry application folder, right-click on the zipped folder and select "Extract Files" or "Extract All". Set the destination to your Desktop and hit OK. You should now have a folder called "Data Entry" saved on your desktop. Within this folder you'll find the two .html applications that are described in the previous section. **Note: Make sure your Firefox browser is not set to automatically clear browsing history. The data you enter will actually be stored within the browsing history in Firefox, so if you clear your browsing history at any point you will lose any data you've entered but not submitted to the database.**

B. Updates
The data entry application can go through periodic changes during the field season to improve compatibility for all avian monitoring programs and to increase functionality. The data entry system has been designed to notify users if a new version is available when the program is opened. If, while you are online, you receive a notification (pictured right) that there is a new version of the data entry site available, please follow these steps to update the app:

Your version: 20130602
Latest version: 20140203

OK

1. Hit OK.
2. Another window will pop up to reconfirm the update. Hit OK again.

3. A pop-up blocker notification may appear on the top of the screen. Click on the pop-up blocker notification, select "Options", and select "Show http://rmbo.org/v2..."
4. Select "Save File" and Hit OK.
5. Close the Firefox browser containing the data entry application.
6. Extract the new Data Entry files, setting your Desktop as the destination folder.
7. If done correctly, another window will pop up asking if you want to replace the old Data Entry folder with the new one. Select "Yes" every time it asks you if you want to replace a file within the folder (or "Yes to All" if that's an option).
8. NOTE: The take away message here is to replace the old Data Entry folder with the new Data Entry folder, no matter what you've called it or where it's saved. By saving the latest version to the same location on your computer, your browser will retain links to any saved transects that you have previously entered and you will not lose any data.
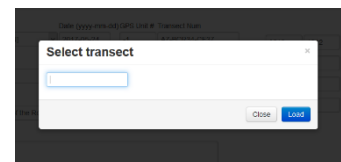
2. Accessing Data

Your proofing supervisor will email the data entry and proofing application in a zipped folder. You will need to download and unzip the data entry folder and use Firefox to open the index.html file within the data entry file. The first time you open the index.html file you will need to be online so that the program can download the necessary files from the database. Upon opening the index file, you will be prompted to select from the following options:

- Data Entry Mode: IMBCR, IMBCR (variable points), Parks, Tamarisk, Habitat, Wintering Grasslands, Restoration Monitoring, Soapstone, Muleshoe, Survival, or NEON.
- Language: English or Spanish
- Species code mode: 4 or 6
- Vegetation code mode: 2 or 6

You will be instructed which modes to use when you receive data to proof. Select the desired modes and then click "Load". This will take you to the data entry home page.

To access data in the database you will need to enter a password. Once the data entry home page has loaded hold down the Shift key, move your mouse pointer over the Pi (π) symbol in the lower left hand corner of the screen and click on it. A pop-up window will appear asking for a password. Enter the password provided by your supervisor and click on the OK button. If done correctly, you should see the option "Remote Transects" underneath "Saved Transects" in the upper left corner of your screen.

To access the data associated with a transect click on the "Remote Transects" button. A pop up window will appear (right). Carefully enter in the transect name (or copy and paste from your transect assignment list). Once you have entered the desired transect click "load" and then select the appropriate visit (year) and observer from the drop down menu. You should now be able to see the data entered for that transect.

The following sections will give you a detailed breakdown on what to look for while conducting a full proof, how to document errors found in the database, how to handle erroneous or missing

data on the datasheet, and how to submit corrected data.

3. Tracking Your Progress

A. Proofer Work Log

In order to assist your supervisor in processing and approving your timesheets we ask that you fill out a work log. For each transect you proof you will record the transect name and number, the date you proofed it, the approximate number of errors corrected, and the amount of time you spent proofing it. You will be provided a proofer work log template by your supervisor. Proofers can then utilize this work log when completing their timesheets. Work logs should be submitted to your supervisor along with your timesheet every two weeks to assist your supervisor in tracking the proofing progress and in reviewing your timesheet. You will be notified in advance when each pay period is ending.

