Bandit User Manual

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Chapter 1. Introduction to Bandit

1.1. Welcome

Bandit is the latest in a series of programs aimed at helping bird banders manage and submit their data for banded birds. We have tried to make the process of maintaining a series of banding records as simple as possible. Bandit was created by the Bird Banding Laboratory (BBL) at the U. S. Geological Survey Patuxent Wildlife Research Center, Laurel, Maryland.

1.1.1. Features of Bandit

The principal use of Bandit is to store data obtained during banding operations and facilitate the transfer of banding data to the BBL and the Canadian Bird Banding Office (BBO). Bandit allows the bander to enter or import data and edit data associated with bands obtained from the BBL/BBO as well as data for recaptured or resighted birds, including those banded by other banders.

Other major features of Bandit are itemized below:

- Data entry and editing can be performed via a spreadsheet-like table interface or a record-by-record form-based interface. The user can switch back and forth between the two interfaces just by clicking a button.

- Ability to enter data in an extensive list of fields, including the traditional fields (Species, Age, Sex, Banding Date, Banding Location, Bander ID, etc.) and a wide variety of other fields (how aged/sexed, extensive measurements, auxiliary markings, tests performed, molt/parasites observed, etc.) A list of the most important fields in the banding record can be found in Appendix B, *Bandit Band Record*.

- Pervasive error avoidance, error checking and feedback. Most of the fields in Bandit have an auto-complete feature which checks against a list of predefined values. Where appropriate, you can also add your own values to these lists. Range checking, cross field validation, and location-based checking are included.

- Extensive export capabilities. All of the data contained in Bandit, including all of the lookup tables, can be exported to a variety of other formats, including Excel, tab-delimited text, comma-delimited text, DBF, HTML, and XML.

- Banding location coordinates may be entered precisely, including degrees, minutes, and seconds, and country, state/province, and county names.

- Data submission to the BBL/BBO can be done via an email link built into the program, provided the computer running Bandit is connected to the internet and a default email client is configured and opened. Separate data submissions can contain new bandings or modifications made to banding records previously submitted.

1.1.2. Using Bandit—An Overview

1. Installing— You can double click the installer program that you received and follow the instructions in the installer. More detailed instructions on the installation process can be found in Chapter 2, *Installing Bandit*.

2. Running the program. On a PC, select the program from the **Start** menu, in the program group named Bandit or you can click on the Bandit Icon (yellow bird icon) on your desktop, if it is present. On a

Mac, select the program from the `Applications` folder. You may want to drag the icon to your dock so it is available there.

On the opening screen:

Link 1 will take you to a screen where you can enter information about your permit and banders, and some other preferences on how you want to use the program. More details on the Settings part of the program may be found in Chapter 3, *Bandit Settings*.

Link 2 will allow you to build an inventory of the bands you received from the BBL/BBO. Details on accessing and updating the Banding Inventory maintained by Bandit, including how to add bands into the Inventory, may be found in Chapter 4, *Band Inventory*.

Link 3 is for entering your location information. You can switch back and forth between Table and Details data entry modes by clicking either **Table** or **Details**. More details on the Locations part of the program may be found in Chapter 5, *Locations*.

Link 4 is for entering your banding information. You can switch back and forth between Table and Details data entry modes by clicking either **Table** or **Details**. Chapter 6, *Entering Banding Data* contains more information on the details of using Bandit to store banding data.

Link 5 is for entering your recapture and other re-encounter information. You can switch back and forth between Table and Details data entry modes by clicking either **Table** or **Details**. Chapter 7, *Entering recapture and other re-encounter data* contains more information on the details of using Bandit to store the data associated with recaptures.

Link 6 contains a series of references that is helpful to understand the various codes and how to use them. Chapter 11, *Reference Tables* has more information on this feature.

To get back to the opening screen, click the word Bandit at the top of the green portion of the screen. You also may navigate to any Bandit screen by using the buttons at the top of the green portion of each screen.

3. Bandit, by default is a complete file of all your data, not a program in which you save and open different files. But if you need to see or work with any subset (a year, a species, etc.) of your data, you can do this with the **Find** option. Chapter 9, *Find Mode* has more information on how to use this feature.

4. Submit your data to the BBL/BBO by clicking either on the words "**Submit New Data**" or "**Submit Modified Data**" on the Bands screen. A file will be created of any bands without errors (or with errors bypassed) you have added or modified since the last time you submitted data and placed in your "My Documents" ("Documents" in Mac) folder. Additionally, if you have an email client installed, an email with this file attached will automatically be generated and will appear in your computer's email program. More information on the data submission process is available in Chapter 8, *Data Submission*.

5. Reports are available from the Bands Table and Details screens. Select the report you want from the drop-down menu and click the **Show/Print Report** button. Reports can be sent directly to the printer (to be printed or saved as PDF) or saved in Excel format. See Chapter 10, *Reports*, for more information.

6. Methods for importing data into Bandit and exporting data from Bandit are in Chapter 12, *Importing and Exporting*.

Chapter 2. Installing Bandit

2.1. System Requirements

Bandit requires a computer equipped with either a Windows or Macintosh operating system.

2.1.1. Windows

- Operating System: Windows XP, Windows Vista, Windows 7.

- Memory: Minimum 256MB RAM (Minimum 1GB RAM for Windows Vista and Windows 7).

- Disk Space: Minimum 500MB free.

> **Note**
>
> To be able to send automatic email from Bandit you must have:
>
> 1. an internet connection.
>
> 2. a [mail] section in the Win.ini file.
>
> 3. Microsoft Exchange, Microsoft Outlook, Microsoft Outlook Express or Eudora installed, configured properly, and opened.

2.1.2. Macintosh

- Operating System: Macintosh OS X 10.5.7, or later.

- Memory: Minimum 512MB RAM (Minimum 1GB RAM for Mac OS X v10.6)

- Disk Space: Minimum 500MB free.

> **Note**
>
> To be able to send automatic email out of Bandit application, you must have:
>
> 1. an internet connection.
>
> 2. Mac OS X Mail or Microsoft Entourage installed to send email with FileMaker Pro.
>
> 3. Internet system preferences configured for use with one of the supported mail applications. If you use Eudora 5, start the Eudora application before using Bandit.

2.2. Obtaining Bandit Software

You may download Bandit from the Bird Banding Lab website, http://www.pwrc.usgs.gov/BBL/resources/bandit/Software/index.html. Version 3 of Bandit will not work on Windows systems previous to XP. If you are using an older version of Windows or Mac, you must download the appropriate version of Bandit v. 2.01. If you cannot download from the web, you can request a copy of the CD ROM from

the Bird Banding Lab (specify your operating system in the request). If you received the software on a CD ROM from the Bird Banding Lab, insert the CD ROM into your CD drive and follow the installation instructions on the CD ROM.

Tip

For dial up connections it might take a fairly long time to download the software.

2.3. Installation

Bandit comes with an installer program that will guide you through the installation of the program.

Tip

If you need administrative access to install programs on your computer, you should request that the installation be performed by your system administrator.

2.3.1. Installing on Windows

Double-click the installer to begin the process. The installer will ask where you want to install the program. The default is under C drive for new installation, and previously installed directory for upgrade installation. You can install the program somewhere else if you have limited space on your default hard drive. Click **Next** to go to the next screen.

Tip

For Windows Vista, it is recommended not to install Bandit under Program Files, use C drive (For example C:\Bandit).

Tip

If you manage data for more than one banding permit, you will need an installation of Bandit for each permit. You may want to make each Bandit folder easily identifiable by adding an appropriate permit number, e.g. Bandit55555.

The installer will put the program into a folder available under your **Start** menu. The default name for this folder is `Bandit`. You can give it a different name here. Click **Next** to go to the next screen.

You can have the installer create icons on the Desktop or in the Quick Launch bar at the bottom of the screen so you can get to the program without having to go back to the **Start** menu. If you want these icons, check the appropriate boxes. Then click **Next** to go to the next screen.

The program will show you a summary of the installation to make sure you want to proceed. Click the **Install** button to continue with the installation.

Note

You will also be given the opportunity of installing a utility program called PDFCreator. PDFCreator is used by Bandit to enable saving reports in Adobe Portable Document Format (PDF). This is useful for saving your reports for later viewing or printing or for emailing the report to someone else. If you do not install PDFCreator, Bandit will not be able to

save reports in PDF format. You may see error messages generated by PDFCreator during installation; they may be disregarded.

The installer will extract all of the files and store them on your computer. Finally, you will see a screen indicating the installation was successful and asking you if you want to run Bandit. Click **Finish** to launch the program.

2.3.2. Installing on Macintosh OS X

You may need to know the name and password of a user that has administrative privileges on your computer. If this is your own machine, it is just your regular login name and password. If you don't know the name and password of a user with administrative privileges on your computer, you should request that the installation be performed by your system administrator. Alternatively, you can avoid this requirement by installing the software in a location other than the Applications folder.

If you downloaded the software directly from the BBL, first change the file extension on the Bandit installer file from `.bin` to `.dmg`. Click directly on the name under the icon and type `.dmg` instead of `.bin`. The icon will change to allow you to open the file. Double-click the icon and the system will check the disk image, then open a new window showing the contents of the disk image. Double-click the installer icon to begin the process. The installer will bring up a welcome screen. Click **Continue** to go to the next screen.

The installer will ask you to select the destination volume where Bandit will be installed. Typically you will only have one hard disk and it will have a green arrow on it, indicating this is the selected drive. If you have more than one drive and you want to store the software on one of the other drives, click on the drive and the green arrow will move to this selected drive. Click **Continue** to go to the next screen, then click **Install**.

Next the installer will ask where you want to install the program. By default, the program installs the software into a folder called **Bandit** in your **Applications** folder. You can install the program somewhere else if you have limited space on your main drive.

The installer installs the software and you will see a screen indicating the installation was successful. Click the **Close** button to exit the installer.

Warning

Users need to have full access to the directory where **Bandit** is installed.

2.3.3. Upgrading from an Earlier Version of Bandit

If you are updating from an earlier version of Bandit already installed on your computer, the program will ask if you want to automatically save a backup of your existing data file and reload the data from the backup once the new version of the software has started to run. You will see a pop-up box informing you that the program is going to reload the data from the previous version. If, for some reason, you do not wish to reload the data from the previous version, you can click **Cancel** here. Usually, though, you will want to click **OK** to reload the data from the previous version. After you click **OK** the reload will proceed and you will see a box showing the summary of the reload process. Next, you may see a box showing that the program is updating the values in the Wing and Weight tables. This *patching* process will only change values if they are the same as they were when the original Wing and Weight table was installed. (If you modified values in the Wing and Weight table, those values will not be changed.) See Figure 2.1, "Patch Log". Finally, a box will appear asking if you want to delete the backup file which was created during the installation process. Click **Yes** to delete or **No** to skip.

Figure 2.1. Patch Log
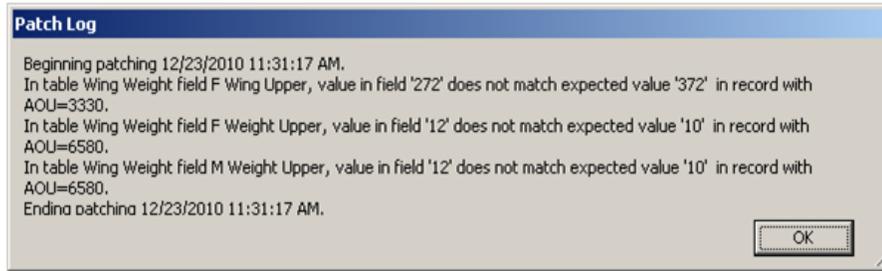
> ## Warning
>
> As mentioned above, the upgrade process automatically saves a backup of your existing data file prior to installation. We recommend, however, that you create your *own* backup using the regular backup facility within Bandit (see Chapter 13, *Bandit Backup File*) prior to performing the upgrade process. Store this backup in a safe place, such as a removable drive, or a CD.

> ## Warning
>
> For Windows Vista save backup prior to upgrade, and use **Restore From Backup** in **File** menu to load data from this backup after upgrade.

2.4. Running Bandit

Once you have successfully installed Bandit onto your computer you can run the software by a variety of methods. In Windows, select the program from the Bandit group in your **Start** menu, double-click the icon for Bandit on your desktop (if you requested one during installation) or single-click the small bird icon in your Quick Launch bar (if you requested one during installation). In Mac, open the Applications folder, find and open the Bandit folder, and drag the bird picture icon for Bandit down to your dock. Then it will always be available for easy execution with a single click of the mouse.

2.4.1. Bandit Opening Screen

When you first launch Bandit, you will see the Bandit opening screen, and a small dialog box will appear asking if you want to save a backup of your current Bandit data file. It is a good idea to save a backup whenever you are going to be making changes to the file, in case you need to return to an earlier version of the database.

Figure 2.2. Bandit Opening Screen
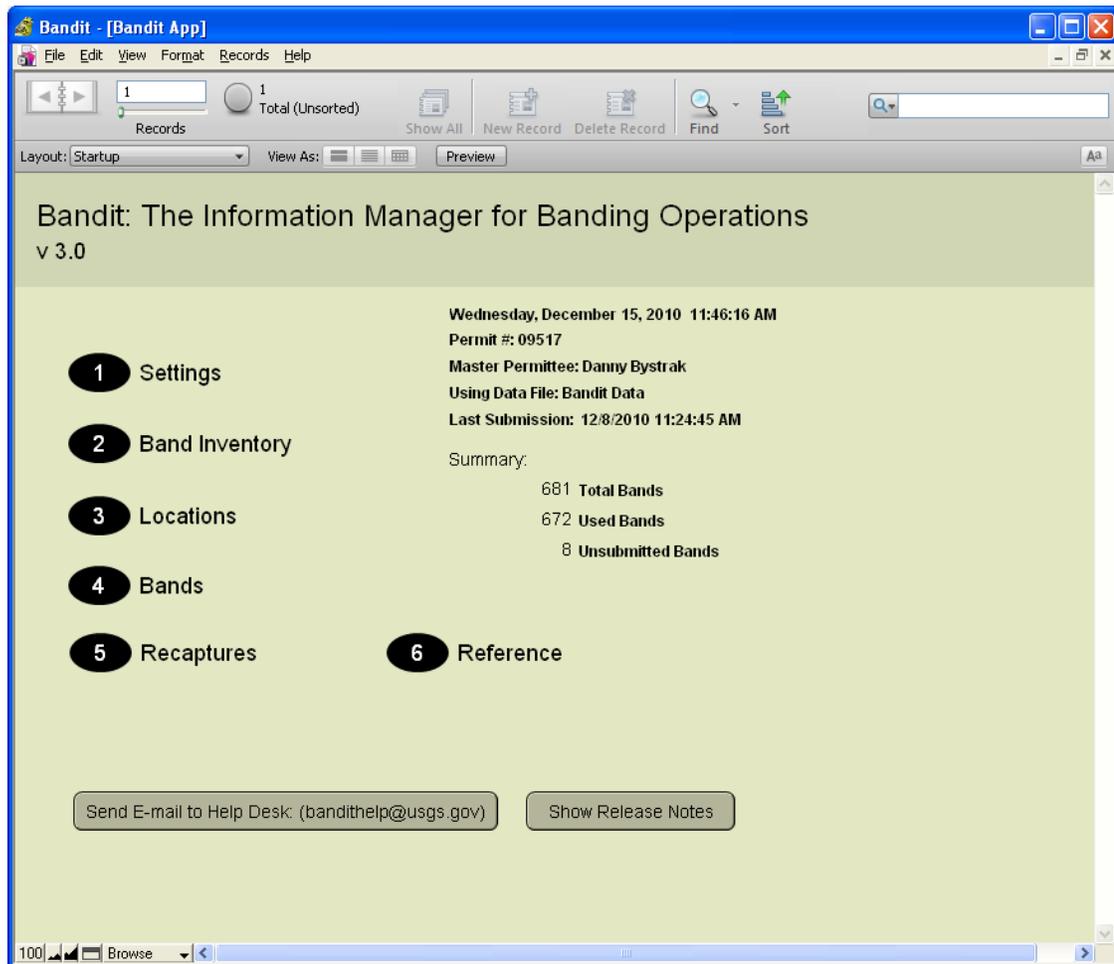
After you have dispatched the Backup dialog box, you will be presented with an opening screen showing six ways of entering the program on the left and a summary of the banding data contained in the Bandit data file on the right. The six ways of entering the program are presented as a numbered list:

Tip

You can place your cursor over any link on this page to see a pop-up box, called a "tool tip" with description of the link.

1. **Settings.** Goes directly to the Settings screen. If this is the first time you are using Bandit, it is very important that you go here first to set your basic settings for using the program. Refer to Chapter 3, *Bandit Settings* for more details.

2. **Inventory.** Goes directly to the Band Inventory screen. If you just received some new bands from the BBL or the BBO, you need to go here to add the bands to your inventory via the Add to Inventory process. If you are importing data from Band Manager, refer to Chapter 12, *Importing and Exporting* to successfully complete this process. Also if you are importing data from another file, Chapter 12 will explain how to do that. Chapter 4, *Band Inventory* has details on the use of the inventory and how to add bands into your inventory.

3. **Locations**. Goes directly to the Locations screen. Refer to Chapter 5, *Locations* for more information.

4. **Bands.** Goes directly to the Bands screen. Refer to Chapter 6, *Entering Banding Data* for more information. Appendix A, *Tips and Shortcuts* contains useful keyboard shortcuts that can make the task of entering your banding data even faster.

5. **Recaptures**. Goes directly to the Recaptures screen. Refer to Chapter 7, *Entering recapture and other re-encounter data* for more information. Appendix A, *Tips and Shortcuts* contains useful keyboard shortcuts that can make the task of entering your recapture data even faster. Refer to Chapter 12, *Importing and Exporting*, if you are importing data from another file.

6. **Reference.** Goes directly to the References screen. Chapter 11, *Reference Tables* has more information on this feature.

Tip

Unlike most other computer applications you have encountered, Bandit saves the information you enter automatically whenever you go to another record or screen. Therefore, you never need to click **save** or **append**.

Tip

Navigation between all the screens is possible from any screen without going back to opening screen.

2.4.2. Getting Around

Once past the opening screen, all of the screens in Bandit share a similar layout. For example, Figure 2.3, "Bandit Screen Layout" shows the **Bands Table** View screen, with numbers added to identify the various areas of the screen.

Figure 2.3. Bandit Screen Layout
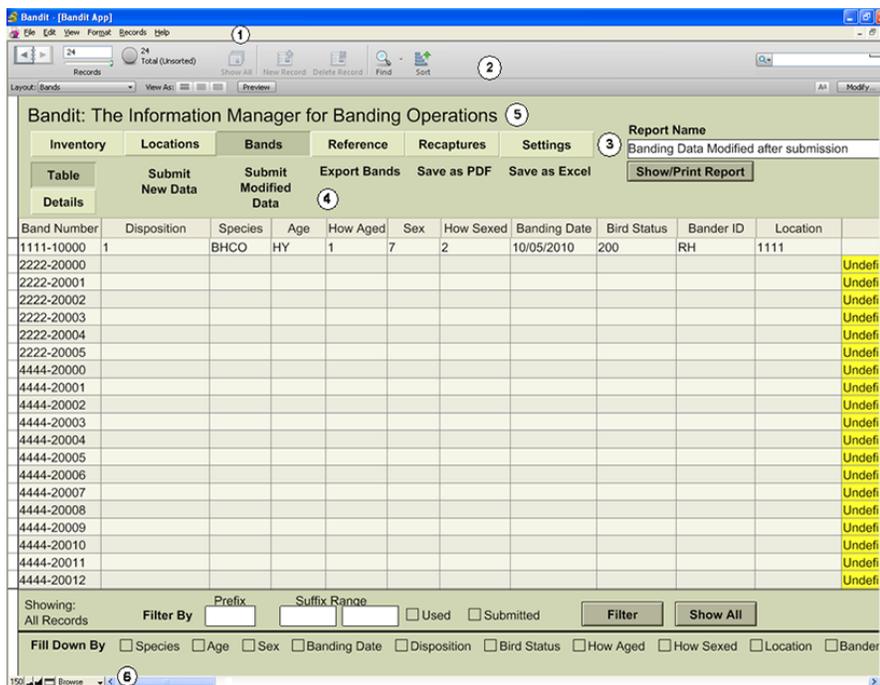
Take a minute or two to look through the menus and familiarize yourself with the layout of the Bandit program. It will pay dividends in the future through increased efficiency and understanding all the features Bandit has to offer.

1. A menu bar appears at the top of the Bandit window (along the top of the screen on Macintosh OS X) and has the usual features of a typical Windows program, including the ability to Exit or Quit the program, found in the File menu, and the Cut, Copy, and Paste functions in the Edit menu. The ability to import and export data can be found in the File menu, and the Records menu has functions for working with the records in the database. There is no Save function in the File menu, because Bandit automatically saves each record as you enter it.

