Canadian Migration Monitoring Network (CMMN) Daily Estimated Totals Spreadsheet version 2.0

15 March 2014

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Credits and Acknowledgements

The development of this spreadsheet was possible thanks to support from Environment Canada. It was developed by Denis Lepage from Bird Studies Canada. We would like to thank the manypeople who contributed to the development of this program in various capacities: Alaine Camfield, Marie-Anne Hudson, Catherine Jardine, Stu MacKenzie, Ann Nightingale, David Okines, Andrew Sawyer and Phil Taylor.

Getting Started

The Canadian Migration Monitoring Network (CMMN) Daily Estimated Total (DET) spreadsheet is designed primarily as a way for CMMN member stations to compile and submit bird migration monitoring data to a standard data repository managed by Bird Studies Canada (BSC). This spreadsheet is intended as a gradual replacement of the older FoxPro version of the CMMN DET software that many stations have been and are still using. Currently, there is no requirement to use this spreadsheet. Stations may continue to use the FoxPro version if they wish, but BSC will only provide support for the Excel spreadsheet version in future. Please remember that a requirement of CMMN membership is that all data must be submitted to BSC annually in an acceptable format using fully compatible codes (e.g., species codes).

This spreadsheet ensures that formatting is consistent and use is simple and straightforward. You can only enter values in the fields shown with white backgrounds. All other fields are locked and cannot be modified by the user. Some of the locked fields contain formulas and codes to insert values automatically.

To get started, you will need to set up the file for your first use. This requires filling the setup sheet which will identify your site and data columns, as well as define your default species list. You will then need to enter all new data in the *data_entry_form* sheet (see the more detailed instructions below). All data that you enter get saved to the *det_data* and *effort_data* sheets. If you need to make any changes to data that you entered earlier, such as during data proofing, you must change them directly in the *det_*data and *effort_*data sheets.

> **Important: You should remember to save your data periodically during data entry, to avoid losing any work. The Save Entire File button in the data entry sheet can be used, as well as hitting the keys CTRL-S (in Windows). If you opened the file from an email attachment, please ensure that you save a local copy in a folder where you can find it again.**

We recommend that you start with a new copy of the spreadsheet each year (or season, depending whether you submit your data once or twice per year). We may occasionally update the spreadsheet, so you may want to compare your version number displayed on the setup page with the one available for

download. We will use the CMMN listserv to announce any changes that may require stations to download a new spreadsheet.

This manual assumes that the reader is already familiar with the CMMN protocol and DET calculations. For more details on these topics, including how to estimate and report DET values, please refer to your station protocol.

Navigating the file

To move from one section of the file to another (called sheets in Excel), you can either use the navigation buttons that generally appear towards the top of a sheet such as Species List, Data Entry, etc.
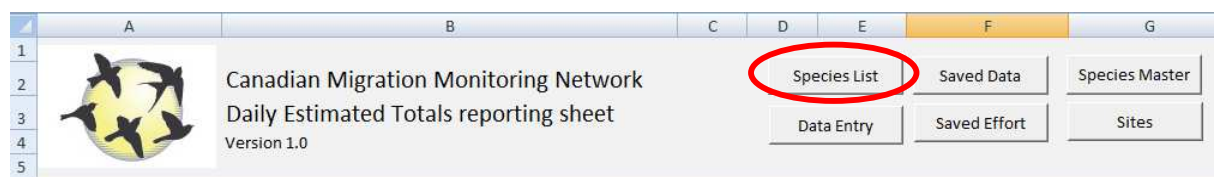
As with any other Excel file, you can also click on one of the tabs at the bottom of the screen to move between sheets.
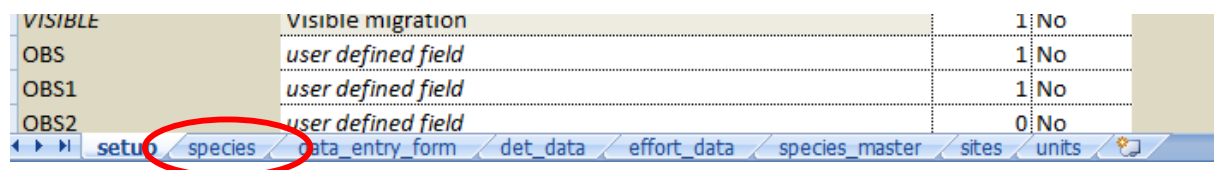

Support

This program was designed and created by Bird Studies Canada, with input from several other CMMN collaborators. For general inquiry and support questions regarding the use of the CMMN DET spreadsheet, please contact Audrey Heagy (aheagy@birdscanada.org). For bug reports, please contact Denis Lepage (dlepage@birdscanada.org) or Catherine Jardine (cjardine@birdscanada.org).