B. Data Collected Incorrectly

The role of the full proofer is to ensure that the database reflects the datasheet as closely as possible. You will likely encounter instances when it is not possible to make the database match the datasheet exactly. The most common instance where this occurs is when an incorrect code for a bird or vegetation species was recorded on the datasheet. Since the data entry system will not allow incorrect codes to be entered, you will be unable to fix the discrepancy. When you come across one of these discrepancies, email your supervisor with the transect ID, point where the error occurred, and a description of the error. Your supervisor will contact the technician responsible for recording that data, figure out how the data needs to be corrected, and tell you how to enter that data. Your supervisor will make corrections to the datasheet and rescan the corrected data to avoid future confusion.

4. Visit Data

Check the following information to verify that it was entered correctly. Since there is not a lot of information in this section, it will be easier to just look at the Visit Data page and compare the data in the database to that on the datasheet. Most of the information on this page is recorded at the top of the Vegetation data sheet.

A. Observer

Verify the observer ID on the datasheet matches that in the database.

B. Date

Verify the date on the datasheet matches the date in the database. If the date in the database does not match the date on the datasheet or if no date was recorded, email your proofing supervisor who will verify when the survey was actually conducted. Also take a minute to confirm that the date and transect name on the bottom of each bird data sheet matches the veg sheet. If there are discrepancies email your proofing supervisor.

C. GPS Unit

Verify that the GPS Unit # in the database matches the # on the datasheet. If a personal GPS was used then the GPS Unit # should be "0000".

D. Observer 2

In some cases two observers will complete a single transect together for safety reasons. One observer name should be listed in the Observer field, and the other observer's name should be listed in the Observer 2 field. Your data proofing supervisor will let you know when you are assigned a transect conducted by two observers.

E. Who Collected

Make sure the survey is associated with the organization that conducted the survey.

F. Time

Verify that correct start and end times were entered into the database. If no time is recorded on the datasheet then the time should have been entered as "0000".

G. Sky

Verify the sky codes on the datasheet match those in the database. If no code was recorded on the datasheet the code should have been entered as "-1" in the database. If anything other than a valid code was recorded on the data sheet let your proofing supervisor know. Acceptable Sky codes are (0, 1, 2, 3, 5, 6, and 8).

H. Wind

Verify the wind codes on the datasheet match those in the database. If no code was recorded on the datasheet the code should have been entered as "-1" in the database.

I. Temp

Verify the temperatures on the datasheet match the temperatures in the database. If no temperature was recorded on the datasheet then the temperature should have been entered as "-99".

J. Notes

This section should contain any notes recorded in the "Notes" section at the bottom of each bird data sheet. Check for notes recorded on the datasheets and make sure those notes were entered into the database.

5. **Points Completed**

This page contains information about count start times, GPS Accuracy, and reasons points were not completed. Again, since there is not a lot of information in this section, it will be easier to just look at the Visit Data page and compare the data in the data entry application to that on the datasheet.

A. Point Start Times

Verify the Point Start Times (on the Bird datasheets) match the times in the database. If no Point Start Time was recorded then "0000" should have been entered.

B. GPS Accuracy

Verify the GPS accuracy on the datasheet matches that in the database. If no GPS accuracy was recorded on the datasheet then "-1" should have been entered in the database.

C. **Completed**

Verify that each point listed as completed was actually completed. To do this, look at the bird datasheets and find the data for each point listed as completed. You should also verify there are not additional points of data on the hard copy that are not listed as completed in the database. If there are, you will need to change the status of that point to "Completed", enter the start time and accuracy for that point and enter the Veg and Bird data in the corresponding tabs for that point (refer to the data entry protocol for more information on entering data). Lastly, for points that were not completed, verify that the reasons points were not completed entered in the database match the reasons on the datasheet. If the reason is "O = Other" make sure that the notes section contains notes about why the point was not completed. Let your proofing supervisor know about any missing information.

6. **Vegetation Data**

Check the following information to verify that it was entered correctly.

A. **Private Property**

Check the Private Property column to make sure the entered data matches the datasheet. Correct any errors in data entry. If the Private Property box on the datasheet has a "Y" on it, then the Private Property box on the data entry application should be checked. If the Private Property box was left blank let your supervisor know.

B. **Other (Midstory, Cliff/Rock, P-dog town, P-dogs present, Cheatgrass)**

Check to make sure all boxes marked "Y" on the datasheet are checked in the database and all boxes marked "N" are unchecked. If a box was left blank on the datasheet, assume that the field should be populated with an "N".