2. A gray navigation panel appears at the top of the **Inventory, Locations, Bands, and Recaptures** windows. It allows you to leaf through your data (while in **Detail** view) as easily as flipping through the pages of a book, and see at a glance how many records are in your file. You may switch to Find mode by clicking on the magnifying glass icon, for searching and filtering the contents of your data. You will also see how many records are in a current found set.

3. The six buttons near the top of the green part of the screen of all screens allow you to switch easily to one of the six sections of the program: Inventory, Locations, Bands, Reference, Recaptures, and Settings.

4. The functions available below these section buttons change depending on which section you are in.

5. If you want to get back to the opening screen, click on the line containing the word Bandit in the green area of any screen. The opening screen summarizes the number of bands in your file and their status.

6. At the bottom left corner of each screen there are 4 boxes. The left one, here containing the value 150, shows the current zoom level (default value is 100). Click on the second box containing the smaller mountain range to zoom out for a big picture view. Click on the third box containing the bigger mountain range to zoom in for a detailed view. Click on the fourth button with the panel icon to toggle hiding or showing the gray navigation panel. The fifth button allows you to switch between Browse, Find and Preview modes.

Chapter 3. Bandit Settings

Note

if this is the first time you are using Bandit, it is imperative that you fill in the fields under the **Bander Info** tab in the **Settings** section. All of the submission functions rely upon having the information completed correctly.

You can navigate to the **Settings** section of Bandit by clicking on the button labeled **1** on the opening screen or by clicking on the **Settings** section button at the top of the green area of any of the other screens.

Figure 3.1. Bandit Bander Info Screen

Once you are inside the **Settings** section, you will see five tabs: **Bander Info**, **Data Entry Preferences**, **Optional Validations**, **Wing & Weight**, and **User Fields**. Each of these tabs has fields to be filled in. The most important tabs are **Bander Info**, which allows you to enter information about the master bander and the sub-banders, and **Data Entry Preferences**, which allows you to choose between alpha and numeric formats for Species, Age and Sex.

To leave the **Settings** section, click on any other section button near the top of the screen. If you allow your mouse to pause over each of these buttons you will see the purpose of each section. You can also click on the word **Bandit** at the top of the green part of the screen to return to the opening screen.

3.1. Bander Info

Note

It is imperative that you fill in the bander information since it will be needed for data submission to correctly identify your data when it is received by BBL or BBO.

Click the **Bander Info** tab to bring up the page where information about the banders can be stored. First, put in the name of the Master Bander (or the station name followed by the name of the responsible individual if you have a station permit) in the **Master Bander** field. Next, in the **Permit Number** field, enter the permit number that was assigned to you or your team by the Bird Banding Lab or the Canadian Bird Banding Office. Choose the country where data are to be submitted by clicking the appropriate radio button.

Warning

If you hold a U.S. permit, click in the **U.S.** radio button and if you hold a Canadian permit, click in the **Canada** radio button.

Under **Choose Email Option**, click appropriate radio button to specify your email client settings. If you choose Email Client Established, at the time of submission Bandit will try to open the client and automatically attach the submission file and send the email. The client must be open for this to work. If you are using webmail and do not have an email client established, you should choose the No Email Client Established radio button. It will be necessary to manually send an email with the submission file(s) attached. The program will give you a warning telling you which file, where to send the email and what the subject line should be.

Warning

If you have problems during data submission (Bandit crash), your selection should probably be **No Email Client Established**.

Next, begin filling in the table below these entries by first clicking on the **Add** button. Be sure to enter the Master Permit holder's name as well as any other banders as this table will be used during the data entry step to fill in the initials of the bander who actually banded each particular bird. Begin by typing in the Master Bander's initials, the name of the Master Bander and entering the email address and phone number in the appropriate fields (if desired). Only the initials (or other unique identifier) is required. In the Sub ID field you may put in a sub-bander's Alpha ID (as assigned by the BBL or BBO), but leave this field blank for the master bander, or any other banders who are not officially listed as subs. None of the information in this table is transmitted to the BBL or BBO. It is for your own convenience to maintain information about the banders.

Warning

Inadvertently clicking the **Add** button after you have added the final bander will create a blank line. When you try to leave the screen, you will get an error message. Delete the blank line in the table by clicking on the **Delete** button on the right.

If you wish to delete a bander, click with your cursor anywhere on the row containing the bander you wish to delete and then click the **Delete** button on the right. This will delete the information contained in the entire row of the table.

If you have more entries in the banders table than are visible in the space provided you can scroll through the table using the scroll bar on the right.

Tip

If you have more banders than can be seen on the screen and you want to print out a list of all of them, click on the Export button to the right of the table. An **Export Records File** dialog box will appear. Choose where you wish to save the file and type the name of the file in the appropriate box and choose the type of file you would like to save in the Save as Type box. (Choose `.tab` for a tab-delimited table, for example.) Next, in the **Specify Field Order for Export** dialog box, choose which fields you wish to export and in what order. Then, click the **Export** button and a file will be created that you can print or email.

3.2. Data Entry Preferences

Clicking on the Data Entry Preferences tab will bring up a page with information about code formats, language, and measuring units used by Bandit.

In this section you have the option to select the code format for entering Species, Bird Age, and Bird Sex codes. The code formats available are alpha and numeric. Upon first installation, the defaults will be Numeric, Numeric, Alpha in that order. To select a code format click the appropriate radio button. When a format is changed, the program will rebuild the related lookup table to correspond to the selection you have chosen and then go through the Band and Recapture tables, changing the codes in all of the records to match. Measurement units for Weight and Length are grams and mm, respectively, and cannot be changed.

Warning

If you are importing banding data, the code formats in the import file must match the code formats set in Bandit. Band Manager export files always use numeric coding, even if you used the alpha option in the program.

Warning

It is best to settle on your preferences when you start and never change them. If you do change them later, all records will be marked as "Modified", and this will confuse things later if you intend to actually submit modified data.

Figure 3.2. Settings Screen—Data Entry Tab
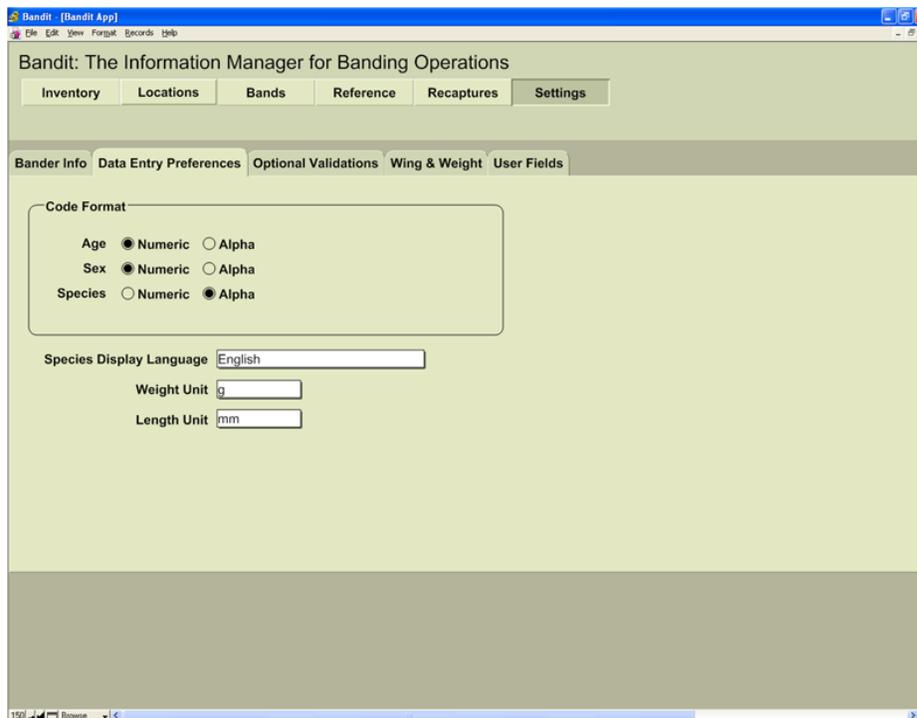
3.3. Optional Validations

Clicking on the **Optional Validations** tab will bring up a page with a few settings controlling the way validations are performed on the banding data. You have the ability to disable/enable Wing Chord, Weight and **Time Check**. If the **Wing Chord** and **Weight Check** boxes are clicked, species for which there are data in the Wing and Weight table are run through validations to help ensure you have correctly recorded or entered these measurements. The **Time Check** only compares capture time to weight time, and does not verify chronological order within the Time fields. Any discrepancies encountered during the check will appear in the **Additional Errors** field. All other validations are performed automatically and are not dependent on user preferences.

3.4. Wing & Weight

Clicking on the Wing & Weight tab brings up a table showing minimum and maximum wing chord and bird weight by sex for each species for which data were available in the Identification *Guide to North American Birds, Part 1* by Peter Pyle. This table is used to validate the wing chord and weight information when those validations are selected. (See Section 3.3, "Optional Validations".) Measurements that fail this check will appear in the field Additional Errors. This check is intended to help catch recording or data entry errors. The values in the table are incomplete, but we have provided the capability of editing them. If you wish, you can add values for species we did not include or change the values for species if they differ in your geographic area. Use the **Find** feature to find a species of interest by typing in a name, Alpha Code, or numeric Species Code and clicking the **Find** button. You can type a partial value and the entries that match will be returned. For example, typing "Sparrow" will return all birds with "Sparrow" in their

name. Click the **Show All** button to return to the original entire list. Finally, you can click the **Export** button to export the wing and weight values. See Chapter 12, *Importing and Exporting* for detailed instructions on the use of this feature and the file formats supported.

3.5. User Fields

Click on the User Fields tab to enter the labels for up to 5 additional fields you want to associate with your banding/recapture records. These fields are to be used for information that is meaningful to you, but not likely to affect any of the codes that are stored in the main BBL database, or be of use to future data-users. For example, you might wish to note birds that escaped before all measurements were taken,or enter certain field notes associated with bandings. Each of the 5 fields can contain an arbitrary amount of information. Chapter 6, *Entering Banding Data* contains additional details on the use of this feature.

Figure 3.3. Bandit User Fields Settings Screen
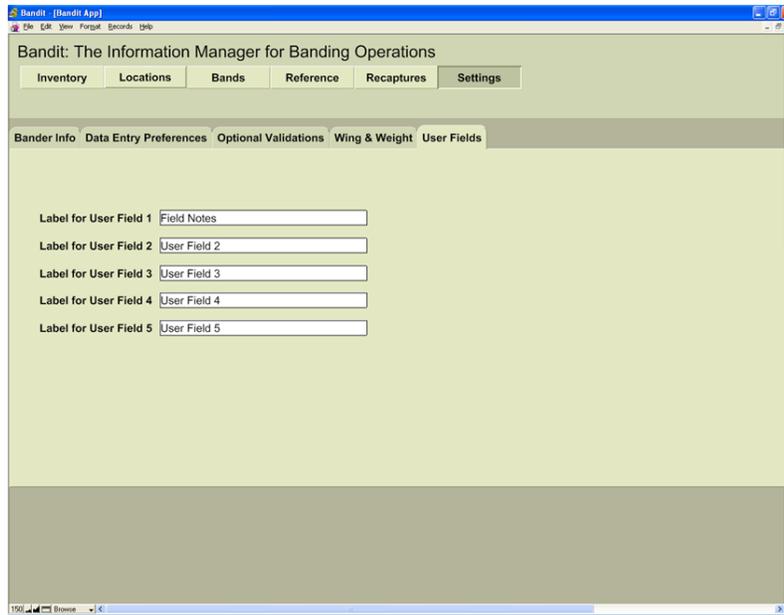
3.6. Other Settings

There is one additional setting to turn the automatic spell checker on or off in Bandit (default is off). Find this option by selecting **File Options** from the **File** menu. The spell checker is most useful in finding spelling errors in the **Remarks** field. You can choose for errors to show up with a special colored underline familiar to users of Microsoft Word. Visual and audio cues are also available. For Bandit, though, users may find the spell checker unnecessary and intrusive.

Chapter 4. Band Inventory

Note

You must enter band spans in the inventory before you can enter any banding data.

The Band Inventory in Bandit contains information about the strings of bands you have received from the BBL or BBO. These bands are issued in strings having contiguous numbers spanning a range. One string or contiguous strings of bands is commonly referred to as a band span.

You can navigate to the Band Inventory section of Bandit in one of two ways: Click on the button labeled **2** on the opening screen, or click the **Inventory** button at the top of any of the other screens.

Figure 4.1. Bandit Band Inventory Screen

The Band Inventory screen allows you to add bands to your inventory and edit the information about the band spans in your inventory. To add band spans to your inventory, go to the Inventory page and click on the words Add to Inventory above the table. This will bring up a new window with fields for entering the band number prefix, the starting and ending numbers of the suffix, the band size and type, the date you received the bands, and a place for remarks.

You can also remove spans from the inventory, but understand that all banding records for those bands will be removed also. The function for removing band spans in under **Records** in the top menu bar. Also under **Records** is a function for removing unused bands from the inventory.

Bands can also be imported into the inventory, but only as complete lists of bands, not as spans. This option is under **File** in the top menu bar. For more details on importing, see Chapter 12, *Importing and Exporting*.

There are two more functions **Mark as Submitted** and **Mark as Not Submitted** under the **Records** menu. These functions can be used to reset submission timestamps for all banding records in the current span.

⚠ **Caution**

Mark as Submitted and **Mark as Not Submitted** functions should be used with caution because they overwrite original submission timestamps.

At the bottom of the Inventory screen you will see the total bands in the current list of band spans.

🖊 **Note**

If you are entering or importing older bands Bandit will use the current date for **Received Date**. You must be sure to change that date to one that is before any dates that you used those bands.

Figure 4.2. Add to Inventory Screen
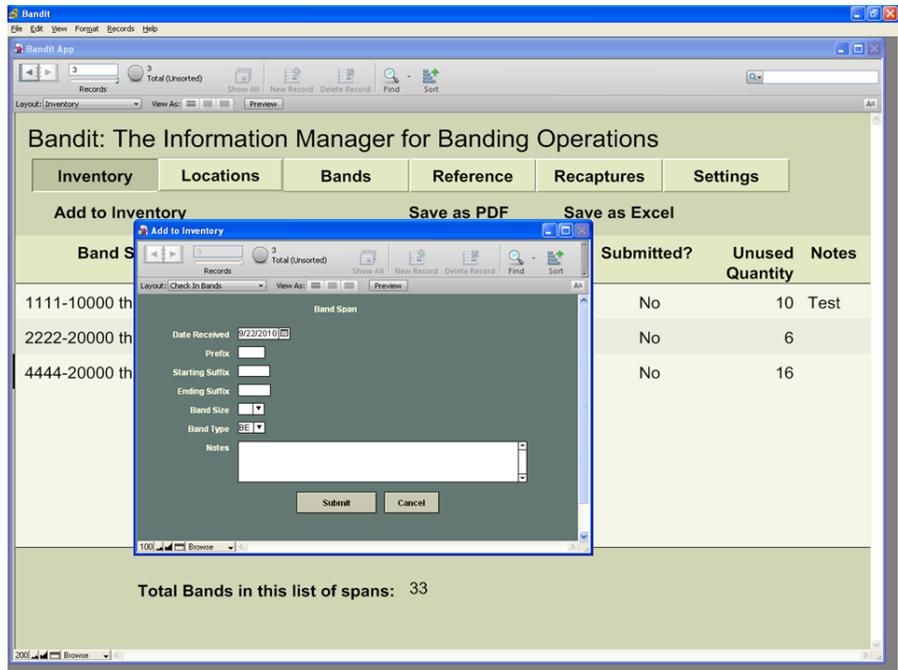
First, enter the date you received the bands from the BBL/BBO or from another bander who transferred the bands to you. You can do this in one of two ways. You can click on the calendar icon at the far right of the **Date Received** field and scroll to the correct month and year you received the bands and then just click on the date. You may also just click in the date field and type the date. If you do this, be sure to use the format mm/dd/yyyy. After entering the date, Bandit will advance to the **Prefix** field. Enter the 4-digit prefix (use a zero as the first number if you have bands with 3-digit prefixes) of the band string you received and press the Tab key. Next, enter the 5-digit suffix of the first band in your span and press the Tab key. Then, in the next field, enter the 5-digit suffix of the last band in your span. *Enter the prefix and the two suffix values carefully. You will not be able to make changes to these fields later without deleting the span.* The other fields can be modified later, if necessary.

🖊 **Note**

A complete string of bands have suffix numbers starting at 00001 and ending with 00000. (00000 really means 100,000 here; the 1 is "silent".) So if you have a span containing a suffix with all zeros, it is always the *ending* suffix.

Press the Tab key to enter the **Band Size**, and enter the band size. You can do this by selecting it from the drop down menu or by typing it. If the number entered in this box does not correspond to the last digit in the prefix, a pop up box will appear to warn you. Bandit will move you forward to the **Band Type** field, from which you may select the appropriate band type from a drop down menu. You can press the Tab key and enter a remark in the **Notes** field for that particular band span, if necessary. Finally, click the **Add** button at the bottom of the window to add the span. Bandit will create a blank banding record for each of the bands within the span and automatically link them to the band span in inventory.

Note

Depending on how many bands are in the band span, the process of adding the bands to your inventory can take a while to finish.

If you entered a band span erroneously, are transferring bands to another bander, or returning bands to your coordinator at the end of a banding season, you may want to remove those bands from your inventory. To remove bands from inventory you have two options: remove the whole span or remove unused bands from the span. To remove a whole span, select the span you want to remove by clicking with your cursor inside the line of the desired span on the Inventory page. Then click on the **Records** menu at the top of the page and select **Delete Inventory Record** from the menu. A message will appear to confirm you really want to remove the whole span, pointing out how many of the bands in the span are used, and warning that the banding data will be removed as well. You may cancel at this point, or proceed, in which case all related banding data will be removed from the band table and saved in a `.xls` file in your **My Documents** folder (**Documents** folder on the Mac). For example, if you removed the bands 1234-00001 through 1234-00024 on January 12, 2007, the name of the saved file is Bandit_Bands_123400001_123400024_20070112.xls. (In case if you were using "Remove Unused Bands from Inventory Record" function the file name would be Unused_Bands_123400001_123400024_20070112.xls).

To remove unused bands from a span, select the span you want to modify by clicking with your cursor inside the line of the desired span. Then click on the **Records** menu at the top of the page and select **Remove Unused Bands from Inventory Record** from the menu. A message will appear stating how many unused bands will be removed. You may cancel or proceed. If you proceed, the band span inventory record will be split, to leave only the used bands. The **Unused Bands Removed Report** will appear on your screen. You may print the report (using the tool **Print** icon) and then click the blue **Continue** in the upper right portion of the screen to resume using the program.

To leave the Band Inventory section, click on one of the other Section buttons near the top of the screen. If you allow your mouse to pause over each of these buttons you will see the purpose of each section. You can also click on the name **Bandit** at the top of the screen to return to the opening screen. Typically, after entering spans into the band inventory you are ready to enter banding information. If so, just click the **Bands** button near the top of the screen to go to the data entry screen.

Note

If you imported bands from Band Manager or any other file, the **date received** will be the date you performed the inventory process, not the date received in Band Manager or the other file. If there are data associated with these bands that will also be imported, you must change the date received to be a date earlier than the first bird banded using these bands. To do this, go to the Inventory page, click on the date in the line containing the imported bands and simply retype a date that is earlier than any banding date for birds associated with these bands. Everything else can remain the same. Repeat this in each span, or use "Replace Field Contents" under Records to fill all inventory records.

Tip

You can sort the records in your inventory by using **Sort Records...** in the **Records** menu or Sort icon at the top. You can also use **Find** mode to select the spans you want to work with. For more information about Find mode, see Chapter 9, *Find Mode*.

Chapter 5. Locations

An important characteristic of the banding and recapture data submitted to the BBL/BBO is the quality of the banding location data attached to the record. In the past, due to limited computer memory and storage, the BBL/BBO stored locations only with 10-minute block precision in latitude and longitude. Because of advances in computer technologies, the precision of banding locations can be significantly enhanced. In Bandit, we have taken the opportunity to permit the storage and submission of banding locations to the nearest second, but if you prefer, you can use 10-minute block precision or 1-minute block precision.

In version 3.0 of Bandit the ability to see each location record in **Table** or **Detail** view was added. Now the **Locations** screen is actually a pair of screens showing two views (or modes) of the same information. The **Table** view shows a spreadsheet-like table of the information in the location records. You can use this view to see a number of locations at a glance and rapidly enter a large amount of data, but only a limited number of fields are visible without using the scroll bar at the bottom of the window. This is also the preferred view for sorting locations or performing **Finds**. The **Details** view allows you to see all of the fields in a particular location record at once, but only for one record at a time. This view can be easily navigated by using the light gray navigation panel which appears at the top of the screen. Using this panel you can flip forwards and backwards through the location records or jump directly to a particular location record. It is possible to search and sort locations records by any field.