System Requirements

The main requirement is to have a relatively recent copy of Microsoft Excel (2003 or higher). The current version has been tested with Excel 2003 and Excel 2007, and Mac OS Lion with Excel 2011. The screen captures below refer to the Windows version of Excel 2007, but should look similar in other environments. Please notify us if you run into any compatibility issues in other environments.

Macros are required to operate many of the functionalities of the DET spreadsheet. Macros are available by default in Excel (no special downloads are required), but they are normally disabled for security reasons, as macros could be used maliciously. Macros are required to use the interactive features of the spreadsheet, such as data entry, but not if you only need to browse or copy existing data for other purposes.

When you open the file, you will likely be warned that macros have been disabled. **You must either enable macros each time you want to use the file for data entry, or add the folder containing this file to the list of trusted locations.** To enable macros for one-time use, immediately after you open the file, click on the *Options…* button that will appear at the top of the sheet where you see the Security Warning (Macros have been disabled) as illustrated below.
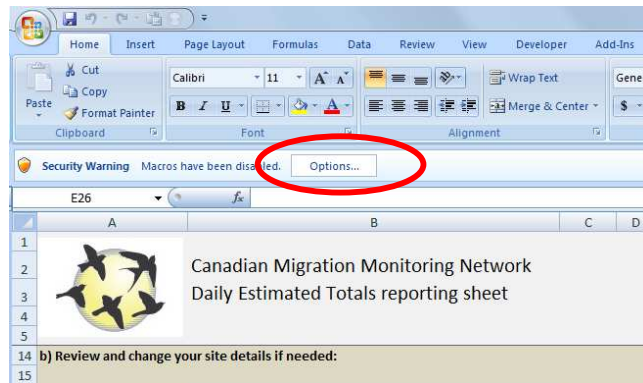

In the following dialog box, simply select *Enable this content* to turn on the macros, and then click OK.


To avoid this step with every session, you can also flag the folder that contains your spreadsheet as a trusted location. In the same dialog box that appears when you click *Options…*, click instead on *Open the Trust Center* in the lower left corner as shown below.

Click on the *Trusted Locations option* in the left hand-side menu, and then chose *Add new location…* You will then be prompted to provide a folder name. **You should only do this for folders that contain content that you trust.** We recommend for instance that you do not include a folder where you regularly save files downloaded from the Internet. If you downloaded this DET spreadsheet from the CMMN web site, you should move it to a new location on your hard drive before opening it and enabling the macros.
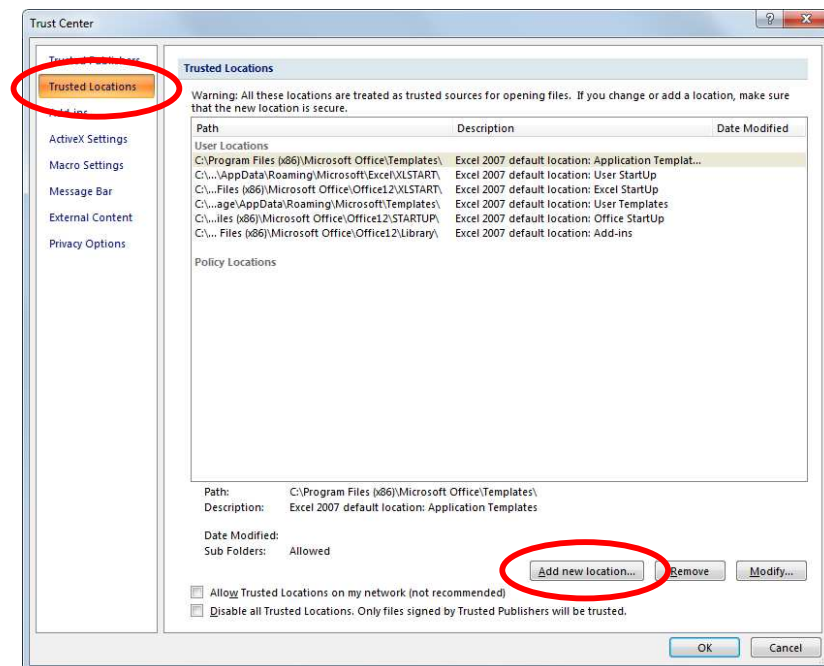
After you click on *Add new location…*, you will see another dialog box where you simply need to enter or browse to the path (e.g. c:\cmmn\det\) that contains the DET spreadsheet, and then click *OK*.
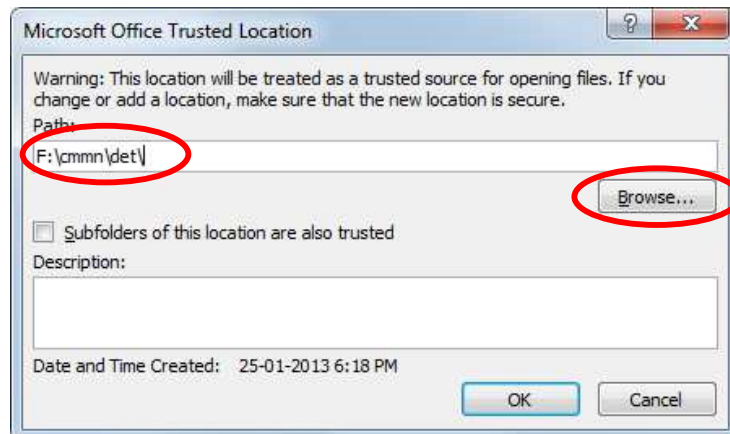
Copying Your Data for Other Uses