C. **Primary Habitat**

Make sure that all codes entered for Primary Habitat match the codes recorded on the datasheet. Correct any errors in data entry that you find. If the Primary Habitat field was left blank on the datasheet, leave it blank in the database. If the code recorded does not match any of the options on the drop-down list, make sure "XX" is selected in the database.

D. **% Overstory**

Make sure that all data entered for % Overstory match the datasheet. Correct any errors in data entry that you find. If the Overstory % is left blank then enter "-1" to indicate missing data. These records will be reviewed during the query proof process.

E. **Overstory Mean Height**

Check to make sure that all entered Mean Canopy Heights match the datasheet. Correct any errors in data entry. If the Overstory Mean Height was left blank, no Overstory Species were recorded, and the % Overstory was entered as "0", enter "0". This indicates that there was no overstory present at this point. If the Overstory Mean Height was left blank and there is information entered in either the Canopy Cover Percentage or the Overstory Species, enter "-1" in the Overstory Mean Height field in the database. This indicates that an overstory was present but the observer forgot to record this information. These records will be corrected in the query proofing process.

F. **# of Snags**
    Verify the Number of Snags recorded on the datasheet matches the Number of Snags entered into the database. Correct any errors in data entry. If the Number of Snags was left blank enter "-1" in the snags column.

G. **Overstory Species and Abundance**
    Check all Overstory Species and Percentages to make sure the data entered match the information on the datasheet. Make any necessary corrections. An "XX" code for an Overstory Species indicates that a legitimate two-letter plant code was recorded on the datasheet but that code was not available from the drop-down list at the time of data entry. If the code recorded on the datasheet does not match anything in the drop-down list leave it entered as "XX". Someone will correct this record during the query proofing process.

    If there is a % Canopy Cover or Overstory Mean Height recorded and the Overstory Species field is left blank on the datasheet make sure the Overstory Species fields are left blank and the abundance fields are filled in with "-1" in the database. These records will be corrected during the query proofing process. If there are one or more Overstory Species Percent fields that were left blank enter "-1" in the Percent fields. These records will be revisited during the query proofing process. If there is a percentage recorded with no associated two-letter veg code, make sure the Overstory Species Percentage is entered in the database and enter "XX" for the Overstory Species Code.

H. **% Shrub Cover**
    Check all values entered for % Shrub Cover and make sure they match the datasheet. Correct any errors in data entry. If the % Shrub Cover is left blank then enter "-1" to indicate missing data. These records will be reviewed during the query proofing process.

I. **Shrub Mean Height**
    Check all Shrub Mean Heights entered against the datasheet. Correct any errors in data entry. If the Shrub Mean Height was left blank, no Shrub Species were recorded, and the % Shrub Cover was entered as "0", enter "0". This indicates that there was no overstory present at this point. If the Shrub Mean Height was left blank and there is information entered in either the % Shrub Cover or the Shrub Species, enter "-1" in the Shrub Mean Height field in the database. This indicates that a shrub layer was present but the observer forgot to record this information. These records will be corrected in the query proof process.

J. **Shrub Species and Abundance**
    Check all Shrub Species and Shrub Species Percentages to make sure they match the data recorded on the datasheet. Correct any errors in data entry. If "XX" was entered for a species, this indicates that a legitimate two-letter plant code was recorded on the datasheet but that code was not available from the drop-down list at the time of data entry. If the code recorded does not match anything on the drop-down list, leave it entered as "XX". Someone will correct this information during the query proofing process.

    If there is a % Shrub Cover or Shrub Mean Height recorded and the Shrub Species field is left blank on the datasheet make sure the Shrub Species fields are left blank and the abundance fields are filled in with "-1" in the database. These records will be corrected during the query

proofing process. If there are one or more Shrub Species Percent fields that were left blank enter "-1" in the Percent fields. These records will be revisited during the query proofing process. If there is a percentage recorded with no associated two-letter veg code, make sure the Shrub Species Percentage is entered in the database and enter "XX" for the Shrub Species Code.

K. Ground Cover Percentages
Check that all Ground Cover Percentages match the datasheet. Correct any errors in data entry. If any fields in the ground cover section were left blank on the datasheet, enter "-1" in those fields. These records will be corrected during the query proofing process.