All of the banding locations are stored in a table that can be easily accessed at any time by clicking on the **Locations** button at the top of the green part of the screen. The table has fields for a short identifier **Location ID** (which must be unique), **Country**, **State** (Province in Canada), **County, Nearest Place/Town** (this can be a town or a notable place like a mountain peak, within the country/state/county selected), **Miles** and **Direction** from that place, **Location Description** (street address preferred, or any description that helps you keep locations straight), fields for **Coordinate Precision**, **Latitude** and **Longitude** coordinates (in degrees, minutes, seconds, and hemisphere). The fields **Valid?** and **Bands Count,** are used by the system to provide feedback on the locations in the table. **Valid?** will have the value Yes if the location record has passed all validations and the coordinates provided match the bounding box outline for the Country and State provided. If the value in **Valid?** is No, you can place your cursor over the box containing the No to see what validations this location did not pass. The errors will appear in a pop-up box, called a "tool tip" in the **Table** view, or in the **Errors** field in a Details view. **Band Count** shows how many birds have been banded at a particular location. **Recapture Count** shows how many recaptures are associated with this location.

Tip

If you are banding outside the U.S., State and **County** are placeholder names for the 1st and 2nd administrative divisions of the country.

Tip

For any location that has errors, all associated banding records will show errors, until those errors are fixed.

5.1. Location Screen—Table View

The **Table** View presents the location data in much the same way as it would appear in a spreadsheet. Like a spreadsheet you can rapidly enter information and use other keyboard commands to skip to the next and previous fields, duplicate information in successive records, jump to the first field in the table, etc.

Figure 5.1. Locations Table View Screen
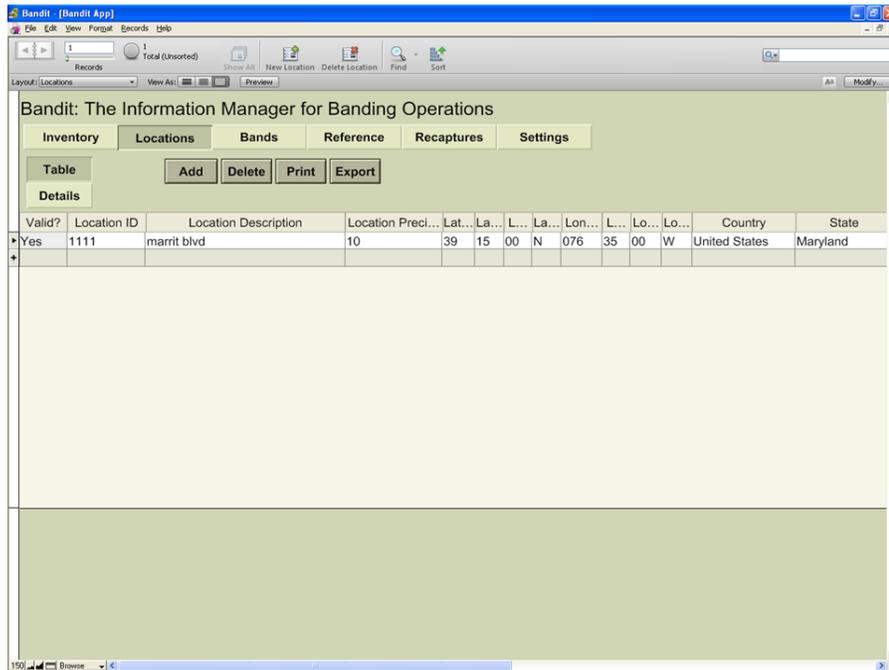
5.1.1. Resizing and Repositioning Columns

In the **Table** view, Bandit allows you to set the relative position and width of each column. Once you set the widths and positions, the columns will remain the way you set them through each successive use of the program, until you change them again (or upgrade to new version). To set the width of a column, position the cursor between two column headings. A double-headed arrow cursor will appear. Click and drag the cursor to the left to make the column smaller and right to make the column larger. To reposition a column, click and drag the column heading to a new location to the right or left. A dark line will appear to show you the position you are dragging to as you drag the column. When you get the column where you want it, let go of the mouse button. The column will move in place.

The other way to rearrange columns is to use the **Modify** button in the upper right part of the screen. This button allows you to modify **Table** view by showing or hiding columns and changing the order of the columns. If a checkbox is checked – the column is shown in the view. To hide a column simply uncheck it. To change the order of the columns, you can drag and drop any column up or down in this pop-up window (point to double arrow symbol , when cursor changes, left mouse click and while holding the key, start dragging, release the mouse key to drop the column in the appropriate place). See Figure 5.2, "Modify Table View"

Figure 5.2. Modify Table View
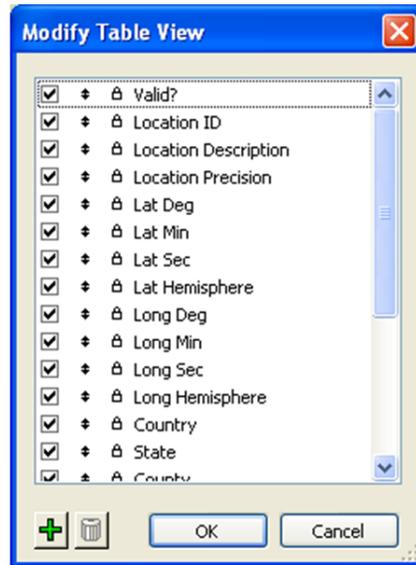
Another way to get to modify **Table** view is to Right mouse click on any column header, choose Modify **Table** View from pop-up menu as shown in Figure 5.3, "Column Header popup menu"

Figure 5.3. Column Header popup menu
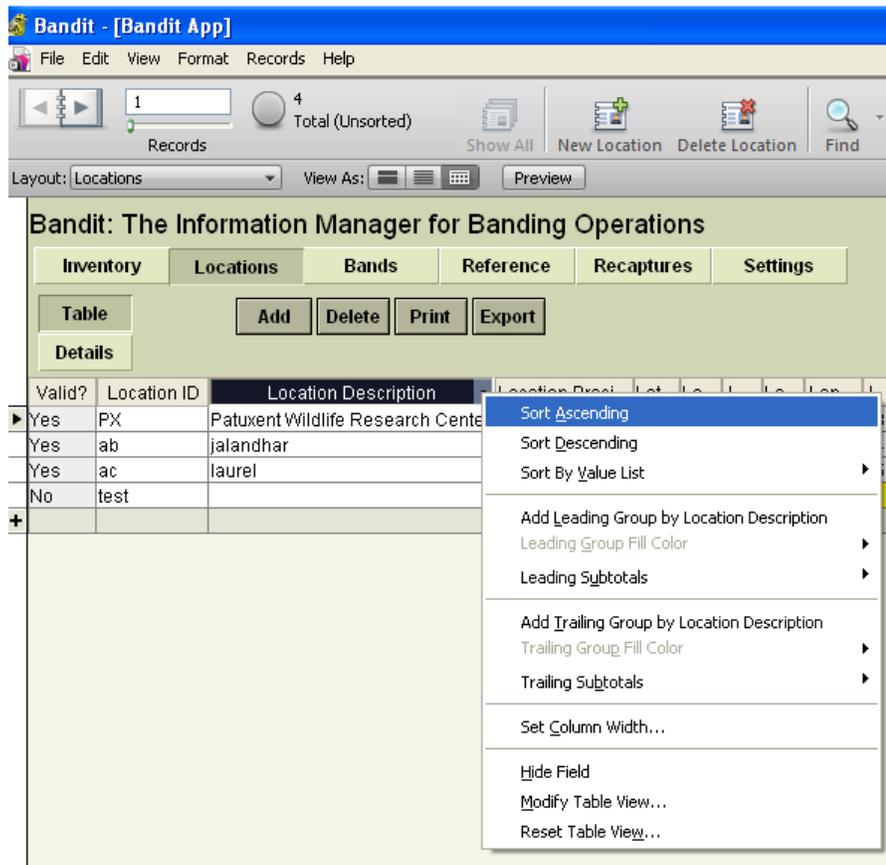
5.1.2. Sorting Location Records by Columns

Most of the time when you are entering data you will want to see the locations records sorted in some order. You can sort location records on any field by clicking on the column header. Click once to sort in ascending order. Click again to sort in descending order. Click on another column header to sort the records based on the value in that field. You can also sort records by using **Sort Records** in the **Records** menu at the top of the screen. It can sort by multiple columns.

5.1.3. Entering Location Data in Table View

To enter location data, click in one of the cells to start. You can see what is supposed to be entered into a particular column by pausing with your cursor over any cell in a column. The Tab key takes you to the next field. Shift-Tab takes you to the previous field.

Caution

If you click on any cell in the blank line at the bottom of the list (the one with a + on the left) Bandit thinks you are trying to add a location and will not let you leave that page until you either enter data or choose **delete**.

Tip

Using the **Find** function before entering location data helps to focus on those locations you will be using during a session, see Chapter 9, *Find Mode* for information about the way to select records you want to operate on.

5.2. Location Screen—Details View

The Details view of the Locations screen presents the location data as a collection of fields shown as a form, making it easier to see all the fields for the location record at once. Although the screen presents data on only one location at a time, a navigation panel is provided to scroll through the location records (see left portion of the grey area at the top). The Details view also provides a Map feature not available in **Table** view. This feature links to Google Maps and will only function with a high-speed internet connection. It is intended to help you determine the coordinates of your banding location. Once you have located it on the map, you can click the map to show a balloon with the coordinates in it.

By default, **Bandit** enters the **Locations** screen in **Table** view. To switch to **Details** view, click the **Details** button. To switch back to **Table** view, click the **Table** button.

Caution

Depending upon the focus on the screen, the mouse wheel works differently. When you first open this screen, the default is that the mouse wheel scrolls through the different location records on the left of the map. If you use the map, you will find that the mouse wheel becomes a way to zoom in and out on the map.

Figure 5.4. Locations Detail View Screen

Note

Looking for the **Save** item in the **File** menu? Bandit automatically saves data whenever you leave a record or go to another screen so you never have to worry about doing the save yourself.

Four buttons are placed at the top of the table to facilitate maintaining the locations table: **Add**, **Delete**, **Print**, and **Export**.

Add   To add a new location into the locations table, click the Add button. This will create a new empty record. You must populate it with correct data, including a unique identifier for **Location ID**.

Delete   If a location has been entered in error or is not being used it can be deleted. Click anywhere on the row containing the location to be deleted and then click the **Delete** button. The system checks to make sure that there are no banding data with that location in the database. If there are none, the location will be deleted. If there are banding or recapture data at that location, you will not be able to delete it.

Print   Use the **Print** button to print out the locations.

Export   If you are interested in using the location information in another program you can use the **Export** button. The exported locations can be put into a file in a variety of formats. See Chapter 12, *Importing and Exporting* for more details on the formats provided.

To begin entering locations in the Locations **Table** view, click on **Add** at the top of the table. This will create a new empty record. For Location ID enter up to 8 characters to create a *unique* location identifier. It may contain alphabetic and numeric characters. Use the Tab key to navigate through the fields. For **Loc Precision** field there are three options available: the traditional 10-minute block, a more precise 1-minute block, and the capability to enter an *exact (*to the nearest second) location. Each option will have different effects on the **Degrees**, **Minutes**, and **Seconds** entries under **Latitude** and **Longitude**.

Tip

Choose 10-minute block precision if you have multiple banding sites in the same 10-minute block and do not wish to catalog all of the locations separately or you wish to mask the exact location or be less specific about the location of a sensitive species.

Using 1-minute block precision is recommended for an operation like a MAPS station or migration monitoring station, where several mist nets are in a small area. We prefer that you NOT identify each mist net site as an exact location.

Choose Exact Precision if you are only banding at one location or several well-separated locations. Banders at MAPS or migration monitoring stations may also choose to use a centroid for the net locations and use this option, instead of the 1-minute block option.

5.3. Entering locations by different precision options.

5.3.1. Entering Locations with 10-Minute Block Precision

If you choose 10-minute block, a `10` will be entered in the **Loc Precision** column and `00` will automatically be entered into the **Sec** column for both latitude and longitude. Next, enter a location description. The

description *must* be identifiable on most common maps and should include miles and direction from an identifiable landmark such as a town, lake, mountain peak etc.

Note

It is important to describe the location in such a way that it can be relocated by others, because this information will be used for the Certificate of Appreciation provided to a person who may report this bird in the future. A good location description could help them locate (approximately) where the bird was banded using a common map. More importantly, at the BBL, we use the description you provide to confirm the coordinates. Do not put country, state, province, or county into the location description field. There are separate fields for this information.

After entering the description, enter the degrees and minutes of latitude that correspond to the banding location using the closest 10-minute line of latitude to the south. The number entered can only be 0 through 5. You may then press the **Tab** key and a 5 will automatically be inserted as the second digit. If you enter a second digit in the **Minute** field, the program will automatically change it to a 5. This is because you selected 10-minute block as the location precision and Bandit is expecting the value entered to be the center of the 10-minute block. After the latitude, enter the number of degrees and minutes of Longitude to the closest 10-minute line of longitude to the east. The number entered again can only be 0 through 5 and after pressing the **Tab** key, the second digit will automatically default to 5 for the same reason as described in the latitude entry.

Tip

South of the equator, the closest 10-minute line of latitude to the *north* of the banding location should be chosen. Likewise, when banding east of Greenwich, choose the closest 10-minute line of longitude to the *west* of the banding location.

If you selected U.S. for where you want your data to be submitted during the **Bander Info** settings set up, United States will be the default in the **Country** field. If you are entering data for a non-U.S. location, you may change this by selecting the correct country from the drop down list. Typing the first few letters of the country will shorten the list closer to the correct country. Press the **Tab** key again to go to the **State/Prov** field and select the appropriate state or province. If your country is United States, the drop down list will be populated with the U.S. states and again, the list can be shortened by typing the first few letters of the state. If you selected data submission to Canada during the Bander Info settings set up, Canada will be the default country and the drop down list for **State/Prov** will be populated with the Canadian Provinces.

For U.S. locations, a county for the banding location will be required. After selecting United States and the appropriate state, the county list for that state will appear in the drop down list. Select the appropriate county from the list provided and again, typing the first few letters of the county will shorten the list.

If all of the information is correct, a Yes will appear under the **Valid?** column. If a No appears, place your cursor over the No to see why the location is invalid. It may be for one of several reasons: the latitude and longitude are not in the state or country entered, the second digit of the minutes field is not a 5, or the two digits of the seconds field are not zeros. If it is a U.S. location, the county must be entered. Since v 3.0 of Bandit the Nearest Place/Town field is required. Check these fields and ensure they are correct.

5.3.2. Entering Locations with 1-Minute Block Precision

If you choose 1-minute block, a 1 will be entered in the **Loc Precision** column and 30 will automatically be entered into the **Sec** column for both latitude and longitude. Next, enter a location description. The description must be identifiable on most common maps and should include miles and direction from an identifiable landmark such as a town, lake, mountain peak etc.

Note

It is important to describe the location in such a way that it can be relocated by others, because this information will be used for the Certificate of Appreciation provided to a person who may report this bird in the future. A good location description could help them locate (approximately) where the bird was banded using a common map. More importantly, at the BBL, we use the description you provide to confirm the coordinates. Do not put country, state, province, or county into the location description field. There are separate fields for this information.

After entering the description, enter the degrees and minutes of latitude that correspond to the banding location using the closest 1-minute line of latitude to the south. The number of minutes entered should be `00` through `59`. As mentioned above, the seconds will be 30. This is because Bandit is expecting the point to be the center of a 1-minute block. You may then press the Tab key 3 times to tab to the Longitude degrees field. Next, repeat the process for the longitude degrees. Enter the degrees of longitude and press the Tab key to get to the Minute field. Then enter the closest 1-minute line of longitude to the east. The number of minutes entered again should be `00` through `59`. Then press the Tab key 4 times to enter the State/Prov field.

Tip

South of the equator, the closest 1-minute line of latitude to the *north* of the banding location should be chosen. Likewise, when banding east of Greenwich, choose the closest 1-minute line of longitude to the *west* of the banding location.

If you selected U.S. for where you want your data to be submitted during the **Bander Info** settings set up, `United States` will be the default in the **Country** field. If you are entering data for a non-U.S. location, you may change this by selecting the correct country from the drop down list. Typing the first few letters of the country will shorten the list closer to the correct country. Press the **Tab** key again to go to the **State/ Prov** field and select the appropriate state or province. If your country is United States, the drop down list will be populated with the U.S. states and again, the list can be shortened by typing the first few letters of the state. If you selected data submission to Canada during the Bander Info settings set up, `Canada` will be the default country and the drop down list for **State/Prov** will be populated with the Canadian Provinces.

For U.S. locations, a county for the banding location will be required. After selecting `United States` and the appropriate state, the county list for that state will appear in the drop down list. Select the appropriate county from the list provided and again, typing the first few letters of the county will shorten the list.

If all of the information is correct, a `Yes` will appear under the **Valid?** column. If a `No` appears, place your cursor over the `No` to see why the location is invalid. It may be for one of several reasons: the latitude and longitude are not in the state or country entered, the minutes field is not in the range `00` through `59`, or the two digits of the seconds field are not `30`. If it is a U.S. location, the county must be entered. Check these fields and ensure they are correct.

5.3.3. Entering Locations with Exact Precision

If you choose Exact from the Loc Precision drop down menu, a `0` will be entered in the Loc Precision column and you will be required to fill in the exact degrees, minutes, and seconds in both the latitude and longitude columns. Next, enter a location description. The description must be identifiable on most common maps and should include miles and direction from an identifiable landmark such as a town, lake, mountain peak etc.

Note

It is important to describe the location in such a way that it can be relocated by others, because this information will be used for the Certificate of Appreciation provided to a person

who may report this bird in the future. A good location description could help them locate (approximately) where the bird was banded using a common map. More importantly, at the BBL, we use the description you provide to confirm the coordinates. Do not put country, state, province, or county into the location description field. There are separate fields for this information.

After entering the description, enter the degrees, minutes, and seconds of latitude that correspond to the banding location. The degrees entered should be in the range (longitude: 0-180, latitude 0-90). Minutes should be in the range 0-59, Seconds should be in the range 0-59.

Chapter 6. Entering Banding Data

Clicking on Link **4** on the opening screen or clicking on the **Bands** button on one of the other screens will bring up the screen for entering banding data. This is actually a pair of screens showing two views (or modes) of the same information. The **Table** view shows a spreadsheet-like table of the information in the banding records. You can use this view to see a number of banding records at a glance and rapidly enter a large amount of data, but only a limited number of fields are visible without using the scroll bar at the bottom of the window. The **Details** view allows you to see most of the fields in a particular banding record at once, but only for one record at a time. This view can be easily navigated by using the light gray navigation panel that appears on the top of the screen. Using this panel you can flip forwards and backwards through the banding records or jump directly to a particular banding record.

Figure 6.1. Bandit Bands Table View Screen

By default, **Bandit** always enters the **Bands** screen in **Table** view. To switch to Details view, click the **Details** button. To switch back to **Table** view, click the **Table** button.

> ## Note
>
> Looking for the **Save** item in the **File** menu? Bandit automatically saves data whenever you leave a record or go to another screen so you never have to worry about doing the save yourself.

6.1. Bands Screen—Table View

The **Table** view presents the banding data in much the same way as it would appear in a spreadsheet. Like a spreadsheet you can rapidly enter information and use other keyboard commands to skip to the next and previous fields, duplicate information in successive records, jump to the first field in the table, etc.

6.1.1. Resizing and Repositioning Columns

In the **Table** view, Bandit allows you to set the relative position and width of each column. Once you set the widths and positions, the columns will remain the way you set them through each successive use of the program, until you change them again. To set the width of a column, position the cursor between two column headings. A double-headed arrow cursor will appear. Click and drag the cursor to the left to make the column smaller and right to make the column larger. To reposition a column, click and drag the column heading to a new location to the right or left. A dark line will appear to show you the position you are dragging to as you drag the column to the left or right. When you get the column where you want it, let go of the mouse button. The column will move in place.

Tip

There are 12 fields that are transmitted to the BBL/BBO when you submit data. These fields are **Band Number**, **Disposition**, **Species**, **Age**, **How Aged**, **Sex**, **How Sexed**, **Banding Date**, **Bird Status**, **Location**, **Aux Marker Combined**, and **Remarks**. All of the data in these fields must be error free in order for the data to be submitted. It is therefore recommended that you locate the **Error Text** column, click on the heading, and drag that column so it is immediately to the right of these columns. Any errors in the mandatory data will then be readily visible and can be corrected immediately.

6.1.2. Sorting Banding Data by Columns

Most of the time when you are entering data you will want to see the banding records sorted in band number order. This is the default in Bandit, however, you can sort on any field by clicking on the column header. Click once to sort in ascending order. Click again to sort in descending order. Click on another column header to sort the records based on the value in that field. You can also sort records by using **Sort Records** in the **Records** menu at the top of the screen. It can sort by multiple columns.