Note that you can copy and paste any data from any sheets into an unprotected spreadsheet. To do so, simply select the data you want to copy using your mouse (or Ctrl-A key combination), use the *Copy* function (Ctrl-C), go to a blank spreadsheet and use *Paste special…* or *Paste values* to remove any formatting and protection.

Setup Instructions

Before you can start using the spreadsheet for data entry, you must set up your spreadsheet (see below). Once your file has been customized to match your station's protocol, it is important not to modify the definition of existing user or effort fields. You can, however, add new user or effort fields during the season. Please note: there are multiple pop-up help windows throughout the spreadsheet. If you do not understand what is required in a given field, simply click on the data cell to access the help text.

New in version 2.0: We have made changes to the list of fields that you are asked to enter. Rather than using a list of predefined fields (e.g., *number of birds banded*, *recaptured*, *seen during census*, etc.), all fields are now user-defined, except for the *Daily Estimated Total* fields. See details below.

Setup Sheet

Section A. Identify your site

- Under 1. Station setup, section A), click on the first white cell (called *Pick a site from the list*, cell B10). This will bring up a small downward pointing triangle immediately right of the cell. Click on the triangle.

1. Station setup. You must select the CMMN station and/or site for which you are
more additional sites, you must use another copy of this spreadsheet.

A) IDENTIFY YOUR SITE
Pick a site from the list   Bruce Peninsula
site code   New site
                             Atlantic-Bon Portage
                             Atlantic-Seal Island
                             Beaverhill
                             Bruce Peninsula
B) REVIEW AND CHANGE Delta Marsh
                             Inglewood
                             Innis Point

Site name
Latitude
Longitude
Description

- Select the site for which you want to report data from the existing list. The site name will generally be the station name if only one site exists, or a station name and a site name in brackets [e.g., *Long Point Bird Observatory (Old Cut)*] if there is more than one site for a station. If this is a new station or a new site, or if your site has moved to a new location, select *New site* from the top of the list, and provide a site name (see below). We will assign your site a new code once we receive the data.
- Also enter a contact name and email in case we have any questions about your data.

Section B. Review and change your site details
- If you picked *New site* in section A), please provide a site name, latitude and longitude in decimal degrees (e.g., 45.5667, -75.3456) and a general description (optional).
- You can check the list of coordinates for existing sites under the *sites* datasheet. If your coordinates are correct, you do not need to provide them again. If you need to correct the coordinates, simply enter them in the *setup* sheet. Also indicate in the *Description* field whether the change reflects values that were previously incorrect or whether the site has actually moved.

Section C. Define your data fields
- This section is used to create user-defined fields as well as identify which data columns are used in your automatic Daily Estimated Total (DET) calculations or exported to NatureCounts for external data requests.

C) DEFINE YOUR DATA FIELDS
You can indicate which of the following fields should be used in the automatic default calculation of the Daily Estimated Totals.