L. Dead Standing Grass Height
Check to make sure that the Dead Standing Grass Height was entered correctly. Make any necessary changes. If the Dead Standing Grass Percent Cover was left blank, "-1" should have been entered for Height. If the Dead Standing Grass Height was left blank and Dead Standing Grass Percent was "0","0" should have been entered. If the Dead Standing Grass Height was left blank or entered as "0" and a non-zero Dead Standing Grass Percent was recorded, enter the Dead Standing Grass Height as "-1" in the database. This indicates that Dead Standing grass was present but the Dead Standing Grass Height was not recorded. These records will be corrected during the query proofing process.

M. Live Grass and Herbaceous Height
Check to make sure that the Live Grass and Herbaceous Height was entered correctly. Make any necessary changes. If the Live Grass and Herbaceous Percent Cover was left blank, "-1" should have been entered for Height. If the Live Grass and Herbaceous Height was left blank and Live Grass and Herbaceous Percent was "0","0" should have been entered. If the Live Grass and Herbaceous Height was left blank or entered as "0" and a non-zero Live Grass and Herbaceous Percent was recorded, enter the Live Grass and Herbaceous Height as "-1" in the database. This indicates that Live Grass and Herbaceous was present but the Live Grass and Herbaceous Height was not recorded. These records will be corrected during the query proofing process.

7. Bird Data
Check the following information to verify that it was entered correctly.

A. Point Number
Make sure the Point Number associated with each bird record matches the datasheet.

B. Minute
Make sure the Minute associated with each bird record matches the datasheet. If a technician recorded an "88" bird between points, the datasheet will have the bird with an "88" recorded in the Point column and no Minute recorded in the Minute column. These records should be represented in the database with the Point Number of the previous point and the Minute equal to "88".

If no Minutes were recorded on the datasheet for a Point then each Minute for that Point should be entered as "-1".

C. **Species Codes**

Verify that the four-letter Species Codes on the datasheet match the four-letter Species Code in the database. If the four-letter Species Code on the datasheet does not appear in the database, consult your proofing supervisor and they will let you know what to enter.

Note that for "NOBI" (No Bird) detections the Distance, How, Sex, Visual, Migrating, Cluster Size, and Cluster Code info does not need to be verified. You should check that all "NOBI" detections have a Point and Minute associated with them. Make any necessary corrections to the database.

D. **Distance**

Verify the correct distance was entered for each bird record. If no distance was recorded on the datasheet then the distance should be entered in the database as "-1". If a distance over 999 m was recorded on the datasheet, that distance should be entered as "999".

E. **How**

Verify the correct How code was entered for each bird record. If no How code was recorded on the datasheet then "U" should be entered. If two how codes were recorded and the second code is anything other than "S", then make sure only the first code recorded was entered. Assume the leftmost How code recorded was the first code.

F. **Sex**

Verify the correct Sex code was entered for each bird record. If no Sex code was recorded on the datasheet then "U" should be entered.

G. **Visual?**

If the Visual checkbox is checked on the datasheet, make sure that box is checked in the database. **Do not check the visual box in the database if it is not checked on the datasheet no matter what how code was recorded!**

H. **Migrating?**

If the Migrating checkbox is checked on the datasheet, make sure that box is checked in the database.

I. **Cluster Size**

Verify the Cluster Size on the datasheet matches the Cluster Size in the database. If the Cluster Size is blank on the datasheet, it should be entered as "1" in the database (except for NOBIs).

J. **Cluster Code**

If a Cluster Code is recorded on the datasheet make sure the Cluster Code was entered into the database.

K. **88 Birds**

Field technicians tend to make mistakes when recording and entering 88 birds. Check to make sure all 88 birds are associated with the correct point (the point the technician surveyed immediately prior to detecting the 88 bird). If a field technician records an 88 bird before the first point or after the last point on a transect remove this data from the

database. You should note these bird detections in the notes section on the Visit Data page (the page where you enter wind, sky, time, etc.).