6.1.3. Entering Banding Data in Table View

To enter banding data, click in one of the cells to start. You can see what is supposed to be entered into a particular column by pausing with your cursor over any cell in a column. You cannot enter anything into the band number field as that field is pre-populated from the inventory. Pausing over the band number field will give you a summary of information about the band.

Many of the fields have a list of possible values associated with them. When you click in a cell a small triangle will appear. You can click the triangle to bring up the list or type in the value yourself. For coded fields, you may wish to refer to the associated reference table. You may do so at any time by clicking on the **Reference** section button near the top of the green part of the screen. When you return to the Bands section, you will still be in the same place you were when you left the screen.

The Species, Age, and Sex fields can be coded using either alpha or numeric codes. Refer to the Data Entry section in Chapter 3, *Bandit Settings*, for details on how to tell Bandit which coding format you wish to use (and be sure the Settings section is completed prior to entering banding information.)

Many of the fields feature type-ahead completion. As you type, the program looks through the list of possible values and finds the first one that matches what you have typed so far, completing the value. If this is the value you want you can just Tab to the next field. If this is not the value you want, continue typing until the value is matched. The Tab key takes you to the next field. Shift-Tab takes you to the previous field.

Most of the fields are self-explanatory, but **Banding Date** needs extra attention to prevent errors. The banding date must be after the **Received Date** in your inventory. If you imported data from Band Manager or any other file, the received date will be automatically defaulted to the date you imported. If that date isn't changed as described in Chapter 4, *Band Inventory*, you will get Banding Date VS Received Date error.

Tip

Using the **Filter** function before entering banding data helps to focus on those bands you will be using during a session. Select the prefix and the starting and ending suffixes and click the **Filter** button. Only those records will appear in the table. You can return to showing all bands in the table by clicking the **Show All** button. See Section 6.6.1, "Filtering Banding Data" for more information about filtering banding data, and see Chapter 9, *Find Mode* for information about an alternative way to select banding records you want to work with.

6.2. Bands Screen—Details View

The Details view of the Bands screen presents the banding data as a collection of fields shown as a form, making it easier to group related information (such as auxiliary marking). Although the screen presents data on only one band at a time, a navigation panel is provided to scroll through the banding records. The Details view also provides additional features not available in **Table** view for double banding, auxiliary marking, error reporting and bypassing certain errors, reporting recaptures, and more.

Figure 6.2. Bandit Band Details View Screen
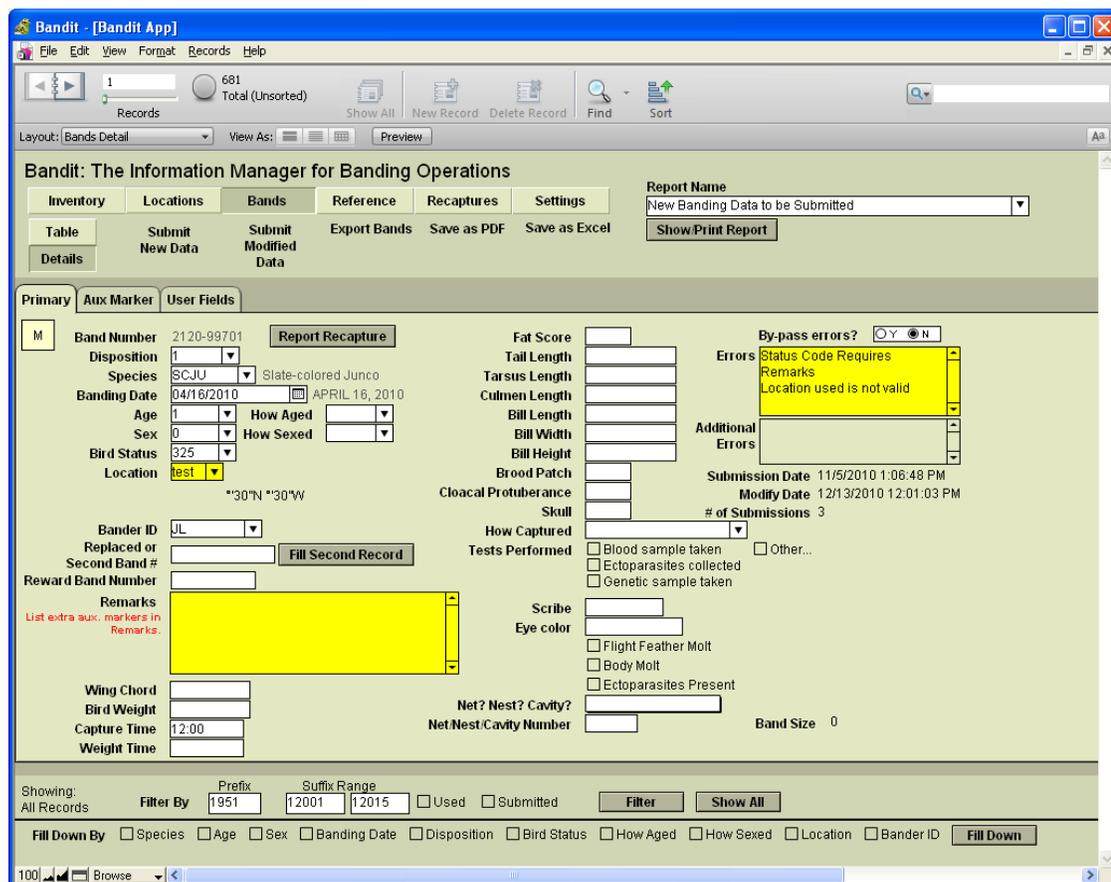
Entering banding data in Details view has all of the features from **Table** view, described in the previous section, including help when you pause over a field, value lists, type-ahead completion, and the use of the Tab key (and Shift-Tab) to jump from one field to the next.

6.2.1. Using the Navigation Panel

The Details view provides a gray navigation panel at the top of the screen. The navigation panel includes a small **book** icon to flip forward (right-hand page) or backward (left-hand page) through **pages**. Use the slider below the book to rapidly scroll ahead or back in the book of records.

6.2.2. Entering Auxiliary Marker Data

The Details view has a tab named **Aux Marker** which is for entering auxiliary marker data associated with a bird. First choose a marker type from the drop-down list in the **Aux Marker Type** field. If the auxiliary marker contains a code, click on the circle with **Y** under **Is Aux Marker Coded?** and fill out the left-hand side of the screen, indicating the actual code, the color of the band, and the color of the code. If the bird is marked by a sequence of uncoded colored bands on one or both legs, click on the circle with **N** under **Is Aux Marker Coded?** and fill out the right-hand side of the screen, choosing the colors for the sequence of bands as appropriate. The **Remarks** field is repeated here, making it easy to add explanatory remarks.

Figure 6.3. Aux Marker tab for a coded marker

Figure 6.4. Aux Marker for a Sequence of Uncoded Colored Bands

The **Aux Marker Combined** field is automatically generated from the rest of the information on the screen. It summarizes the information into a single field. This is the field that is submitted to BBL/BBO.

Note

The Aux Marker page in Bandit is a work in progress, and currently only accommodates relatively simple auxiliary marking conditions. If the bird has more than one type of marker, one of which is coded, describe only the coded one and mention the other(s) in remarks. In this case, you would set the **Aux Marker Type** field to match the type of the coded marker. In any combination of markers, the default one to be reported here is the one most likely to be seen and reported by the public.

6.2.3. Entering Data for Double Banded Birds

If your banding permit authorization allows it, the Details view makes it easy to add data for double banding birds. First, make sure the **Disposition** code associated with the band is D. Fill in the remaining data fields

and then, in the field **Second Band Number**, type the band number for the other band. Then click the button next to the field labeled **Fill Second Record**. Bandit will copy the data from the current banding record into the record for the second band number, changing the **Disposition** code to S and setting the **Second Band Number** field to the starting band number.

> ### Note
>
> Double-banding of birds can only be done with permission from the appropriate Banding Office. It is preferred that this be done with two separate strings, rather than adding adjacent band numbers to the same bird. Be consistent: If you use two strings of bands, one string should all have Disposition code set to D and other to S. If one string is used, odd numbers may be set to D and even to S.

6.2.4. Entering Replaced Bands

From time to time, it is necessary or desirable to replace a band on a bird. Often this is because the band is too worn to be read or is close to being that worn. If you do replace a band, use the **Replaced** or **Second Band #** field to enter the REPLACED band. If the number can't be read completely, fill the missing numbers with question marks. The unreadable band must be sent to the BBL or BBO for etching. It is extremely important that each band that is sent has the replacement number associated with it. Recommended is a piece of masking tape on the back of the flattened band with the replacement number on it.

Occasionally a bird is captured with an auxiliary marker but no Federal leg band. In this case, if you know the band number that was originally on the bird, use it and explain in Remarks. If you do not know the original band number, you can put the auxiliary marker code in the REPLACED field and explain in Remarks. It may be possible to determine the original band at the BBL or BBO.

6.2.5. Reporting Recaptures

If you want to record the recapture of a bird you banded previously, click the button next to the band number labeled **Report Recapture**. A new recapture record will be created and you will automatically be switched to the Recapture function. See Chapter 7, *Entering recapture and other re-encounter data* for complete details on recording recaptures.

6.3. Error Checking

Bandit automatically and transparently checks the banding data using a variety of validation checks to ensure the data are coded correctly and the fields are internally consistent. Any fields that fail these checks are considered **errors**. You can see the errors Bandit has identified by looking at the **Error** field in the Details view or the **Error Text** column in the **Table** view. Where possible, fields with erroneous or inconsistent data are highlighted in yellow. Also, the field containing the error text will be highlighted in yellow if there are non-bypassable errors in the record. Refer to Appendix C, *Data Editing Error Messages* for a complete description of the errors that may occur and how to correct them. Some less-critical errors may be bypassed, allowing the banding record to be submitted during the data submission process. Other errors may be bypassed after appropriate remarks are entered. For example, the `Bad Size` error can be bypassed if an explanatory remark is added to the **Remarks** field indicating why a different size band was used. When you click `Y` in the **Bypass Error** field, the error message will still be visible, but the record will be submitted during the data submission process. If you try to bypass errors and Bandit does not allow it, this is because, in addition to the bypassable error, one or more errors in the record cannot be bypassed. Records with errors that cannot be bypassed and records that have errors that can be bypassed but **Bypass Error** was not set to `Y` *will not* be sent during the data submission process.

Errors that show up in the **Error** field (Details view) or **Error Text** field (**Table** view) *must* either be corrected or bypassed for the data to be submitted. Errors that show up in the **Additional Errors** field of the Table or Details view are informational only and are associated with fields that are not submitted. Errors in wing chord, weight, and time appear here. These **Additional Errors** do not need to be bypassed in order for the record to be submitted.

6.4. Using the Remarks Field

Associated with each banding record is a Remarks field which is useful in several situations. Add an explanatory remark whenever you bypass an error, indicating why the error does not apply to this record. Add a remark as necessary for special auxiliary marking situations not covered by the capabilities of the auxiliary marker fields. You can add any other information you want the banding office to be aware of. Keep in mind that only the first 250 characters of the Remarks field are submitted to the BBL/BBO. If you wish to keep other detailed information associated with a particular banding that is not sent to the BBL/BBO, use one of the user-defined fields.

Note

The Band Manager program had a remarks field that applied to all 100 records in a band span. In Bandit, each banding record has its own remarks. If the remark should apply to several bands, use the ditto feature (see Appendix A, *Tips and Shortcuts*) to duplicate the remark from the previous record. You can also use **Replace Field Contents** to repeat remarks for a large number of records.

6.5. User Fields

Up to 5 additional fields can be associated with each banding record. You can create labels for these fields on the **Settings** screen. Enter and edit information for these fields using the **User Fields** tab on the **Details** view of the **Bands** screen or by referring to the **User Field 1**, …**User Field 5** columns on the **Table** view. An arbitrary amount of information can be stored in each of these fields. Use the scroll bar to scroll through the information.

Figure 6.5. User Fields tab on the Bands Screen—Details View
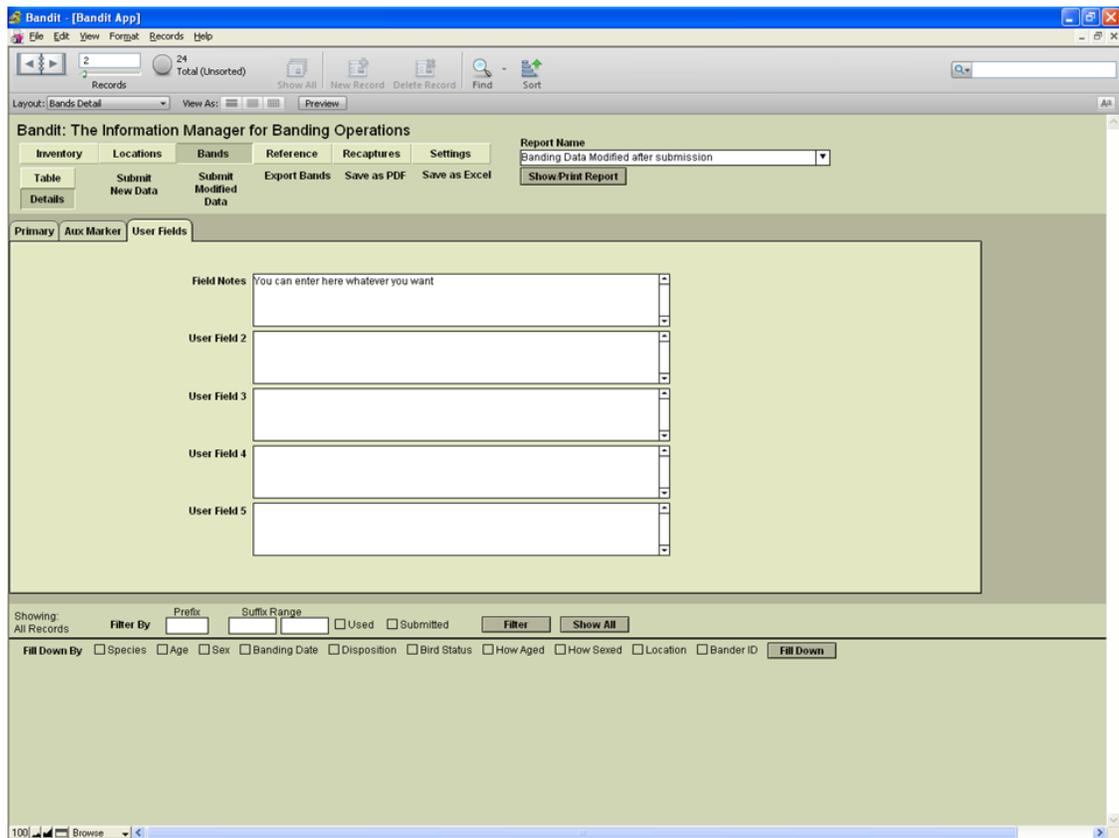
6.6. Other Features of the Bands Screens

The **Bands** screens have several other important features. The most important is the ability to submit banding data to the BBL or the BBO. Other features facilitate data entry and editing such as the ability to filter the bands visible on the screen, propagate field values throughout a collection of bands, duplicate the contents of a banding record, and clear out (reset) a banding record. Also, see Appendix A, *Tips and Shortcuts* for additional enhancements to data entry and editing.

6.6.1. Filtering Banding Data

You may select which bands are visible in the **Table** view by filtering by prefix, suffix range, used and submitted bands. If you fill in just the prefix, only those bands with that prefix will be on your screen. If you fill in only the first suffix, all the bands in the span starting with that suffix will be in view. If you fill in both suffix blocks, only those bands in that range will be in view. The **Used** and **Submitted** checkboxes can be checked to narrow the list even further. The **Used** and **Submitted** boxes can be checked and used without entering anything in either the prefix or suffix boxes as well. After you have entered your criteria click the **Filter** button. To go back and see all of your bands click the **Show All** button.

Tip

If you open Bandit and all of your data are not visible as you may expect, you may have performed a filter operation the last time you used the program. In this case, be sure to click on the Show All button to bring all of your bands back into view.

Tip

See Chapter 9, *Find Mode* for an alternative way to select banding records. Find mode will permit you to do more complex searches and base your selection on *any* of the fields in either the Table or Details view.

6.6.2. Fill-down Feature

The fill-down feature lets you quickly enter large amounts of banding data, in much the same way as the Batch function in Band Manager. When using the fill-down feature *all* of the records in the set selected will be updated with the criteria you selected to be filled down. *It is important that you perform a filter or find first so only the records you want will be updated.*

Begin by filling in the prefix and suffix range for bands that have identical information for the fields you wish to fill, and click **Filter**. Verify that these bands are the only ones now visible on your screen. Next, fill in all of the blocks on the first line of the table. Go to the bottom of the screen and check each box to the right of **Fill Down By**, selecting which information you want to have filled in the remaining records on your screen. Then click **Fill Down**. A Verify Fill Down Operation box will appear, giving you the opportunity to confirm this is actually what you want to do. Click **OK** if it is correct or **Cancel** if you see something you do not intend to do. After clicking **OK**, all of the information in the selected columns will be repeated in the remaining records.

Caution

It is imperative that you have the band numbers correctly selected/filtered before the fill-down feature is used. This feature can modify large numbers of records at one time and the operation cannot be undone.

After completing the Fill Down function, either select the next range of bands you wish to perform this operation on or click **Show All** to return to the **Table** view showing all of your records.

6.6.3. Duplicating Banding Records

You can duplicate one banding record at a time using the **Duplicate Band** function located under the **Records** menu found at the top of the screen. First, click with your cursor in any field in a row of completed data.

In the menu bar at the top of the screen select **Records** → **Duplicate Band** and all fields of the current row will be copied to the next row. CTRL-d is the shortcut for this function. To use the shortcut, click your cursor in the row containing the data to be duplicated and press the CTRL-d key combination. The next row will be populated with the same data. This feature cannot be undone.

Figure 6.6. Bands Screen Records Menu

6.6.4. Clearing Banding Data

You can clear banding data using the **Clear Band Record** function located under the **Records** menu in the menu bar at the top of the screen. Click in any field in a banding record to select that record and move to the top of the screen on the menu bar and select **Records** → **Clear Band Record**. All of the data will be removed from that banding record, returning it to the unused state. This feature cannot be undone.

6.6.5. Submitting Banding Data

The facility to submit banding data to the BBL and the BBO is initiated by picking **Submit New Data** or **Submit Modified Data** function found on the Bands screen. Chapter 8, *Data Submission*, has detailed information about this capability. Before submission you may preview what data is going to be submitted by using the report "New Banding Data to be Submitted" or "Banding Data Modified After Submission".

Tip

If you wish to have a printed or electronic record of the data you are submitting, make sure you select the "New Banding Data to be Submitted" report (or the "By Location: New

Banding Data to be Submitted" report) prior to submitting the data. This is the only means you have to create a *schedule* similar to the one you had using Band Manager. Look near the top of the green part of the screen and locate **Report Name**. Select the name of the report in the drop down list and click **Show/Print Report**. You will get a Print Options box where you may choose to print or export the report. If you choose Print, you will have the choice of saving as PDF. This will be your only chance to print a *schedule*. After the data are submitted they will no longer show in this report.

6.6.6. Importing Banding Data

Banding data can be imported by selecting the **File** → **Import Data From File** → **Bands/Recaptures** item from the **File** menu. See Chapter 12, *Importing and Exporting*, for more details on this capability.

Tip

Data quality checking constraints inside Bandit require the use of an ordered import sequence. Bands must be added into your inventory before banding data can be imported. Likewise, banding location data must be imported or created before banding data is imported to avoid location errors. Finally, bander information must be available before banding data is imported to avoid bander identification errors. Importing in this order: inventory, locations, bander information, and importing bands last will ensure consistency.

6.6.7. Exporting Banding Data

If you want to export banding data for use in another program or to share it with other people you can use one of several methods for data export found on the banding screen:

- **Export Bands**. Extract the banding information and create an external file in a variety of formats. You can choose which fields you want to export and the order in which you want them to appear.

- **Save as PDF**. Saves a version of the banding record (or records) *as it (they) appear on the screen* as an Adobe Portable Document Format (PDF) file suitable for printing or e-mailing.

- **Save as Excel**. This function outputs directly to the Microsoft Excel worksheet format. You cannot choose which fields you want to see or the order in which you want them to appear. The entire **Table** view will be exported into an Excel spreadsheet. If you want more versatility in the selection of fields or order of the fields you are exporting, see Chapter 12, *Importing and Exporting*.

6.6.8. Reports

The Banding screen provides easy access to a variety of reports. Select the report you want to see from the drop-down list and click the **Show/Print Report** button. The report will be created in another window. You can flip through the pages by using the book icon in the navigation panel along the left side of the window and then choose to send the output to the printer, save the results in Microsoft Excel format, or create an Adobe Portable Document Format (PDF) file. See Chapter 10, *Reports*, for more details on the reports provided and detailed instructions for using the report facilities.