Field	Definition	Units	Include?	In use?	NatureCounts?
OBS01	Number of birds banded	BAND	1	No	No
OBS02	Number of birds recaptured	RECAP	1	No	No
OBS03	Number of birds on census	CENSUS	1	No	No
OBS04	Visible migration	VISIBLE	1	No	No
OBS05	Raptor migration count		0	No	No
OBS06			0	No	No
OBS07			0	No	No
OBS08			0	No	No
OBS09			0	No	No
OBS10			0	No	No
OBS11			0	No	No
OBS12			0	No	No
OBS13			0	No	No
ET_auto	Daily estimated total (automatically generated)				
ET_manual	Daily estimated total (manual override)				

> **Describe your custom fields**
> Enter a description for your user-defined bird count fields (e.g. seawatch, raptor count, etc.)

- Compared to the earlier version of the DET spreadsheet, all fields are now user-defined reporting fields (*OBS01-OBS13*). Under *definition*, simply indicate the meaning of a specific column (e.g., Daily raptor count). The definition entered here will be stored in our database, and also used in NatureCounts data requests (for fields that you chose to include). We strongly encourage you to retain the same field definitions in subsequent years, i.e., if you use the *OBS05* field for a Daily raptor count, it is preferable to continue using this field for your raptor count in future years (even if you are not using that field in a given year).
- If your field matches one of the older field names used in the old FoxPro program or version 1.0 of the DET spreadsheet (e.g. BAND, RECAP, CENSUS, VISIBLE, etc.), you can pick that field name in the *Units* column. If they do not match, or if you are not sure, simply leave that field blank.
- If you want to use the automatic DET calculation feature, you can also specify which columns are included in the formula. This feature is only offered for convenience; all DET values can be modified manually during data entry, as explained in the data entry section below.
- To include the count from a specific field in the automatic DET calculation, simply enter the value "1" in the *Include?* column. Fields that you do not want to include in the formula should be assigned a value of "0". Finally, any fields that you want to *subtract* from the DET must be assigned a value of "-1" (this feature is rarely used by stations). In the example above, the formula for calculating the DET is the total of the fields OBS01-OBS04 (BAND, RECAP, CENSUS and VISIBLE). Other fields are ignored by the calculation.
- Note: if you modify which fields are included in the automatic DET calculation after you have begun entering data, this will not impact previously entered data; those will retain the values calculated at the time they were entered.
- By selecting "Yes" or "No" from the *In Use?* column, you can highlight the fields that are in use in your data form, which may help to reduce the risk of errors when entering data. Fields in use will be shown in white, while unused fields will be in gray. You will be able to enter data in both types of fields at any time; this feature is completely optional.

- A new option introduced in version 2.0 allows you to identify which of your fields you would like to share on http://www.naturecounts.ca/ (e.g., for external data requests). By selecting "Yes" or "No" from the *NatureCounts?* Column, you can identify which fields should be included. The DET value is always used for the primary *ObservationCount* field. For the time being, only the first 5 user fields will be made available in NatureCounts, but you can identify more than 5 fields if you want.

Section D. Define your effort fields

- You can report up to 10 different values for effort. You can measure effort any way you choose, but this version only allows a maximum of 10 numeric values. You must specify a description for each effort field that you want to use. For instance, you may want to report the total number of net-hours individually, the total number of trap-hours for the two types of trap, the census duration and the total number of volunteers. If you want, you can also separate your effort fields into finer categories (e.g., by type of nets or traps, etc.). We encourage you to specify the type of units used by your fields (e.g., trap-hours, net-hours, etc.), but this is not mandatory.

Field	Definition	Units	Carry over?
EFFORT1	*Total net-hours*	net-hours	Yes
EFFORT2	*J-TRAP hours*	trap-hours	Yes
EFFORT3	*Ground Trap Hours*	trap-hours	Yes
EFFORT4	*Total observer-hours*	observers-hours	No
EFFORT5	*Census duration*	decimal hours	Yes
EFFORT6	*Seawatch*	decimal hours	No
EFFORT7			
EFFORT8			
EFFORT9			
EFFORT10			

- Duration should always be reported in decimal time (e.g. 8h30 = 8.5).
- We encourage you to retain the same field definitions as much as possible, both within a season, and across different seasons.
- The *Carry over?* option allows you to copy the effort values entered on one day onto the following day, so they do not have to be entered for every new day. You can use this option for any effort field that is generally standardized and tends to remain the same across consecutive days (e.g., number of standard net-hours). All fields that are marked for carrying over will simply retain their values from the previous date when you save the *data_entry_form* and start a new one. Other fields will be reset and will need to be entered for each date. Use this option for effort measures that generally remain constant or change only slightly from day to day. After the next day's *data_entry_form* is created, you will be able to adjust the carried forward values if necessary.