8. **Submitting Your Changes**
   Upon completing the full proof of a transect you will need to make sure that any corrections you made are submitted to the database. To do this you will need to click on the "File" button at the top of the page and select the "Submit Transect Visit" option. Please note that clicking "Save Transect" only saves the changes you made on your computer and does not save the changes to the database, so make sure you select the "Submit Transect Visit" option. The first time you do this, it is a good idea to close down the data entry app after submitting, open it again, and pull up the transect you just submitted. Check to make sure the changes you made are still there to confirm you submitted the transect correctly.

III. Troubleshooting

You may encounter issues when loading data remotely or submitting data to the database. Look below for commonly made errors, the error message you will receive, and how to correct the error. If you come across an error not listed below, email your supervisor along with the error message and they will instruct you on how to proceed.

1. **Unresponsive Script Pop-up window keeps appearing**
   Do you frequently see a pop-up window notifying you of "Unresponsive Script"? The next time you see this window pop-up, you want to first check the box saying "Don't ask me again" and then you want to tell it to CONTINUE running the script. This should allow the application to run smoother and you won't be interrupted by the pop-up window anymore.

2. **Unable to load a survey remotely**
   You may run into a situation where you are unable to load a survey remotely. The most common cause of this issue is that your Firefox browser cache is full. In order to clear the cache, follow these steps:

   A) Open up the data entry app in Firefox. Click on the options menu at the upper right side of the screen. Select "Developer", then select Web Console.
   B) You will see a small screen at the bottom of the web page with a carrot (>) at the very bottom. Next to that carrot, type "window.localStorage.clear()" and hit enter. Note that the S in Storage is capitalized. This should clear out the localStorage cache in your browser, which is specifically where all the data entry app data is stored.
   C) Once you clear out your local storage, close your Firefox browser and reopen the data entry application. You should be able to resume data entry or proofing as usual at this point.

3. **Horribly invalid data**
   Error Message:

   The transect visit submission failed!
   Error: FAILED_DESERIALIZE
   Text: The submission could not be deserialized (horribly invalid data): **1-** is not a valid value for Int16.

If you received this error, don't panic and don't take it personally. This message simply means that there is a value entered into a field somewhere that the database cannot accept. In this case, the value is "1-". This probably should have been a "-1" instead. Look at the value in the error message that isn't valid, then look for that value entered somewhere in one of the tabs. When you find it, correct it.

If instead of a value, you just see a blank (. . .(horribly invalid data): is not a valid value . . .), this indicates that there is a field left blank somewhere in the data and the database won't allow this. Look for any blank fields that are supposed to have a value, and fill in the value or enter -1.

Once you've corrected the issue, try to resubmit the data. If it still doesn't work, contact your supervisor.

4. **Point doesn't exist**
Error Message:

The transect visit submission failed!
Error: POINTVISIT_PARSE_FAILED
Text: The PointVisit could not be parsed because the list of points in the database did not contain the point **17** from the datasheet.

This message indicates you've somehow you entered a point in the Points Completed tab that doesn't actually exist in the database. In this case, someone entered a point 17 on a survey that only contains points 1 – 16. If you receive this message when submitting your data to the database, navigate to the Points Completed tab and check for a point number that may have been entered incorrectly. If there is a survey map included with the data, look at that map to determine which points are legitimate.

If you find the error and correct it in the Points Completed tab, make sure you also correct that error on the Veg and Bird data tabs as well, then resubmit the data.

If you still cannot find the error, email your supervisor with the error message.

5. **Duplicate points**
Error Message:

Error: NEWVEG_INSERT_FAILED

Text: The insert into the NewVeg table failed: Violation of UNIQUE KEY constraint 'IX_NewVeg'. Cannot insert duplicate key in object 'dbo.NewVeg'. The duplicate key value is (498830).

This error message indicates that there is a point number duplicated in the vegetation data tab. Navigate to this tab and check through all the point numbers wherever the point numbers are listed. Make sure each of the point numbers is unique and matches the datasheet. Correct any duplicate numbers and resubmit the data to the database. If you are still unable to submit the data to the database, notify your supervisor.

Note: Make sure you check the Points Completed tab if you submit data to the database but never receive a confirmation pop-up window that the data successfully submitted to the database. If this happens to you, check the Points Completed tab and make sure none of the points are duplicated there. If points are duplicated on this tab but not on the Vegetation Data tab, then your data will not submit to the database but you will not receive an error message.