Chapter 7. Entering recapture and other re-encounter data

When a previously banded bird is recaptured, resighted, or encountered via another means, this is considered an encounter record. A recapture is the capture of a previously banded bird. A resighting is the observation of a bird previously marked with a unique identifier such as a neck collar, wing tag, or radio transmitter. Recaptures and resightings are usually made by the original bander, but, like most other types of encounters, may be made by other banders, collaborators or the public. Recaptures and resightings constitute the majority of post-release data obtained from banded non-game birds, and for most analytical purposes the two can be considered equivalent. Individual banders often make extensive use of their own recapture and resighting data. In Bandit, for the sake of simplicity, we are referring to all re-encounters as "recaptures".

A powerful suite of analytical models and software is available for analyzing recapture data to estimate parameters such as survival, population size, rate of population change, movement probabilities, and age-specific breeding probabilities. Many banders deliberately collect and analyze recapture data for their project-specific needs. Others cumulatively collect millions of recapture data records suitable for use in mark-recapture models but do not use them. The potential use of these data in population research and management is great.

The functions available in the Recaptures section are similar to those in the Banding section. You have the ability to add recaptures, delete recaptures, duplicate recapture records, and submit recapture data. The two viewing modes, Table and Detail, are also available.

Clicking on Link 5 on the opening screen or clicking on the **Recaptures** button on one of the other screens will bring up the screen for entering recapture data. This is actually a pair of screens showing two views (or modes) of the same information. The **Table** view shows a spreadsheet-like table of the information in the recapture records. You can use this view to see a number of recapture records at a glance and rapidly enter a large amount of data, but only a limited number of fields are visible without using the scroll bar at the bottom of the window. The **Details** view allows you to see most of the fields in a particular recaptures record at once, but only for one record at a time. This view can be easily navigated by using the light gray navigation panel that appears on the top of the screen. Using this panel you can flip forwards and backwards through the records or jump directly to a particular recapture record.

By default, Bandit enters the Recaptures screen in **Table** view. To switch to **Details** view, click the **Details** button. To switch back to **Table** view, click the **Table** button.

> ### Note
>
> Looking for the Save item in the File menu? Bandit automatically saves data whenever you leave a record or go to another screen so you never have to worry about doing the save yourself.

7.1. Recaptures Screen—Table View

The table mode presents the recapture data in much the same way as it would appear in a spreadsheet. Like a spreadsheet you can rapidly enter information and use other keyboard commands to skip to the next and previous fields, duplicate information in successive records, jump to the first field in the table, etc.

Figure 7.1. Recapture Table View
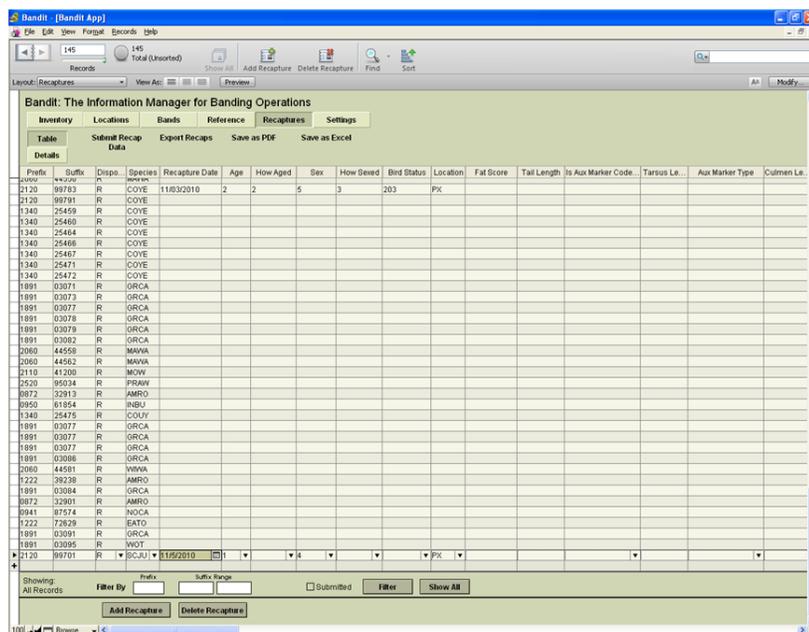
7.1.1. Sorting Recapture Data by Columns

Most of the time when you are entering data you will want to see the recapture records sorted in a preferred order. You can sort on any field by clicking on the column header. Click once to sort in ascending order. Click again to sort in descending order. Click on another column header to sort the records based on the value in that field. You can also sort records by using **Sort Records** in the Records menu at the top of the screen. It can sort by multiple columns.

7.1.2. Entering Recapture Data in Table View

To enter recapture data, click in one of the cells to start. You can see what is supposed to be entered into a particular column by pausing with your cursor over any cell in a column. The prefix and suffix of each band number must be entered into separate columns.

If this is a recapture of one of your bands currently being maintained in the banding inventory in Bandit, choose R (for Recapture) from the **Disposition** drop-down list. If you have recaptured a bird that was banded by someone else, choose F (for Foreign Recapture) from the **Disposition** drop-down list.

Many of the fields have a list of possible values associated with them. You can click the little triangle to bring up the list or type in the value yourself. For coded fields, you may wish to refer to the associated reference table. You may do so at any time by clicking on the Reference section button near the top of the screen.

The Species, Age, and Sex fields can be coded using either alpha or numeric codes. Refer to the Data Entry section in Chapter 3, *Bandit Settings*, for details on how to tell Bandit which coding format you wish to use (and be sure the Settings section is completed prior to entering recapture information.)

Many of the fields feature type-ahead completion. As you type, the program looks through the list of possible values and finds the first one that matches what you have typed so far, completing the value. If this is the value you want you can just Tab to the next field. If this is not the value you want, continue typing until the value is matched. The Tab key takes you to the next field. Shift-Tab takes you to the previous field.

7.2. Recaptures Screen—Details View

The Details view of the Recaptures screen presents the recapture data as a collection of fields shown as a form, making it easier to see related information (such as auxiliary marking). Although the screen presents data on only one recapture at a time, a navigation panel is provided to scroll through the recapture records. The Details view also provides additional features not available in **Table** view for auxiliary marking, error reporting and bypassing certain errors and more.

In the details view on the right-most portion of the view, there is also the ability to see the banding data if it is in the **Bands** module or to add the banding data for foreign recaptures/re-encounters. Typically you will only know this information after hearing back from the BBL after you report the band. Fields that can be added for foreign recaptures are banding date, banding age and sex, and banding location. These fields are here for your information and are not viewable in the **Table** view, nor do they interact with any of the recapture fields for editing purposes.

Figure 7.2. Recaptures Details View Screen
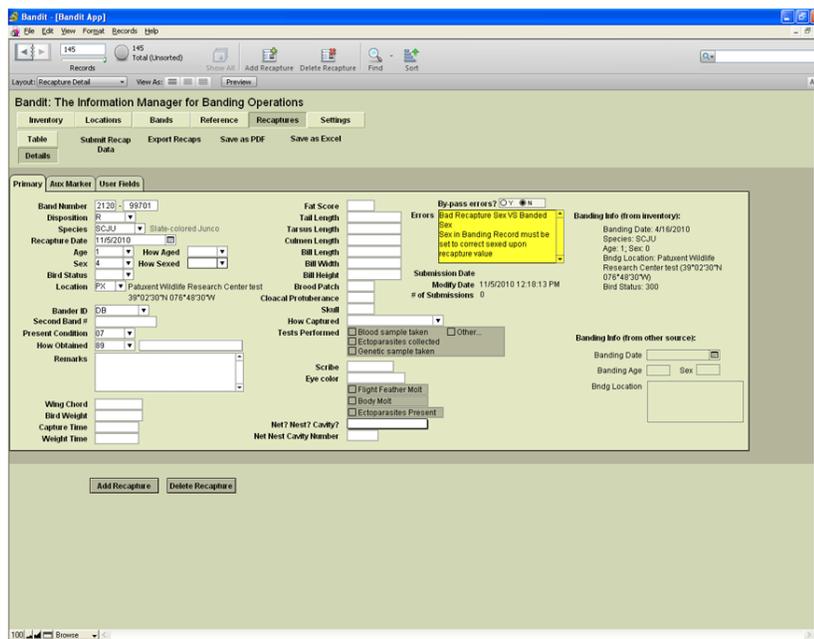
Entering Recapture data in Details view has all of the features from **Table** view, described in the previous section, including help when you pause over a field, value lists, type-ahead completion, and the use of the Tab key (and Shift-Tab) to jump from one field to the next.

Tip

Enter key (Return Key on MAC) works the same way as Tab Key.

7.2.1. Using the Navigation Panel

The Details view provides a gray navigation panel at the top of the screen. The navigation panel includes a small **book** icon to flip forward (right-hand page) or backward (left-hand page) through **pages**. Use the slider below the book to rapidly scroll ahead or back in the book.

7.2.2. Entering Auxiliary Marker Data

The Details view has a tab named Aux Marker which is for entering auxiliary marker data associated with a bird. First choose a marker type from the drop-down list in the Aux Marker Type field. If the auxiliary marker contains a code, click on the circle with **Y** under the **Is Aux Marker Coded?** and fill out the left-hand side of the screen, indicating the actual code, the color of the band, and the color of the code. If the bird is marked by a sequence of uncoded colored bands on one or both legs, click on the circle with **N** under the **Is Aux Marker Coded?** field and fill out the right-hand side of the screen, choosing the colors for the sequence of bands as appropriate. The **Remarks** field is repeated here, making it easy to add explanatory remarks if necessary.

⚠ **Caution**

The **Aux Marker** fields are in place to describe auxiliary markers on the bird **at time of recapture**. If a marker is added or replaced prior to the bird's release, the new marker description, including any codes on the marker, should go into the Remarks field, not the Aux Marker fields. If a bird's status is changed as the result of adding or removing markers, the How Obtained for the recapture record must be "53: Captured for Scientific Purposes (not collected). Status changed." Remember that changing the status of any already-banded bird requires permission from the BBL or BBO.

Figure 7.3. Aux Marker tab on the Recaptures Screen—Details View

Figure 7.4. Aux Marker for a Sequence of Uncoded Colored Bands

The **Aux Marker Combined** field is automatically generated from the rest of the information on the screen. It summarizes the information into a single field. This is the field that is submitted to BBL/BBO.

Note

The Aux Marker page in Bandit is a work in progress, and currently only accommodates relatively simple auxiliary marking conditions. If you feel you cannot properly describe the marker(s) by using the available auxiliary marker fields, first complete the available fields and describe the remaining details in **Remarks.** If the bird has more than one type of marker, one of which is coded, describe only the coded one and mention the others in remarks. In this case, you would set the **Aux Marker Type** field to match the type of the coded marker. In any combination of markers, the default one to be reported here is the one most likely to be seen and reported by the public.

7.2.3. Entering Data for Double Banded Birds

If you recapture a bird that is double banded with an additional Federal band, enter the second band number in the Second Band # field in the recapture record.

If a bird is recaptured and the original band is replaced or an additional Federal band is placed on an already banded bird, this is considered a banding event and should be recorded in the Bands table. See Chapter 6, *Entering Banding Data* for more information.

7.2.4. Recording Recaptures from the Banding Details View

If you want to record the recapture of a bird you banded previously, in the **Banding Details** View click the button next to the band number labeled **Report Recapture**. A new recapture record will be created

and you will automatically be switched to the **Recapture** module. Band Number, Disposition, Species, and How Obtained will be pre-populated by the Bandit.

7.3. Error Checking

Bandit automatically and transparently checks the recapture data using a variety of checks to ensure the data are coded correctly and the fields are internally consistent. Any fields that fail these checks are considered "errors". You can see the errors Bandit has identified for an individual record by looking at the **Error** field in the **Details** view or the **Error Text** column in the **Table** view. The field containing the error text will be highlighted in yellow if there are non-bypassable errors in the record. Once the non-bypassable errors are resolved, the error text will no longer be highlighted. Refer to Appendix C, *Data Editing Error Messages* for a complete description of the errors that may occur and how to correct them. Some less-critical errors may be bypassed, allowing the recapture record to be submitted during the data submission process. When you click Y in the **Bypass Error** field, the error message will still be visible if left unresolved, but the record will be submitted during the data submission process. If you try to bypass errors and Bandit does not allow it, one or more errors in the record cannot be bypassed. Records with errors that were not bypassed or are non-bypassable will not be sent during the data submission process.

7.4. Using the Remarks Field

Associated with each recapture record is a Remarks field which is useful in several situations. Add an explanatory remark whenever you bypass an error, indicating why the error does not apply to this record. Add a remark as necessary for special auxiliary marking situations not covered by the capabilities of the auxiliary marker fields. You can add any other information you want the banding office to be aware of. Keep in mind that only the first 250 characters of the Remarks field are submitted to the BBL/BBO. If you wish to keep other detailed information associated with a particular recapture that is not sent to the BBL/BBO, use one of the user-defined fields.

7.5. User Fields

Up to 5 additional fields can be associated with each recapture record. You can create labels for these fields on the **Settings** screen. Enter and edit information for these fields using the **User Fields** tab on the **Details** view of the **Recaptures** screen or by referring to the **User Field 1**, …**User Field 5** columns on the **Table** view. An arbitrary amount of information can be stored in each of these fields. Use the scroll bar to scroll through the information.

Figure 7.5. User Fields tab on the Recaptures Screen—Details View
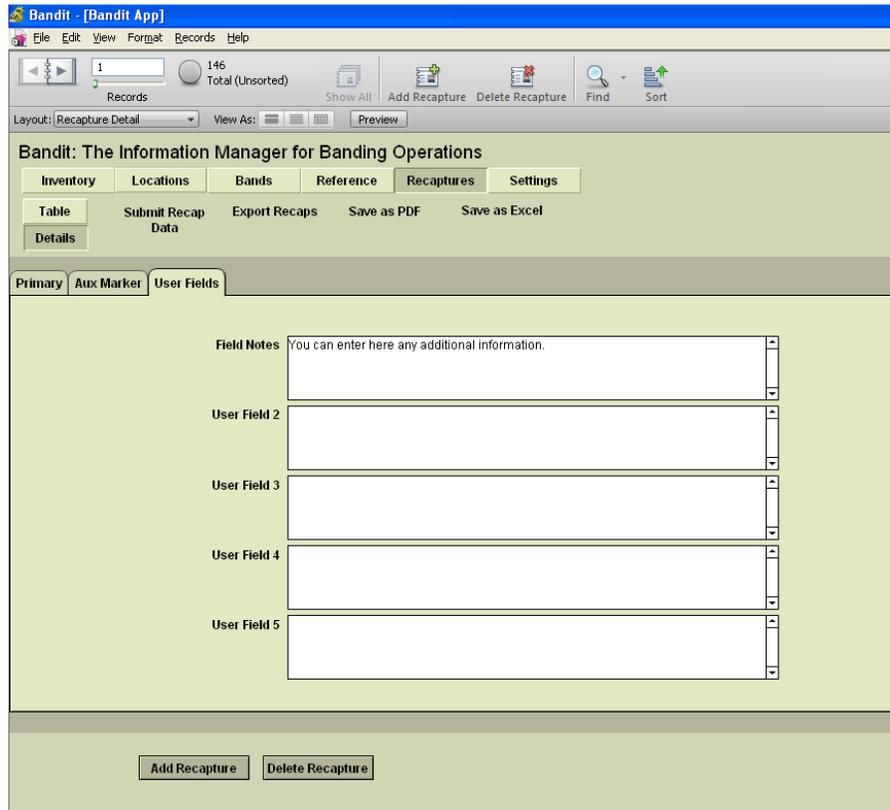
7.6. Other Features of the Recaptures Screens

The Recapture screens have several other important features. The most important is the ability to submit recapture data to the BBL or the BBO. Other features facilitate data entry and editing such as the ability to filter the recapture records visible on the screen, propagate field values throughout a collection of recaptures, duplicate the contents of a recapture record, and delete a recapture record or series of recapture records. Also, see Appendix A, *Tips and Shortcuts* for additional enhancements to data entry and editing.

7.6.1. Filtering Recapture Data

You may select which recaptures are visible in the **Table** view by filtering by prefix, suffix range, and submitted recaptures (see footer area of the screen). If you fill in just the prefix, only those bands with that prefix will be on your screen. If you fill in only the first suffix, all the bands with that suffix and higher will be in view. If you fill in both suffix blocks, only those bands in that range will be in view. The **Submitted** checkbox can be checked to narrow the list even further. The **Submitted** box can be checked and used without entering anything in either the prefix or suffix boxes as well. After you have entered your criteria click the **Filter** button. To go back and see all of your bands click the **Show All** button.

Tip

If you open Bandit and all of your records are not visible as you may expect, you may have performed a filter operation the last time you used the program. In this case, be sure to click on the Show All button to bring all of your bands back into view.

Tip

See Chapter 9, *Find Mode* for an alternative way to select recapture records you want to operate on. Find mode will permit you to do more complex searches and base your selection on any of the fields in either the **Table** or **Detail** view.

7.6.2. Duplicating Recapture Records

You can duplicate one recapture record at a time using the **Duplicate Recapture** function located under the **Records** menu found at the top of the screen. First, click with your cursor in any field in a row of completed data. Select **Duplicate Recapture** from the **Records** menu and all fields of the current row will be copied to the next row except for the band number. **CTRL-d** is the shortcut for this function. To use the shortcut, click your cursor in the row containing the data to be duplicated and press the **CTRL-d** key combination. The next row will be populated with the same data.

Note

For those accustomed to using **CTRL-d** in Excel, note that this is the opposite of how this shortcut works in Excel.

7.6.3. Recaptures Records Menu

In addition to the previously described functions in the **Records** menu, there are others which may be helpful.

Delete Recapture – This will delete the recapture record that is selected. You will be prompted to answer if you want to permanently delete the entire recapture record. Select Cancel or Delete. This function cannot be undone. This function is also available as an icon immediately below the file menu.

Delete All Found Recaptures – This will delete all recaptures in the found set. You will be prompted to answer whether or not to permanently delete the records in the found set. Select Cancel or Delete All. This function can be used to delete all recaptures if Show All has been selected prior to this function. This function cannot be undone.

Add Recapture – This will allow a new recapture record to be added. This function is also available as an icon immediately below the file menu.

Mark as Submitted – This will mark all records in the found set as submitted. A prompt will provide the number of recapture records that will be marked as submitted. The submission timestamp will be set to the current day for all records in found set. These records will not be submitted the next time **Submit Recap Data** is selected.

Mark as Not Submitted – This will mark all records in the found set as not submitted. A prompt will provide the number of recapture records that will be marked as not submitted. The submission timestamp will be set to null for all records in found set. These records will be submitted the next time **Submit Recap Data** is selected.

Go to Record – This function is most useful when working in the **Details** view. Select 'next' or 'previous' as needed. The record number for a recapture in the found set can be entered under the 'Go To' selection.

Show All Records – This function is the same as 'Show All' at the bottom of the screen when in **Table** view. When selected, all recaptures will be shown in the **Table** view. If records were previously filtered or the Find function used, Show All Records can be used to return to a view of all recapture records.

Show Omitted Only -Selecting this will show all records that were omitted from the previous found set. Clicking on the green pie immediately below the file menu will also revert to showing all omitted records. Clicking on it again will reverse the action.

Omit Record – This function will omit the selected record from the found set.

Omit Multiple... – This function will omit the number of records entered, beginning with the selected record, from the found set.

Modify Last Find - This will bring up the find criteria from your previous search and you can change or add any fields you wish for a new search.

Sort – This will allow records to be sorted based on selected criteria. If the recapture records need to be sorted at multiple levels (for example, first by prefix, then suffix, then recapture date), the desired order can be assigned based on the selected criteria in the Sort Order box. Records can be sorted in ascending, descending, or a customized order.

Tip

You can also sort records on any field by clicking on the column header. Click once to sort in ascending order. Click again to sort in descending order. Click on another column header to sort the records based on the value in that field.

Revert Record – Returns the current record or request to the way it was before you began adding or changing data in the record.

Figure 7.6. Recaptures Screen Records Menu

Records	
Duplicate Recapture	Ctrl+D
Delete Recapture	Ctrl+E
Delete All Found Recaptures	
Add Recapture	Ctrl+N
Mark As Submitted	
Mark As Not Submitted	
Go to Record	▶
Show All Records	Ctrl+J
Show Omitted Only	
Omit Record	Ctrl+T
Omit Multiple...	Ctrl+Shift+T
Modify Last Find	Ctrl+R
Sort Records...	Ctrl+S
Unsort	
Replace Field Contents...	Ctrl+=
Relookup Field Contents	
Revert Record...	