Species Sheet

The species list is the list of bird names and codes that will appear by default when you start a new blank *data_entry_form* each day. Generally, this list should match your printed data sheet (e.g., in your hardcopy daily log book) as this will facilitate data entry and reduce errors. **Note that you should not have to modify this list very often, as all additional *write-ins* (species not in the default list) can be added directly at the bottom of each day's data entry sheet (see below). If a write-in species is reported with regularity, you may want to consider adding it to your default list.**

To create your station list, enter the 4-letter species codes in the ***Enter codes*** column, in the order in which you want them displayed in the *data_entry_form* (best to keep order the same as on your printed data sheet). If you are not familiar with the species codes, you can look at the *species_master* sheet (which you can reach by clicking on the Species Master button shown above). The other columns will automatically fill up with the correct species names once the 4-letter code has been added. Verify that the species name shown is correct. If there is a discrepancy, look in the *species_master* sheet to find the correct code for the species you want.

Note that you can modify the species list at any time, as this list is only used to generate the blank *data_entry_form*, and has no implications for data storage and does not affect the data you have already entered.

Tip #1: If you **need to insert or remove a species after your list is created**, you have two alternatives. The simplest, but slightly more time consuming option, is to delete the species from your list in Column B (**Enter codes**) and re-enter the species in the correct order from the top, or from the point where the change starts. The other option is to **copy** (you should *not* cut) blocks of cells within column B up or down and move them to their new position. It is not possible to insert or delete rows from the entire sheet as this featured is blocked; this is to prevent creating problems with the scripts that refer to this table.

For instance:

- if you wanted to **remove** Common Raven from the list above, you could select the block of cells from B10 to B13 (from BLJA to WBNU, directly underneath Common Raven), copy those cells to the clipboard, move to cell B9, and paste the content of the clipboard at that location. You will now have 2 cells that have WBNU (B11 and B12), so you need to go to cell B12 and delete the second WBNU;
- if you wanted to **insert** a new species between Common Raven and Blue Jay (e.g., Gray Jay), you could select the block of cells from B9 to B12, copy those cells to the clipboard and paste them one row down at cell B10. In this case, you will have two entries for Blue Jay (cells B9 and B10), so you need to replace the first BLJA in B9 by the code for Gray Jay (GRAJ).

> **CAUTION: You should never use the <u>cut</u> and paste function to move blocks of cells**, as this will disrupt the species name columns, and may corrupt your file!