7.6.4. Submitting Recapture Data

The facility to submit recapture data to the BBL and the BBO is initiated by picking the **Submit Recap Data** function found on the Recaptures screen. Chapter 8, *Data Submission* has detailed information about this capability.

7.6.5. Importing Recapture Data

Recapture data can be imported by selecting the **Import Data From File# Bands/Recaptures** item from the **File menu**.

Caution

Make sure **Recapture Date** source field is mapped to target field **Banding Recapture Date**.

If there is a column for a second band number in the source file it should be mapped to the target field **Replaced Band Number**.

How Captured and **How Obtained** are two different fields for different purposes. **How Captured** is the technique used to capture the bird (e.g. mist net, rocket netting) whereas **How Obtained** is how recapture was encountered (see **How Obtained** table in the **Reference** section of Bandit).

Figure 7.7. Recapture Import Field Mapping
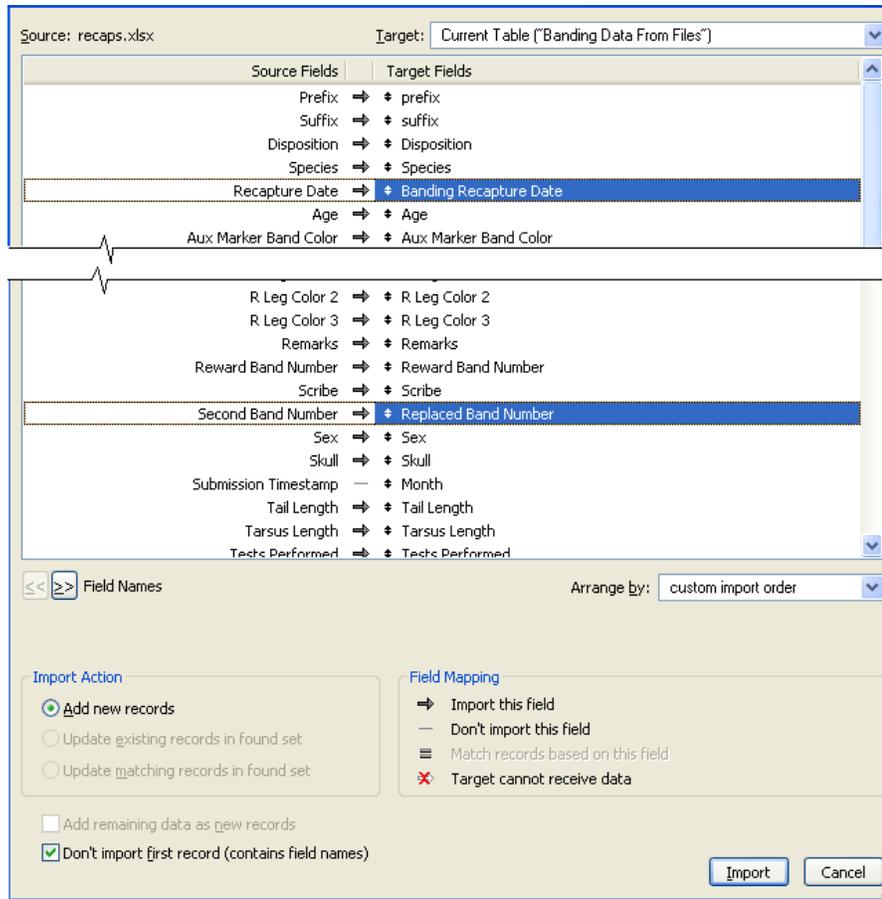
See Chapter 12, *Importing and Exporting* for more details on this capability.

Tip

Data quality checking constraints inside Bandit suggest the use of an ordered import sequence. Bands must be added into your inventory before banding data can be imported. Likewise, banding location data must be imported or created before banding data is imported to avoid location "errors". Finally, bander information must be available before banding data is imported to avoid bander identification "errors". Importing in this order: inventory, locations, bander information, and importing bands last will ensure consistency.

7.6.6. Exporting Recapture Data

If you want to export your recapture data for use in another program or to share it with other people you can use one of several methods for data export found on the recapture screen:

- Export Recaps. Extract the recapture information and create an external file in a variety of formats. You can choose which fields you want to export and the order in which you want them to appear.

- Save as PDF. Saves a version of the recapture record (or records) as it (they) appear on the screen as an Adobe Portable Document Format (PDF) file suitable for printing or e-mailing.

- Save as Excel. This function outputs directly to the Microsoft Excel worksheet format. You cannot choose which fields you want to see or the order in which you want them to appear. The entire **Table** view will be exported into an Excel spreadsheet. If you want more versatility in the selection of fields or order of the fields you are exporting, see Chapter 12, *Importing and Exporting*.

7.6.7. Recapture data fields received and processed by the BBL/BBO

There are 14 fields that are transmitted to the BBL/BBO when you submit data. These fields are Permit Number, Band Number, Disposition, Species, Age, How Aged, Sex, How Sexed, Recapture Date, Location, Aux Marker Combined, How Obtained, Present Condition, and Remarks. All of the data in these fields must be "error" free in order for the data to be submitted. It is therefore recommended that you locate the **Error Text** column, click on the heading, and drag that column so it is immediately to the right of these columns. Any errors in the mandatory data will then be readily visible and can be corrected immediately.

After recapture data are submitted to the BBL/BBO, currently (at the time of release of Bandit v 3.0) only foreign recaptures and certain local recaptures are processed into the encounter database. Only one record per band number per day (first received) is loaded into the BBL/BBO encounter database. Also, while the fields Age, How Aged, Sex, How Sexed, and Bird Status are submitted to the BBL, these fields are not currently loaded into the BBL/BBO encounter database.

Note

When recaptures are fully processed into the BBL/BBO encounter database, at the end of that week you will be sent a report, similar to the Report to Bander, titled **Banding Report for Recaptures**. It will contain the banding data for any fully processed foreign recaptures submitted via Bandit v 3.0 and foreign replaced or added-to bandings submitted via any version of Bandit.

Chapter 8. Data Submission

In previous programs used to manage banding information, banding data were arranged to match a special paper coding form called a *Banding Schedule*. Typically banders, after inputting the data would print the schedule, which was then submitted to the BBL/BBO. Many banders found this confusing, as they were unsure whether they had to wait until the schedule was completely filled out before they could send in the banding data.

Bandit takes a different approach. Because there are no paper schedules to submit, new data or previously-submitted records that have been modified can be submitted at any time. Hopefully this will make submission of banding data less cumbersome and more timely.

Note

It is imperative that your data be nearly error free prior to using the data submission process. As described in the data editing section, some errors may be bypassed and some may not. Errors that cannot be bypassed must be corrected. **Bypassed errors** must be set to Y to skip these errors. The program will tell you which errors can be bypassed when you attempt to bypass them. Records that contain errors that cannot be bypassed, or errors that can be bypassed and have not been, will not be transmitted using the data submission process.

Eight fields are *required* to be submitted. These include **Band Number**, **Disposition**, **Species**, **Age**, **Sex**, **Banding Date**, **Bird Status**, and **Location**. If you have placed an auxiliary marker on the bird and used a status code reflecting that, aux marker data fields are also required. If you do not have these fields filled in or bypassed correctly, the aux marker data fields will not be included in the submission record when you submit data. The **How Aged** and **How Sexed** fields are not required, but if the fields contain data, they must be valid and consistent with the rest of the data in the record. The **Remarks** field may also be required, depending on the value of **Bird Status**, auxiliary marker, and whether errors have been bypassed.

8.1. Banding Data Submission Process

When you initiate the data submission process by clicking on the **Submit New Data** function on the Banding screen the system automatically goes through the data looking for bands that have been used but the data have not been sent previously. These bands are added to a file.

When you initiate the data submission process by clicking on the **Submit Modified Data** function, the system looks to see if any banding record has been modified since the last time that record was submitted. If so, these bands are marked for inclusion in the data submission. As with New Data, only records without **"errors"**, or records where the "**errors**" were bypassed (true only for bypassable errors) will be submitted.

Tip

If you wish to have a printed copy of the data for your records you are submitting in a format similar to the "schedule" produced by Band Manager, you must select the *New Banding Data to be Submitted* report from the **Report Name** drop-down menu, then click **Show/Print Report** and choose any options you want from the pop up box, prior to submitting data. **This report can only be created prior to submitting records.**

You may also use the *New Banding Data to be Submitted* report to see all of the records ready to be sent. Any records containing errors will be highlighted so you can easily tell at a glance which records need to be corrected. Go to the bands **Details** screen, where you can see all

the errors, and bypass them in appropriate cases or fix the errors. See Figure 8.1, "Banding Data to be Submitted Report" for an example.

Figure 8.1. Banding Data to be Submitted Report
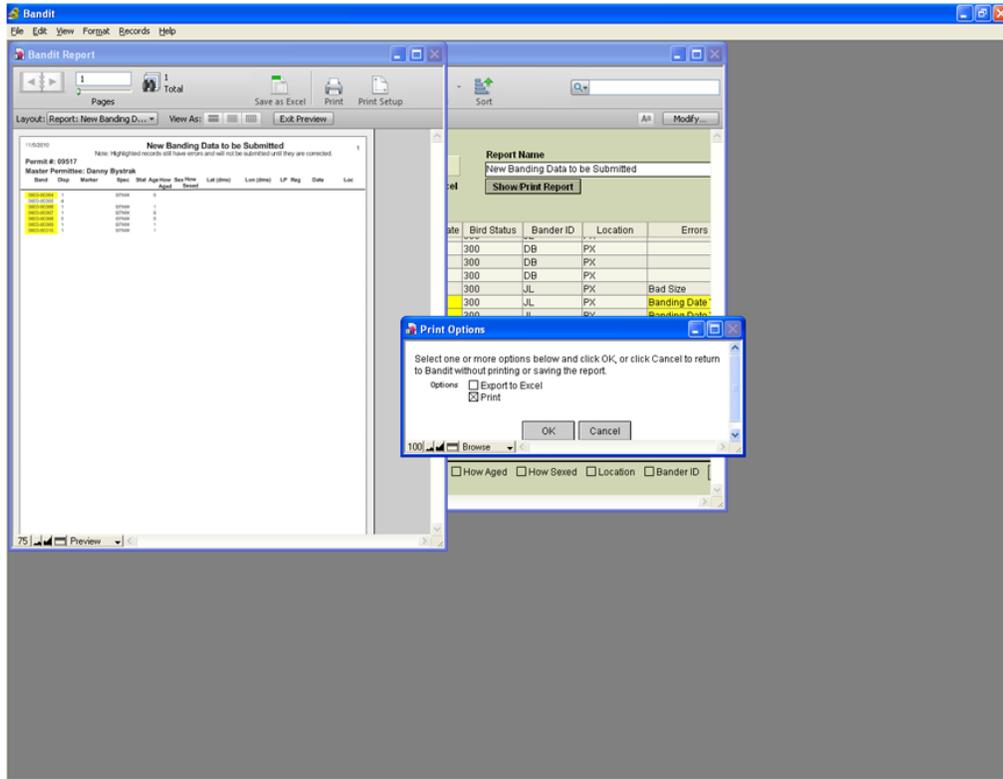
Bandit prepares the file and displays a dialog box showing the number of records being submitted. (See Figure 8.2, "Bandit Data Submission Dialog Box".) After the dialog box is dismissed, Bandit will automatically launch your system-wide email program to send the message containing the file directly to the BBL or the BBO, provided the system is configured to do so.

Figure 8.2. Bandit Data Submission Dialog Box

Figure 8.3. Bandit Data Submission Email
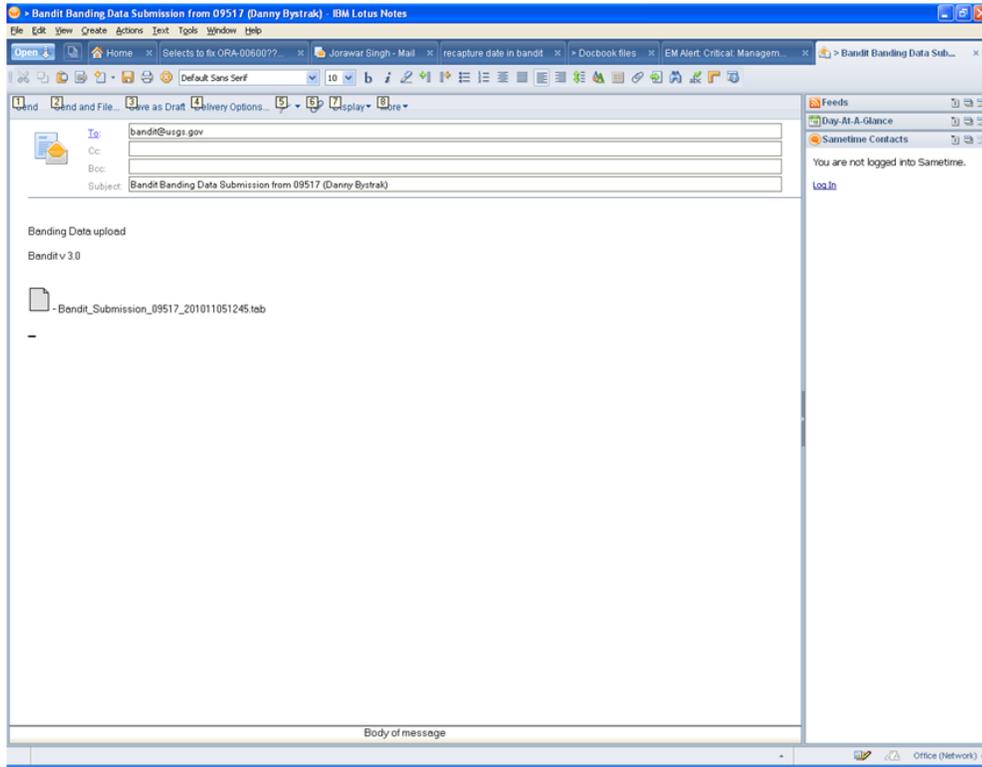
If your email program isn't automatically launched, the file containing the data submission is saved to your `My Documents` folder (`Documents` folder on the Mac) with the name `Bandit_Submission_PPPPP_YYYYMMDDHHMM.tab`, where `PPPPP` is the permit number, `YYYY` is the current year, `MM` is the current month, `DD` is the current day of the month, `HHMM` is the time the file was created. So `Bandit_Submission_55555_200607241020.tab` contains a data submission that was created July 24, 2006 at 10:20am by the bander with permit number 55555. Open your email client as if you were sending any normal email and type `Bandit@usgs.gov` (or `Louise.Laurin@ec.gc.ca` for Canadian Banding Office submissions) in the address field and type `Bandit Banding Data Submission from PPPPP (Your Name)` into the subject field. Attach the file located in your `My Documents` folder as described above and then send as any normal email.

The user has the option to create a Note for File, which will include a summary of all band spans and locations submitted. You may print this note or save it as a file. The last Note for File will be available in the **Report Name** drop-down menu, but only if you create the Note for File.

Figure 8.4. Note For Submission File Report

Once a banding record has been submitted, a *submission timestamp* will be created by the program and placed in the **Submission Timestamp** field in the **Table** view or the **Submission Date** field in the **Details** view. A *modification date* is also maintained by the system, and changes whenever changes are made to the banding record. If the banding record has been modified after its original submission, the record will automatically be included in the next submission file, when you choose to submit modified data. The **Number of Submissions** field on the Details view indicates how many times a particular banding record has been submitted.

Tip

If you are importing data from Band Manager or some other source file and you are certain that data have been previously submitted, you can use the **Mark as Submitted** feature (in the **Records** menu) to create a submission timestamp. First, use the **Filter** feature or the **Find** mode to select the subset of your records that have already been submitted. Next, choose the **Mark as Submitted** item from the **Records** menu. The submission timestamp is created for all of the records in the current found set and the records will not be included in future submissions unless you modify a record. This can be handy if you wish to have all of your previous data in Bandit to check for recaptures, etc., but you should be sure to complete all of the import processes prior to entering new data. Remember to choose **Show All Records** from the **Records** menu to see all of your records.

Once the data submission email is received by the BBL/BBO, an email response is returned, often immediately, but usually by the end of the next business day. If you do not receive a response, it is likely that the data file was not received. Check within your email program to see if the email is still pending. If not, you may have to go to My Documents (Documents in Mac) and find the file and email it.

8.2. Recapture Data Submission Process

When you initiate the data submission process by clicking on the **Submit Recap Data** link on the Recapture screen the system automatically goes through the data looking for records without errors or with errors bypassed. These recaptures are added to a file for inclusion. Only records not submitted previously will be added to BBL database.

To submit recapture data, If your email program isn't automatically launched, the file containing the data submission is saved to your My Documents folder (Documents folder on the Mac) with the name Bandit_Recaps_PPPPP_YYYYMMDDHHMM.tab. Open your email client as if you were sending any normal email and type Bandit@usgs.gov (or Louise.Laurin@ec.gc.ca for Canadian Banding Office submissions) in the address field and Bandit Recaptures Submission from PPPPP (Your Name) into the subject field. Attach the file located in your My Documents folder as described above and then send as any normal email.

Chapter 9. Find Mode

Find mode may be used to search for particular records that match a set of criteria. You can then work with this subset of your records, called the *found set*. **Find** can be used in either the **Table** or **Details** view. To make a find request:

1. Go to the screen that has fields in which you want to enter criteria: Bands, Recaptures, Locations or Band Inventory.

2. Choose **Find Mode** from the **View** menu at the top of the screen or use **CTRL-f** (**CMD-f** on the Mac). You may also click the magnifying glass icon in the grey portion of at the top of your screen, or choose Find from Bandit Mode pop-up list in the bottom left corner of the screen, see Figure 9.1, "Bandit Mode Icon Bar"

Figure 9.1. Bandit Mode Icon Bar

3. Enter your criteria into any fields to be used for finding records. The more fields you fill in, the more you narrow down your found set. For example, you may just fill in a value for species. This will return all records for that species. If you fill in both species and age, it will return all records for just that species and that age. You can use operators such as greater than, less than etc. in your searches. Available operators can be seen and selected by right-clicking in the field and selecting **Operators** from the drop-down menu or using the **Operators** drop-down located in the status area at the top of your screen.

Figure 9.2. Find Mode Symbols Drop-down Menu
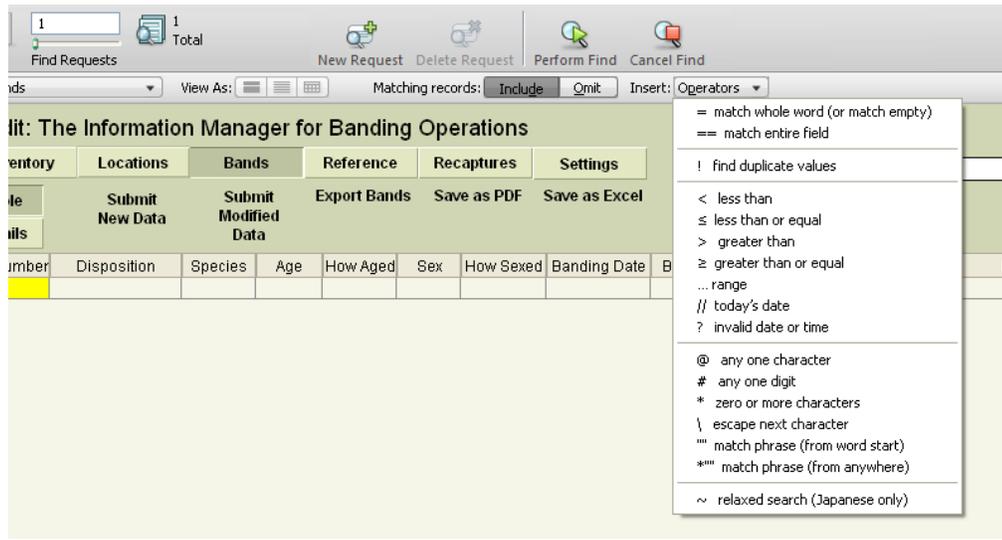
4. Once you have entered all the criteria you wish to include in the search click the **Perform Find** button at the top of your screen.

After you find a group of records, Bandit returns to Browse mode so you can begin working with them. To show all records again, choose **Show All Records** from the **Records** menu or click the **Show All** button at the top of the screen. If you are going to perform another find that involves changing some, but not all of the criteria from your previous find, you can choose **Modify Last Find** from the **Records** menu. This will bring up the find criteria from your previous search and you can change or add any fields you wish for a new search.

Tip

Find mode can be used to create a custom *Banding Summary by Location* report. First select a collection of bands using the process described above and then select the *Banding Summary by Location* report from the **Report Name** drop-down menu. You will get a custom report with just those bands you selected.

Tip

You can click the pie chart to toggle between your found set and the omitted records in the database. When all records are displayed, the pie chart is a solid color.