Tip #2: By default, Excel will **attempt to correct words as you type**, assuming that you have made errors when words are not recognized. This can be problematic with species codes - AMKE in particular - which Excel invariably converts to MAKE. To prevent this, click on the *Office Button* in the top left corner and click on *Excel Options*.
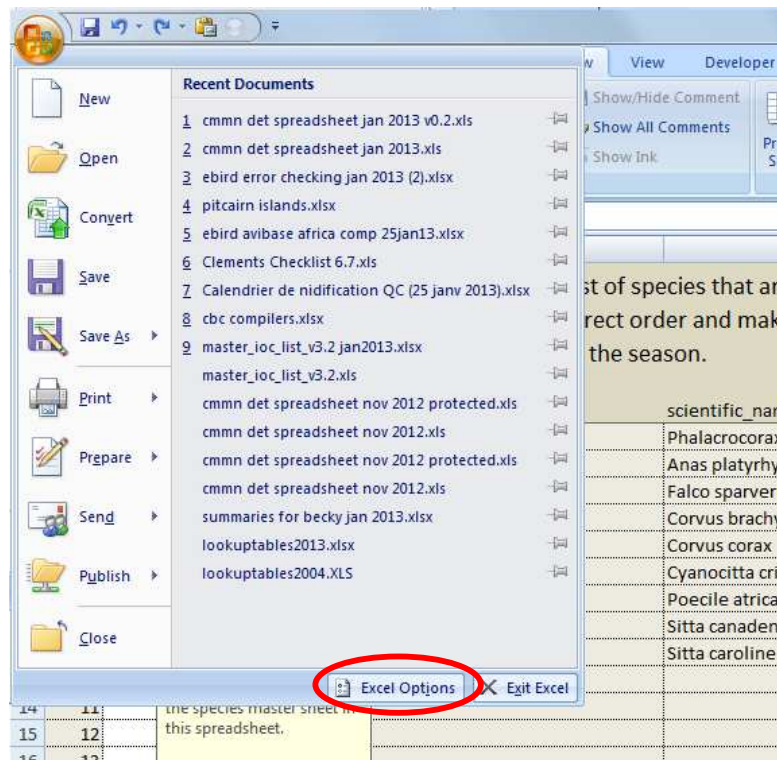
In the *Proofing* tab, click on *AutoCorrect Options…*
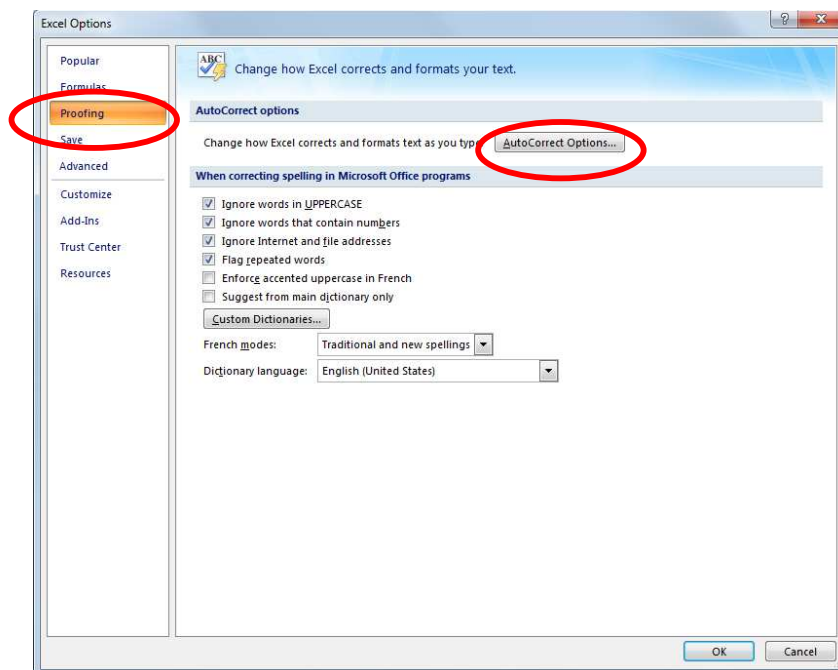
Make sure that the *Replace text as you type* option is turned off (uncheck the box).
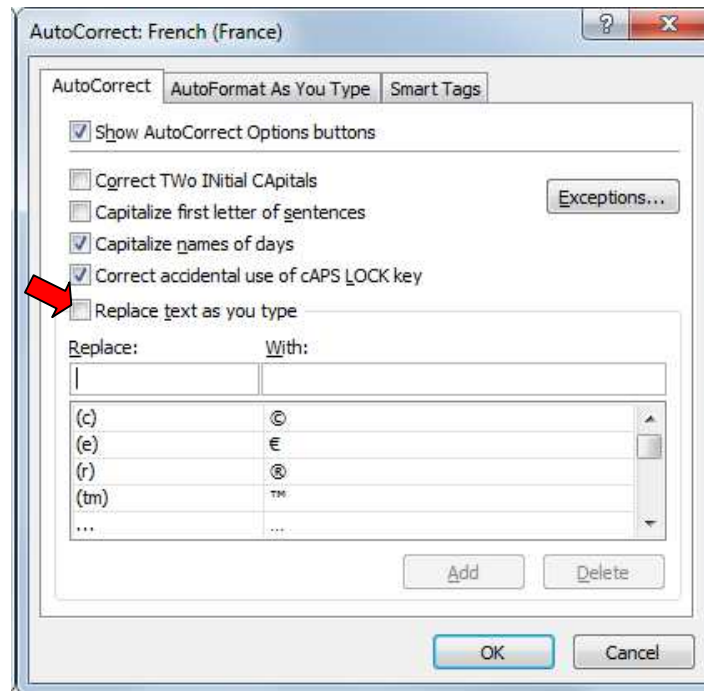
You can also look for individual entries in the list (e.g. MAKE) and delete them so they are no longer applied.

Entering Data

Data Form Sheet

Once you have finished your setup, you can start entering data. The *data_entry_form* sheet is used to enter all observations from a single day at a single site. The data sheet contains 3 sections, plus 4 buttons for saving and other functions.

Date and times

- Enter the first date in the data field. The date should be formatted as DD-MMM-YYYY (e.g., 15-Apr-2012 or 15-04-2012). You can enter the date in another format if you want, but make sure it is displayed in the DD-MMM-YYYY format once entered. This date format is required as it avoids any confusion with other possible date formats which can cause errors (e.g., inverting day and month). The default date format used will depend on your own system, but the month should appear in letters to clear any possible confusion after it is entered. **Tip #3:** In Windows, holding down CTRL-semicolon (;) when your cursor is in the date cell will insert today's date.
- Optionally, enter the start and end times for that day (e.g., 06:10 and 12:25). Use the 24-hour time format if entering times after noon (e.g., 14:15). Start and End time apply to the overall day of operations, rather than individual effort components. Start and End times are not required; many stations probably do not enter them.
- Optionally, you can enter the names or initials of observers that contributed to data collection each day. This feature is mainly for the stations' own benefit such as data proofing later on.
- Click the *Start new form* button. If there are any data already in the species section, you will receive a warning asking you to confirm whether you want to save the existing data. The *Start new form* button will clear any existing data already in the data sheet, and will insert your default species list as well as your effort variables.

Effort data entry table

- Effort data is optional. Enter the effort data for the current date in the effort table, as defined in your setup sheet. If you enabled the carry over option in the setup sheet, effort values in the table from the previous day will be carried over into the form for the new date. You should correct values after they have been carried over if necessary.
- Effort values must be integer or decimal numbers. If the effort measured is duration (e.g., net-hours), enter the value as decimal hours (e.g., 8h30 = 8.5).

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- You can optionally report the start and end times of each type of effort, if applicable. Times should be reported using the 24-hour time format (e.g., 06:45, 14:15).
- For the effort table, rows that have blank values in the Value, Start and End columns are not saved, but those with a value of "0" are saved. For clarity, we encourage you to enter "0" when you did not use a specific type of effort, rather than leaving the field blank. Zeros are inserted by default when the field is not carried over.

Species data entry table

- If you need to see the longer definition of the various data columns as a reminder, click on the *Show definitions* button that appears above the species table (under Save / Next Day). The definitions will appear above the list of field names.

- Enter the data for the default species that appear in your list in their respective columns. If you enabled the automatic ET calculation option (when setting up the station effort options), the *ET_auto* column will automatically update as you enter data based on your settings, if you enabled this option.
- If a value in the *ET_auto* column is too high (which can happen as there is often overlap between the various fields, for example if the same bird is seen on census and banded), or too low (e.g., your station protocols calls for extrapolating from limited visible migration count data), or if you did not ask to perform an automatic calculation, you need to manually enter a new value in the *ET_manual* column. This value will be used in place of the automatic calculation. The number in the automatic calculation will still be shown on the form but not saved if there is an entry in the *ET_manual* column.
- If you observed a species that is not included in the default list (write-ins), you need to add their 4-letter species code in the *Species* column at the bottom of the list. Check to make sure the correct species name appears, then enter the various counts as usual. You do not need to

modify your default list of species (but you may wish to do so if a species is regularly reported; you can make changes to the default species list at any time).

- The master species list includes many codes for unidentified species (e.g. Warbler sp., Unidentified Goldeneye) as well as common hybrids and some exotic species.

Saving your data

- When you have finished entering the counts for the day, you can click on *Process / Next Day*. This process transfers all data to the *det_data* and *effort_data* sheets and starts a new *data_entry_form* for the next day, using the same start and end times. If during the initial setup stage you said yes to using the optional carry over function, effort values from the previous day will also be imported into the new form.
- For species data, rows that do not have a species code AND do not have at least a count value greater than 0 in at least 1 of the columns are not saved in the final datasheet.

> **VERY IMPORTANT!** Do not forget to save your spreadsheet. You can do so by clicking on Save Entire File periodically. Excel does not automatically save your data as you enter it or when you go to the next day. You should save the spreadsheet regularly as you enter data. Depending on your version of Excel, you can keep the spreadsheet in Excel 2003 if you want (.xls), or upgrade to the **Excel 2007 Macro-Enabled** format (.xlsm). You should not use the default Excel Workbook format (.xlsx), which does not allow macros. You can give the file any name you want, and you are not limited to 8 characters as in the FoxPro DET version. We suggest that you use descriptive names such as a combination of your station name, season and year (e.g. Long Point Old Cut Fall 2013.xlsm).