Chapter 10. Reports

All of the reports in Bandit are available from the **Bands** section. Pick the report you want from the **Report Name** drop-down menu and click the **Show/Print Report** button. A new window will appear where you can preview the report. Use the book icon on the navigation and status panel at the top of the window to look through the pages of the report. A small dialog box will also appear with 2 checkbox options: **Export to Excel** and **Print**. You can select any or all of these options. Then click **OK** to complete the process or click **Cancel** to cancel the process.

Figure 10.1. Bands Screen with Reports Drop-down
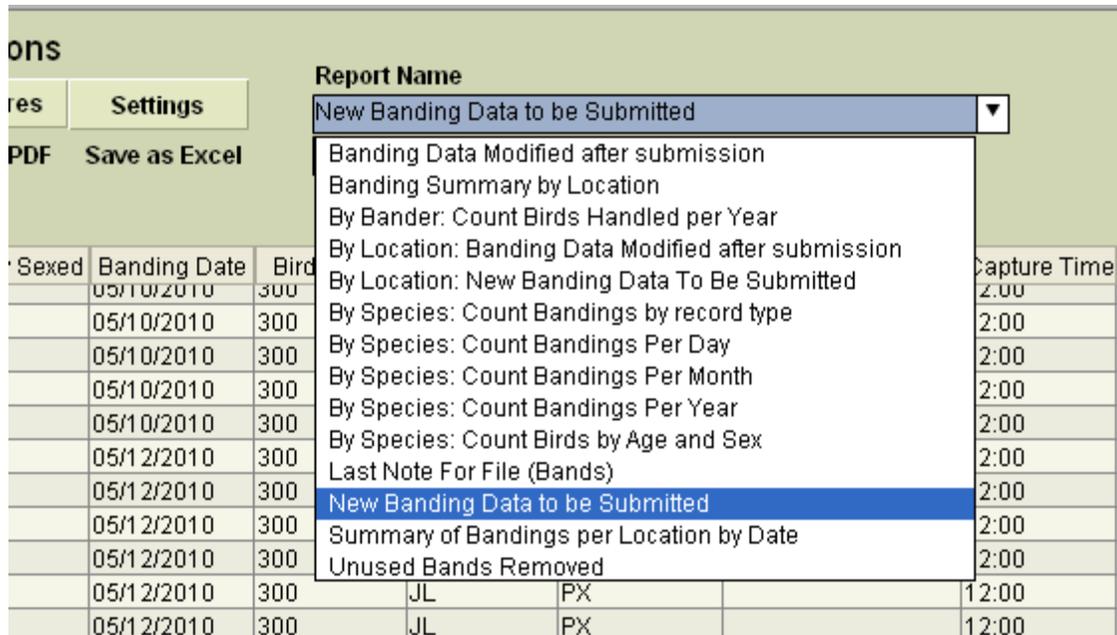
The following reports are available in Bandit.

Report Name	Use
New Banding Data to be Submitted	Similar to the "Schedule" produced from Band Manager. This report must be produced *before* the submission process. It contains all the records not submitted to BBL previously (**Number of submission** = 0).
Banding Data Modified after submission	Similar to New Banding Data to be Submitted report except it contains only previously submitted data that was modified since last submission (**Number of submission** >0).
Banding Summary by Location	Summary report grouped by location showing the number of birds of each species, age, and sex combination banded at that location. Use the filter function or the find mode before requesting the report to select a subset of all the records to be used for this report.
By Bander: Count Birds Handled per Year	Summary report showing how many birds have been handled by each bander.
By Location: New Banding Data to be Submitted	Similar to the "Schedule" produced from Band Manager, with the information divided by banding location. This report must

Report Name	Use
	be produced *before* the submission process. It contains all the records not submitted to BBL previously (**Number of submission** = 0).
By Location: Banding Data Modified after submission	Similar to By Location: New Banding Data to be Submitted report except it contains only data submitted before and modified since last submission (**Number of submission** >0).
By Species: Count Bandings by record type	Summary report divided by species showing how many birds were banded, recaptured, etc.
By Species: Count Bandings Per Day	Summary report divided by species showing how many birds were banded each day over a range of dates.
By Species: Count Bandings Per Month	Summary report divided by species showing how many birds were banded each month over a range of dates.
By Species: Count Bandings Per Year	Summary report divided by species showing how many birds were banded each year over a range of dates.
By Species: Count Birds by Age and Sex	Summary report divided by species showing how many birds of each age and sex combination are being maintained in the inventory.
Summary of Bandings per Location by Date	Summary report showing the banding activity for each location over a range of dates.
Last Note For File (Bands)	The last Note for File submission report created during the submission process is available under this selection, provided you asked to create the Note for File at the time of submission.
Unused Bands Removed	A report showing the list of bands removed via the Remove Unused Bands from Inventory function.

Chapter 11. Reference Tables

Bandit uses a variety of reference tables to facilitate data entry and aid in the error checking process.

Figure 11.1. Bandit Reference Tables Screen
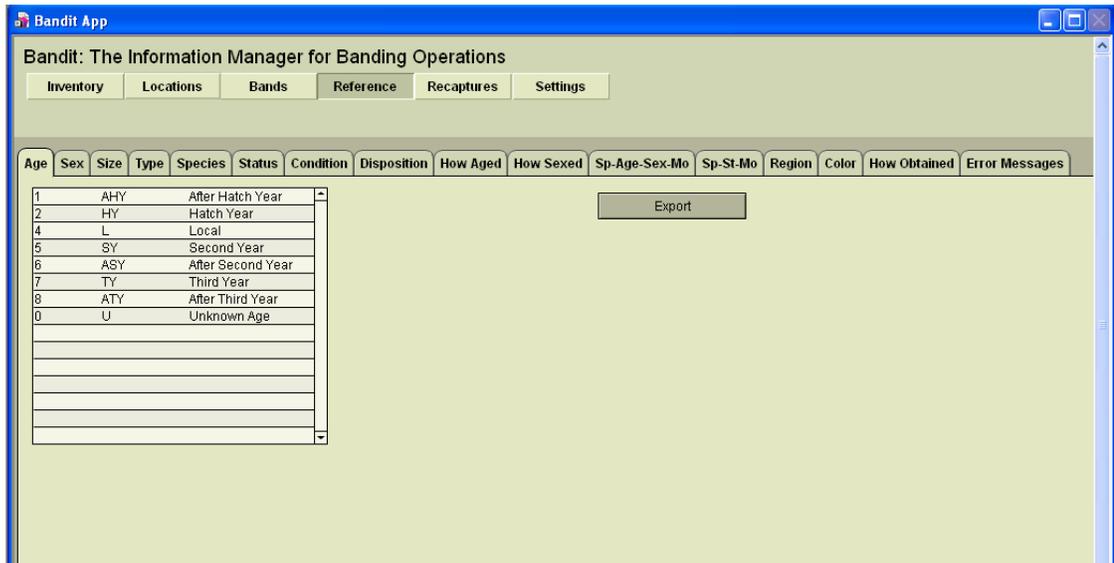
To see what is contained in any of the reference tables, click on the **Reference** tab at the top of the screen. Here is a list of the reference tables and their use.

Age	Bird age codes and meanings. Both alpha and numeric codes are given. Used in the drop-down lists for age data entry and error checking.
Color	List of color codes and their meanings, for use with auxiliary markings.
Condition	Present condition of the bird/band used in recapture module.
Disposition	List of banding and recapture record disposition codes and their meanings.
Error Messages	Error messages, Causes, and Resolutions for all the possible banding, recapture and location errors.
	Other way to lookup Error Messages is by using **Error Messages Lookup** under **Help** menu (where you can do **find** and **sort** as well).
How Aged	List of how aged codes and their meanings.
How Obtained	Explanation for the **How Obtained** codes used in recapture module.
How Sexed	List of the how sexed codes and their meanings.
Present Condition	List of the codes and their meanings for the condition of a *recaptured* bird when it was released.
Region	Region codes and their equivalent meanings for geographic regions. The region codes are being phased out in favor of using the Federal

	Information Processing Standard (FIPS) codes for country, state/province/territory, and county/parish/district.
Sex	Bird sex codes and meanings. Both alpha and numeric codes are given. Used in the drop-down lists for sex data entry and error checking.
Size	List of band sizes. Refer to the Species tab to see which band sizes are allowable on which species of bird. Used in the drop-down list for band sizes.
Species	Bird species alpha codes, numeric species ids, names, and allowable band sizes. Used in the drop-down list for species and for error checking. Because this list is lengthy, it includes a search facility.
Species-Age-Sex-Month	Months or fractions of months a particular species, age of bird, and sex of bird combination is likely to be encountered.
Species-State-Month	Months or fractions of months a particular species is likely to be encountered within a particular state/province/territory or country.
Status	Combination of the bird "status" and "additional information" fields. Lists status code and a longer description. Because this list is lengthy, it includes a search facility
Type	List of the types of bands that may be used. Used in the drop-down list for band types.

Chapter 12. Importing and Exporting

The ability to transfer data between Bandit and other programs such as Excel and SAS is an important part of successfully integrating Bandit into your work processes. These capabilities have been enhanced in the current version of Bandit.

Tip

Data quality checking constraints inside Bandit suggest the use of an ordered import sequence. Bands must be added into your inventory before banding data can be imported. Likewise, banding location data must be imported or created before banding data is imported to avoid location **errors**. Finally, bander information must be available before banding data is imported to avoid bander identification **errors**. Importing in this order: inventory, locations, bander information, and importing bands last will ensure consistency.

12.1. Importing from Band Manager

You can import four kinds of records from Band Manager: Band Inventory, Banding Locations, Banders, and Bands. The first step is to use the export facilities of Band Manager to export the data in each of these four areas. Export the files to a location on your hard drive or removable storage device that you will be able to easily locate later, and be sure to give the files meaningful names so you know what each of the files contains. Most often, it will be easiest to export them into the Band Manager `Export` folder. When exporting files from Band Manager for future importing into Bandit, it is best to select `dbf` as the file type for export in Band Manager. However, if you have user-defined fields, Excel is the preferred file type for the export.

Imports for all four kinds of records from Band Manager can be done by selecting the appropriate **Import** item located in the **File** menu. For each kind of record, the process is the same: find the file containing the records you exported from Band Manager, verify that the fields from the import file match the fields in the Bandit record, and click the Import button. Bandit will automatically verify the data from the import file and incorporate it into the Bandit data file. In addition to Import from Band Manager, Bandit provides the capability to import bandings, locations, and bander information from a variety of other types of files. For more information, see Section 12.2, "Importing from Other Sources", below.

12.1.1. Importing Band Inventory from Band Manager

Begin the process by exporting your inventory in Band Manager as a `dbf` (dBase IV) file into the Band Manager `Export` folder and be sure to name it as something you will remember. Also check the box in Band Manager at the bottom of the Export screen for the **No. of Bands** and note that number. Switch to Bandit and click on the **File** menu and then select **Import from Band Manager** → **Band Inventory** from the submenu. A dialog box will appear asking you to locate the file containing the data you exported from Band Manager. Navigate to the Band Manager `Export` folder and click on the inventory file you exported from Band Manager and wish to import into Bandit. A results box will appear telling you how many bands were successfully imported as well as the number of spans added to your inventory. Ensure that the total number of bands that were imported matches the number of bands shown on the inventory Export screen as mentioned above. This will ensure that you successfully exported all of your bands from Band Manager and imported them into Bandit.

Warning

Import Inventory from Band Manager may take a long time if you have a large number of bands. The process is fairly quick (minutes) for less than 10,000 bands but may take some

time (hours) if your inventory in Band Manager is extensive, particularly in the 100,000 band range. *Do not interrupt this process.* After the import has started, clicking anywhere else in the program will interrupt it. Interrupting the import process will result in erroneous records being entered into the band number field and the only way to correct this is to reload the program.

12.1.2. Importing Locations from Band Manager

Begin the process by opening Band Manager and navigating to the export function for locations by clicking this sequence of buttons: **Utilities**, **Program Lookups**, **Locations**, **Export**. Your locations table will open. Select dBase IV as the format and export the locations table to the Export folder by clicking on **Export**.

Switch to Bandit and click on the **File** menu and then select **Import** from **Band Manager** → **Locations**. A dialog box will appear asking you to locate the file containing the data you exported from Band Manager. Navigate to the Band Manager Export folder and click on the locations file you exported from Band Manager and wish to import into Bandit. An **Import Field Mapping** box will appear. About 2/3 of the way down the window on the right side, just at the top of the gray area, there will be an **Arrange By** drop-down list. Select Matching Names from the drop-down list if it is not already there and then click the **Import** button at the bottom right of the window. An **Import Summary** box will appear showing you how many locations were successfully imported. Make sure this is the same number of locations you had in Band Manager. Click **OK**. An **Import Locations Result** box will appear showing you how many locations were added to the Bandit locations table. Click **OK**. The locations will now be in your table, added to the bottom if you already had locations entered into the table. You must now add the counties to the table to get the **Valid?** column to say Yes. County is required in Bandit for U.S. locations. Click on the Location tab to navigate to the location table.

12.1.3. Importing Bander Information from Band Manager

Begin the process by opening Band Manager and navigating to the export function by clicking this sequence of buttons: **Utilities**, **Program Lookups**, **Banders**, and **Export**. Once again, select dBase IV as the appropriate format and click **Export**. Name the file and save it in the Band Manager Export folder. Switch to Bandit and click on the **File** menu and then select **Import** from **Band Manager** → **Banders**. A dialog box will appear asking you to locate the file containing the data you exported from Band Manager. Navigate to the Band Manager Export folder and click on the banders file you exported from Band Manager and wish to import into Bandit. An **Import Field Mapping** box will appear. About 2/3 of the way down the window on the right side, just at the top of the gray area, there will be an **Arrange By** drop-down list. Select Matching Names from the drop-down list if it is not already there and then click the **Import** button at the bottom right of the window. An **Import Summary** box will appear showing you how many banders were successfully imported. Make sure this is the same number of banders you had in Band Manager. Click **OK**. An **Import Banders Result** box will appear showing you how many banders were actually added to the Bandit bander information table. Click **OK**. The banders will now be in your table, added to the bottom if you already had banders entered into the table. You can now add the email addresses and phone numbers for sub banders by clicking in the appropriate fields on the banders information table. The banders information table is located by clicking the **Settings** section button and then the **Bander Info** tab.

12.1.4. Importing Banding and Recapture Records from Band Manager

Begin the process by opening Band Manager and selecting the file containing the banding records you wish to import into Bandit. Open that file and then click **Export** and go through the Band Manager export

fields process. Select the `dBase IV` format and click **Export**. Name the file and save it in the Band Manager `Export` folder. Switch to Bandit and click on the **File** menu and then select **Import** from **Band Manager** → **Bands/Recaptures**. A dialog box will appear asking you to locate the file containing the data you exported from Band Manager. Navigate to the Band Manager `Export` folder and click on the banding records file you exported from Band Manager and wish to import into Bandit. An Import Field Mapping box will appear. About 2/3 of the way down the window on the right side, just at the top of the gray area, there will be an **Arrange By** drop-down list. Select `Matching Names` from the drop-down list if it is not already there and then click the **Import** button at the bottom right of the window. An Import Summary box will appear showing you how many bands were successfully imported. Make sure this is the same number of bands you had in Band Manager. Click **OK**. An Import Banders Result box will appear showing you how many band records were actually assimilated into the Bandit banding records table. Click **OK**.

12.2. Importing from Other Sources

Banders who have never used Band Manager, but maintain files in other formats, such as Excel, Access, SQL Server, dBase, etc. can also import data into Bandit if they wish to do so. In the **File** menu, choose **Import Data From File**. It is recommended that, when the data are exported from the other program, they be in tab-delimited (`.tab`), comma-delimited (`.csv`), Excel spreadsheet (`.xls`), or dBase (`.dbf`) format.

Figure 12.1. Import Data from File
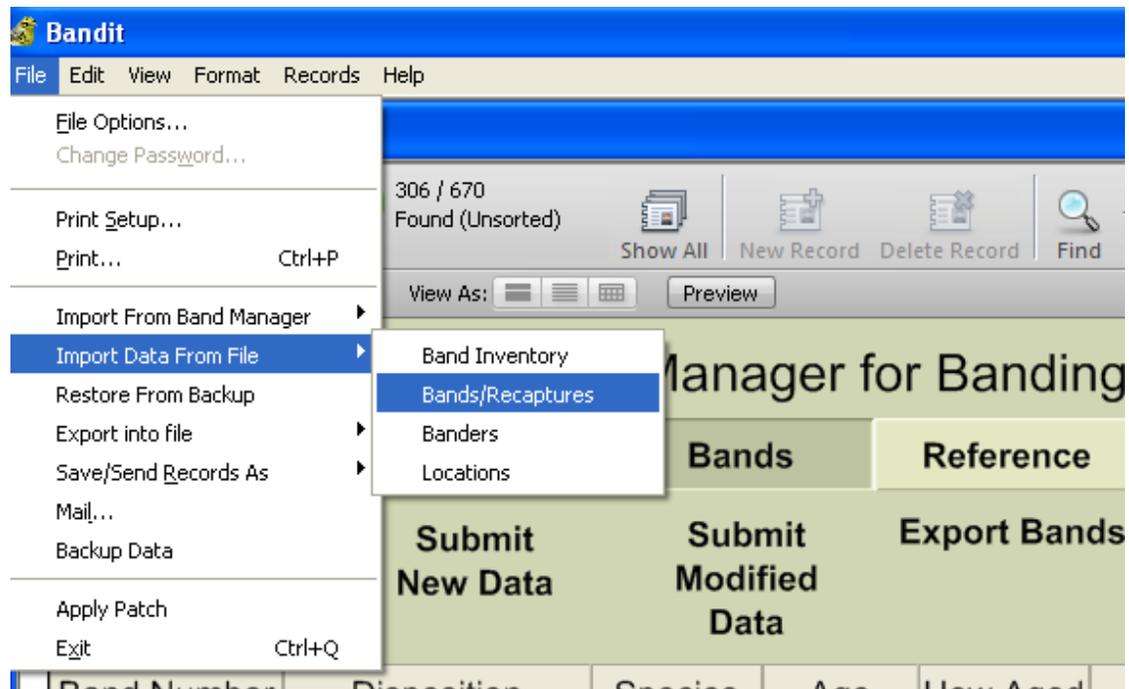
After the **Import Data From File** choice is made, choose the file and note that a Field Mapping screen appears. In the **Arrange By** box, the recommended choice is `matching names`, but this option will not work unless you have already named your fields to match those in Bandit. For fields that do *not* match, click and drag the target fields up or down, using the double-sided arrow icon, to match the data you see from the source fields on the left. You must also make sure that any field you want to import has a thick arrow, not a thin line connecting from the source side to the target side. If the data you are importing has headings in the first row, you should click the option **Don't import first record** at the bottom of the screen.

Figure 12.2. Import Field Mapping Screen
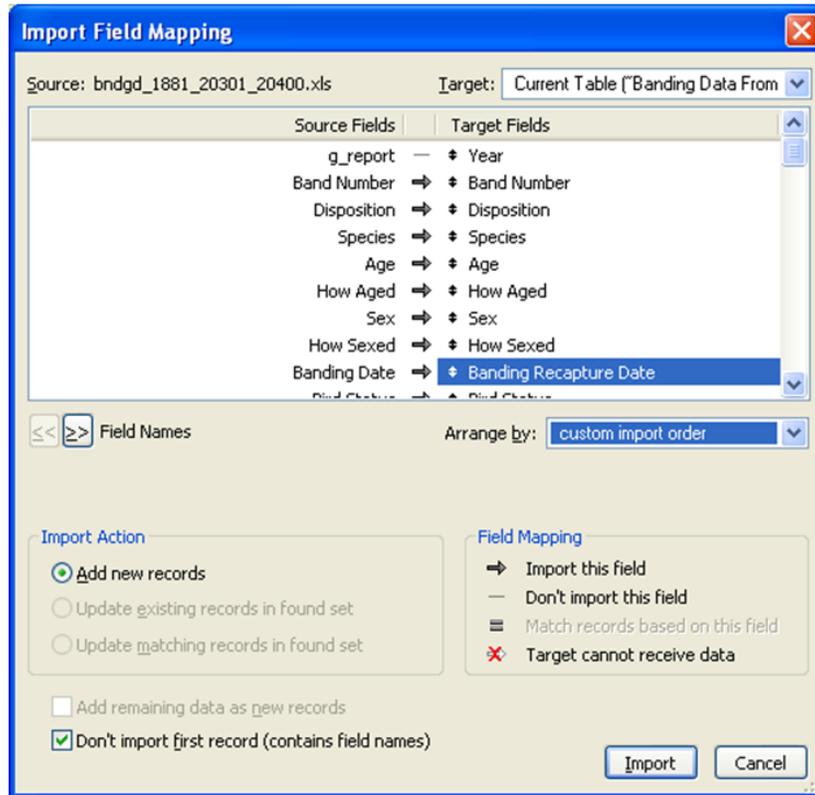
When using this import option, it is important to note that the band number can be separated into two fields: prefix and suffix or together in one field. Also, the date can be expressed as one field or three separate fields. The Field Mapping screen allows for either option. If Band Number is in one field it can include a dash between prefix and suffix or not.