- If you are using Excel 2007 or 2010 and preserving the Excel 2003 format, you may receive a warning indicating that some features are not supported by earlier versions of Excel (see below). If the warning indicates only a minor loss of fidelity, you can ignore the warning (click *Continue*).
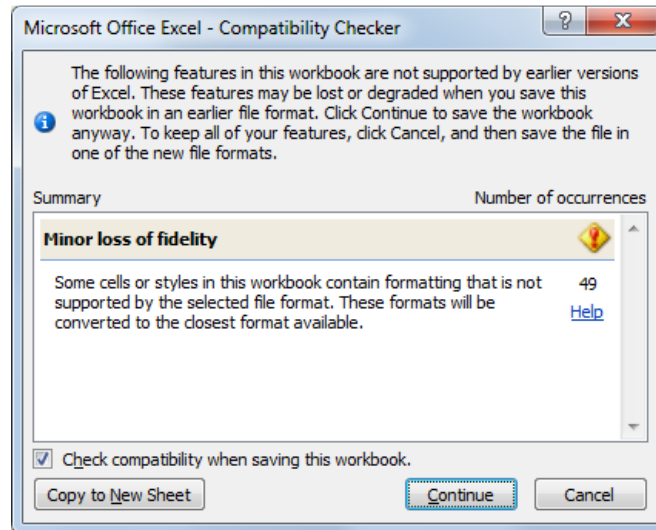
In the presence of any other warning suggesting more important issues (i.e., a significant loss of functionality), you should click *Cancel* and save your file format to a newer version of Excel. You should also contact BSC for more details.
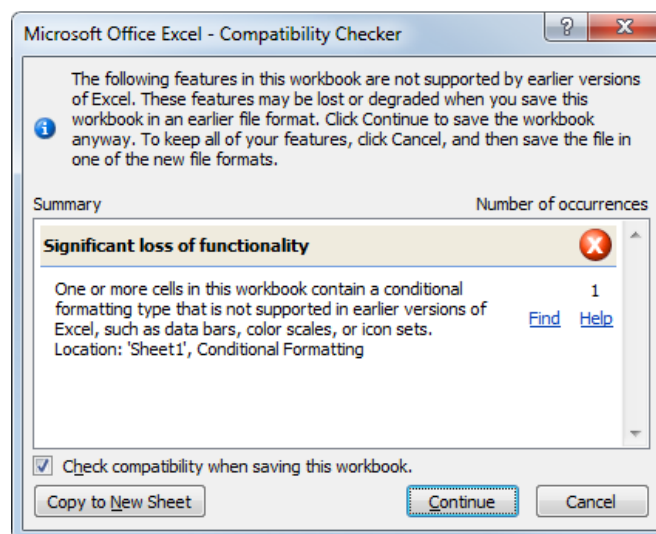
Submitting Your Data

Stations are encouraged to submit their data as soon as they can after the end of each field season.

We strongly encourage you to **carefully proof your data** before submitting them to Bird Studies Canada. This will minimize the need to later correct them, and reduce possible biases in the analysis.

To submit your data, please email a copy of the entire Excel file to Audrey Heagy (aheagy@birdscanada.org) or Catherine Jardine (cjardine@birdscanada.org).

Results of the population trend analysis, as well as various data presentation tools (seasonal and annual bar charts, trend maps, etc.) are available on NatureCounts and will be updated periodically: http://www.naturecounts.ca/cmmn/.

Stations that have assigned their DET data to AKN level 3 or higher can also download a copy of their own data from the Download section of NatureCounts (contact BSC for any changes to your AKN level): http://www.birdscanada.org/birdmon/cmmn/searchquery.jsp.

Frequently Asked Questions

Q1: The species code for species XXX that we use is not the same as the one found in the master species list. Can we change the species code in the master table?

A: The master species list has been locked to make sure there are no inconsistencies in the species codes. The codes used by the CMMN DET spreadsheet should match those published by the Bird Banding Lab (BBL). If you find any discrepancies, please let us know, and we will publish an updated version. For a few species, there is more than one code that can be used (e.g. YEWA and YWAR for Yellow Warbler). We encourage you to use the BBL codes, but you can use either the alternate or the official code. Alternate codes (not part of the BBL standard) are clearly identified in the *species_master* list (grayed out rows). You cannot use codes that you have created yourself.

Q2: We found a species that is not on the master species list. How do we report it?

A: First, make sure the species is indeed a new one, and that it is not listed under a different name. The *species_master* list is pretty comprehensive and should include most species expected in North America, as well as many unidentified species (e.g., Warbler sp.) and regular hybrids and exotic species. Note that a species may be listed under an older name if the taxonomy has changed, and that unidentified species are usually entered under one of two different formats (for instance, Warbler sp. or Unidentified Warbler). If you are sure that have observed or banded a new species, please contact BSC ASAP so we can add it to the list and share in your excitement!

Q3: Can we re-order the data entry columns to match our data entry form, or hide columns that we do not need?

A: As of version 2.0, you can now enter the fields in the order that you prefer, so it matches your own data forms. You can also highlight fields that are in use in your data form (see the Setup instructions). However, it is not possible to completely hide fields that are not in use.