Tip

In Excel, numbers with dashes have the advantage that the leading zeros are maintained on 3-digit prefixes. If you have your data in separate fields or don't want to use dashes, put an apostrophe (single quote) in front of the band number to tell Excel to treat the value as text rather than as a number.

Tip

Dates can be imported as either 3 separate fields: month, day, and year, or as one combined field. If you are using one combined field, put the fields in the order month, then day, then year, and separate the parts with either slashes '/', dashes '-', dots '.', or semicolons ';' (but you must use the same separator character in both places). Either two- or four-digit years can be input, but note the following: two-digit year dates are converted into four-digit year dates based on the year in which the date is entered into Bandit, with the assumption that the four-digit year date should be in either the next 30 years, or the preceding 70 years.

12.3. Exporting from Bandit

Bandit has several ways of exporting data. You can export data to Adobe Portable Document Format (PDF), Microsoft Excel Worksheet format, or a variety of other formats, including tab-delimited text, comma-delimited text, SYLK, DBF, HTML Table, and XML.

Note

Microsoft Excel 2003 has a limit of 65,536 rows. If you choose the Microsoft Excel Worksheet (`.xls`) format for export, only the first 65,536 records will be exported.

12.3.1. Exporting Bands, Band Inventory, Banders, Locations and Recapture Records

To export bands from Bandit go to the **File** menu. Then go to the **Export Into File** sub menu and select **Bands**. A dialog box will appear asking you to name the file you want to export the records to, where you want to put the file, and the type of file you want to create. When you click **Save** (or just press Enter) a new dialog box will appear allowing you to select the fields you want to export and the order in which you want them to appear in the exported file. A number of fields have already been selected and will appear in the box labelled **Field export order**. You can select additional fields from the list on the left and click **Move** to add it to the **Field export order** box, click a field in the **Field export order** box and click **Clear** to remove the field from the export list, or click and drag up and down with your cursor on the little double-pointed arrow icon to move the fields up or down in the **Field export order** box. Finally, click Export to complete the operation.

Use a similar procedure to export band inventory, banders, locations, and recaptures. Each of these items appears under the **Export Into File** sub menu under the Files menu. To export band inventory go to the **File** menu. Then go to the **Export Into File** sub menu and select **Band Inventory**. To export banders go to the **File** menu. Then go to the **Export Into File** sub menu and select **Banders**. To export locations go to the **File** menu. Then go to the **Export Into File** sub menu and select **Locations**. To export recaptures go to the **File** menu. Then go to the **Export Into File** sub menu and select **Recaptures**.

Tip

Bander information, banding locations, and wing and weight data can also be exported directly from the tabbed screens associated with each of these collections in the Settings section. See Chapter 3, *Bandit Settings*.

12.3.2. Exporting Reference Tables

To export reference tables go to the tab page with the reference table you want to export. Then click the **Export** button in the upper left hand corner of the screen. Enter in the file name and select the file type. Tab-separated Text Files (`*.tab`), comma-separated Text Files and Excel Files (`*.xls`) are the most common.

Chapter 13. Bandit Backup File

13.1. Creating a Backup File

Each time you open Bandit you will see a pop-up box that asks you if you wish to create a backup file. It is recommended that you always choose **OK**. By selecting **OK**, a backup file is created and saved before you start making changes to the data. The backup file is normally saved into your `My Documents` folder (`Documents` folder on the Macintosh) but you have the option of choosing an alternate location. Then, if something happens while you are in the program, you can use the backup file to restore the Bandit data up to the date of the backup. By selecting OK at the beginning of each session, there is no need to worry about being unable to recover from unanticipated problems. To identify the backup files, Bandit gives them a special name which includes the date and time the backup was created. (`Bandit Data bak 200803141549.fp7` is the backup created March 14, 2008 at 3:49pm.) You may delete these files anytime you wish, but you may want to keep at least the latest two or three files in case you need to use them. You may also create a separate folder and move them there after they are created. You can also rename or add to the name of the files to help you keep them straight.

In addition there is ability to create backup file at any time by using **Backup Data** function under the **File** menu.

Tip

For additional protection against unforeseen circumstances such as disk crashes, operating system corruption, etc., it is a good idea to store your backup files on a separate disk from the one containing your primary data file. You can store the files on a removable disk such as a CD, a USB-based drive, or a different hard drive in your system, if you have more than one.

13.2. Restoring from a Backup File

If you inadvertently delete your data file or you feel you have corrupted your data file to the point you must step back to a previous version, restoring from a backup file may be necessary. Keep in mind that if you choose to restore from a backup file, addition or corrections made since that file will be lost.

Restoring data from a backup file created in Bandit 1.02 or later is quite simple. From the **File** menu at the top of the screen, click **Restore From Backup**. Navigate to your `My Documents` folder (`Documents` folder on the Macintosh) and select the backup file that you wish to use to restore your data. Choose "OK" on the pop-up dialog box. Another pop-up box will appear showing you the results of the restore process.

Restoring data from a backup file created in Bandit 1.0 is a little more complicated. After you select the backup file you wish to use to restore your data, a series of dialog boxes will appear asking you to put in your Name and Password. In the name field, enter `user` for the name and leave the password field blank. It may be necessary to repeat this many times. At the end of this process, the pop-up box will appear showing you the results of the restore process.

Appendix A. Tips and Shortcuts

On the Bands and Recaptures screens (both Details and Table data entry modes) you can duplicate the contents of the current record into the next record by selecting **Duplicate** from the **Records** menu or using the keyboard shortcut (Windows: *CTRL-d*; Macintosh: *CMD-d*).

To duplicate (ditto) the contents of a field from the same field in the previous record, type Windows: *CTRL-'*(single quote mark); Macintosh: **CMD-'** (single quote mark). Add the shift key (Windows: ***SHIFT-CTRL-'*** (single quote mark); Macintosh: ***SHIFT-CMD-'*** (single quote mark)) to do the duplicate (ditto) and automatically tab to the next field.

To enter today's date, type Windows: **CTRL-**(dash); Macintosh: **CMD-**(dash). ???

To enter the current time, type Windows: CTRL-(semicolon); Macintosh: CMD-(semicolon).

To go to the next record, type CTRL-(down arrow). To go to the previous record, type Windows: CTRL-(up arrow).

To go to the first field in the record, type Windows: CTRL-(left arrow); Macintosh: CMD-(left arrow).

To go to the next field, type Tab. To go to the previous field, type Shift-Tab.

To enter Find mode, type Windows: CTRL-f; Macintosh: CMD-f. To enter Browse mode, type Windows: CTRL-b; Macintosh: CMD-b.

To copy all of the records to the clipboard, hold down ALT-SHIFT (OPT-SHIFT on the Macintosh) and select **Copy** from the **Edit** menu. Then go to another application, like Word or Excel, set an insertion point and select **Paste**.

Appendix B. Bandit Band Record

Within Bandit, the Band Record is the primary place where data is stored about a banding. Although many of the fields contain primary information about banding, some of the fields are used for error checking. In this Appendix, only the fields of general interest to banders will be described.

Additional Errors	Additional error text associated with the banding record.
Age	User-visible age code in either alpha or numeric form, depending on the setting in the preference section.
Age Code[1]	Numeric age code equivalent of the Age field.
AOU[1]	Numeric species id based on the 4-digit numbering scheme originally developed by the American Ornithologists' Union.
Aux Marker Band Color	The code referencing the color of the auxiliary marker band.
Aux Marker Code	The alphanumeric string imprinted on the band.
Aux Marker Code Color	The code referencing the color of the alphanumeric string imprinted on the band.
Aux Marker Combined[1]	A calculated field combining all of the given auxiliary marker-related fields.
Aux Marker Type	The type of auxiliary marker used on the bird.
Band Number	Calculated version of the band number containing the prefix, a dash, and the suffix.
Band Size	Coded size of the band.
Bander ID	Identifier for the bander who handled this bird. If this was an official sub-bander, this should be the sub-bander ID.
Banding Date[1]	Date the bird was banded.
Bill Height	Height in millimeters of the bill.
Bill Length	Length in millimeters of the bill.
Bill Width	Width in millimeters of the bill.
Bird Status[1]	The 3-digit code indicating the status of the bird after the banding operation was completed.
Bird Weight	The weight in grams (mass) of the bird at the time it was captured.
Body Molt	Whether or not body molt was observed.
Brood Patch	Presence and size of the brood patch.
Capture Time	Time of day the bird was captured.

[1]Data field submitted as part of the banding record. These fields must be error free or have the errors bypassed if able with remarks.

Cloacal Protuberance	Presence and size of the cloacal protuberance.
Culmen Length	Length in millimeters of the culmen.
Date Received	Date the band was received.
Disposition[1]	Code indicating what happened to the band.
Errors	Error text associated with the banding record.
Ectoparasites	Whether or not ectoparasites were present on the bird.
Eye Color	Color of the eyes of the bird.
Fat Score	Amount of migratory fat found on the bird, using a scale of 1-6.
How Aged[1]	Code indicating how the age of the bird was determined.
How Captured	Code indicating how the bird was captured.
How Sexed[1]	Code indicating the method used to determine the sex of the bird.
Left Leg Color 1	Color of the 1st auxiliary marker on the left leg for non-coded markers.
Left Leg Color 2	Color of the 2nd auxiliary marker on the left leg for non-coded markers.
Left Leg Color 3	Color of the 3rd auxiliary marker on the left leg for non-coded markers.
Net Nest Cavity Designator	How (or from where) the bird was captured. Could be Mist Net, Nest, Box, etc.
Net Nest Cavity Number	Specific location where bird was captured from.
Prefix[1]	The 4-digit prefix of the band number. The value has leading zeros if necessary.
Present Condition	The condition of the bird.
Right Leg Color 1	Color of the 1st auxiliary marker on the right leg for non-coded markers.
Right Leg Color 2	Color of the 2nd auxiliary marker on the right leg for non-coded markers.
Right Leg Color 3	Color of the 3rd auxiliary marker on the right leg for non-coded markers.
Remarks[1]	Free-form text for remarks relating to this bird. May indicate additional information about aux markers, methods used, etc. Only the first 100 characters of the remarks are included in the data submission.
Replaced Band Number[1]	If the band is a replacement band or an additional band put on a bird, this field contains the band number of the original band.

Reward Band Number[1]   5- or 6-digit reward band number.

Scribe   Initials or reference to the person writing down information at the banding site.

Sex   The sex of the bird in coded form. Can be either alpha or numeric code, depending on what the user requested in preferences.

Sex Code[1]   Numeric version of the sex of the bird.

Skull   Degree of skull pneumatization.

Species[1]   The 4-letter or 4-digit code representing the species of the bird in either alpha or numeric format, depending on the preference set by the user.

Species Name   The name of the species of the bird.

Submission Date   The date the banding record was (last) submitted.

Suffix[1]   The 5-digit suffix of the band number. This number has leading zeros, if necessary. The 5 digits of the band number stored here are actually the last 5 digits of what is really a 6-digit suffix.

Tail Length   Length in millimeters of the tail of the bird.

Tarsus Length   Length in millimeters of the tarsus of the bird.

Tests Performed   The tests that were performed on the bird.

Weight Time   The time of day the bird was weighted, including hours and minutes, using the 24-hour clock.

Wing Chord   The length in millimeters of the wing chord of the bird.

Appendix C. Data Editing Error Messages

The table below lists all of the errors flagged by Bandit as it edits the data, along with an explanation of the cause of the error and the suggested way to fix it. Many of the edits apply to banding and recapture records, so these errors are grouped together. Errors associated with banding locations are grouped separately.

Error Message	Cause	Resolution	Bypassable?	Module
Banding and Recapture Data				
Age/Sex unlikely on this date	Species-Age-Sex-Month combination invalid.	See Species-Age-Sex-Month table for valid combinations. **May be bypassed with remarks.	Yes**	Bndg, Recap
Aux. Marker Type VS other marker-related info	Aux Marker Type field is blank but some other marker-related field is populated	Verify if an Aux Marker was used and choose correct marker type if not, empty other marker-related fields.		Bndg, Recap
Bad Recapture Age VS Banded Age	Recapture Age does not agree to Banding Age (based on banding and recapture dates).	Verify Age and Dates on both sides (banding and recapture).		Recap
Bad Recapture Sex VS Banded Sex	Sex should correspond on banding and recapture records.	Verify sex of recaptured bird.		Recap
Bad Recapture Species VS Banded Species	Species are not the same for same band number.	Verify recapture band number; Verify species.		Recap
Bad Size	Species is not supposed to wear this size of band.	Go to species reference table to see the lisBndg, Recap of appropriate sizes. May be bypassed with an explanatory remark.	Yes	Bndg
Band Found in Bands Inventory. Incorrect disposition code used	Disposition code is set to F while the banding record is in inventory.	Set disposition code to R or verify band number.		Recap
Band Not Found in Bands Inventory. Make sure this is not a foreign recapture	Disposition code is set to R and the banding record is not in inventory.	Verify disposition code. May be bypassed.	Yes	Recap
Banding Date Greater Than Current Date	Banding Date greater than Current Date	Verify banding date. Verify if system date is current.		Bndg

Error Message	Cause	Resolution	Bypassable?	Module
Banding Date VS Received Date	Banding Date less than Date Received	Make sure Received Date in band inventory is set to proper value		Bndg
Duplicated band number	This band number already exists.	Fix band number.		Bndg
How Obtained VS Banding Status	The banding record shows that this bird has an auxiliary marker but the how obtained code shows that the federal band, not the auxiliary marker, was read from a distance.	If the federal band was determined via the auxiliary marker, modify the how obtained to 29. If the federal band was read, bypass the error.	Yes	Recap
Invalid Age	Age is not in the list.	Choose an Age from the drop-down list.		Bndg, Recap
Invalid Band Number	Not numeric band number or Band Number Length is not equal to 9.	Fix band number (prefix and suffix).		Bndg, Recap
Invalid Banding Date	Banding Date greater than Current Date or Banding Date less than Date Received.	Make sure Received Date in band inventory is set to proper value. Verify banding date.		Bndg
Invalid Bird Status VS Tests Performed	If Bird Status indicates blood sample was taken, Test Performed needs to reflect this (and vice versa.)	Make sure bird status reflects test performed information.		Bndg
Invalid Color(s)	Color of markers or Color of Code are not correctly coded.	Choose appropriate colors from associated drop-down lists.		Bndg, Recap
Invalid How Aged code	How Aged value is not in the list of values.	Make sure the How Aged field is either empty or contains a value from the drop-down list.		Bndg, Recap
Invalid How Obtained	How obtained is empty or not in the list of acceptable values	Verify How Obtained		Recap
Invalid How Obtained VS Present Condition	Present condition of the bird is not corresponding to how obtained code.	Verify how obtained and present condition (*some cases may be by-passed)	*	Recap
Invalid How Sexed code	How Sexed value is not in the list of values.	Make sure the How Sexed field is either empty or contains a value from the drop-down list.		Bndg, Recap
Invalid Location	Location is empty or not verified.	Make sure Location field is not empty. Go to Settings screen, Locations tab. Verify location		Recap

Error Message	Cause	Resolution	Bypassable?	Module
		information. Valid column has to be Yes. (Hint: Put your cursor over any No value to see what the errors are.)		
Invalid Marker Type	Marker Type is not correctly coded.	Choose Marker Type from drop-down.(*on recapture site is bypassable)	*	Bndg, Recap
Invalid Present Condition	Present Condition of the bird/band is empty or not in the list of acceptable values	Verify Present Condition		Recap
Invalid Recapture Date	Recapture Date greater than Current Date or is empty.	Verify recapture date.		Recap
Invalid Recapture Date VS Date Received	Recapture Date less than Date Received.	Verify recapture date.		Recap
Invalid Replaced Band Number	If Disposition code is 5, 6, S, or D, Replaced or Second Band Number has to be reported, and the length of this number must be 9. Otherwise this field has to be empty.	Verify disposition and replaced band number fields.	Yes	Bndg, Recap
Invalid Reward Band Number	If Status indicates this is a reward band, the length of Reward Band has to be 5 or 6.	Verify status and reward band fields.		Bndg
Invalid Sex	Sex is not in the list.	Choose a Sex from the drop down list.		Bndg, Recap
Invalid Species	Species is not entered or is not in the species list.	Verify species.		Bndg, Recap
Invalid Status VS Disposition Code	If this bird has been double banded (Disposition code D or S,) Status needs to reflect this.	Verify disposition and bird status.		Bndg
Invalid Status VS How Sexed	How Sexed is L (laparotomy or laparoscopy) but Status does not reflect this.	Status code must end with 11, 12, or 85 if laparotomy or laparoscopy was doneBndg, Recap.		Bndg
Invalid Status VS Marker Type Code	Bird status needs to correspond to Aux Marker Type.	Verify Status and Aux Marker Type fields.		Bndg
Location used is not valid	Location is empty or not verified.	Make sure Location field is not empty. Go to Settings screen, Locations tab. Verify location information. Valid column		Bndg, Recap

Error Message	Cause	Resolution	Bypassable?	Module
		has to be Yes. (Hint: Put your cursor over any No value to see what the errors are.)		
Marker Code is too long	Aux. marker code is longer than 5 char.	Verify Aux Marker Code field.	Yes	Bndg, Recap
Recapture date before banded	Banding date is greater than recapture date.	Verify dates.		Recap
Recapture date before or on banding date	Banding date is greater than or equal to recapture date.	Verify dates. *By-passable if dates are the same.	*	Recap
Remarks are required for selected how obtained code	How obtained shows that status of the bird was changed, but remarks are empty.	Explain in the remarks how status of the bird was changed.		Recap
Replaced band?	The selected present condition suggests that the band may have been replaced on this bird.	If the band was not replaced and bird released without a band, bypass the error. If the band was replaced, the replacement should be reported in the banding record for the new band and this recapture deleted.	Yes	Recap
Same-day recapture record	This bird was already entered into the system as recaptured on this date.	If appropriate, delete one of the recapture records. By-passable.	Yes	Recap
Sex in Banding Record must be set to correct sexed upon recapture value	Sex at banding is unknown, but is known at recapture time.	Sex in banding record needs to set to 6 or 7 depending on Sex in the recapture record.		Recap
Species unlikely in state	Species-Region combination questionable.	See Species-State-Month reference table for valid combinations. **May be bypassed with remarks.	Yes**	Bndg, Recap
Species unlikely on date	Species-Month combination questionable.	See Species-State-Month reference table for valid combinations. **May be bypassed with remarks.	Yes**	Bndg, Recap
Status code requires remarks	Remarks field is empty but the status code entered requires an explanation in the remarks field.	Add appropriate information to the remarks field. See the BBL web site http://www.pwrc.usgs.gov/ BBL/manual/status.htm for details. (Status codes ending with 25 and 29 require a marker type to		Bndg

Error Message	Cause	Resolution	Bypassable?	Module
		be entered in the remarks field. Status codes ending with 06 or 85, or codes starting with 5, 7, or 8 require an explanation to be entered in the remarks field. Status codes starting with 2 require capture location and date to be entered in the remarks field.)		
Undefined Age	Age is empty.	Choose an age from drop-down list.		Bndg, Recap
Undefined Bird Status	Bird Status is empty.	Set Bird Status field from the choices in the drop-down list.		Bndg
Undefined Record Type	Disposition code is empty or invalid.	Choose a Disposition code from the drop-down list.		Bndg, Recap
Undefined Sex	Sex is empty.	Choose a Sex code from the drop-down list. *By-passable for recaptures.	*	Bndg, Recap
Location Data				
Direction from town not specified	Miles from nearest town/place is not empty, but direction is not provided.	Provide direction from town or empty miles from town field.		Loc
Invalid coordinates VS Region	Coordinates provided do not correspond to Country/State combination	Verify Latitude/Longitude and Country/State.		Loc
Invalid Country	Country is empty or invalid.	Choose a Country from the drop-down list.		Loc
Invalid County	US locations must have a county entered.	Choose a County from the drop-down list.		Loc
Invalid Description	Location Description is empty.	Enter a short description for this location.		Loc
Invalid Direction	Hemisphere values are incorrect.	Verify the hemisphere fields for both Latitude and Longitude.		Loc
Invalid Direction from town	Direction from town is not empty and is not in the list.	Choose correct direction from drop down list, or empty the field.		Loc
Invalid Lat	Latitude degrees must be in the range 0-90. Minutes and seconds must be in the range 0-59.	Verify Latitude (Deg, Min, Sec).		Loc
Invalid Lat Hem	Latitude hemisphere must be N (North) or S (South).	Choose Latitude Hemisphere from the drop-down list.		Loc

Error Message	Cause	Resolution	Bypassable?	Module
Invalid Location ID	Location ID is empty, not unique, or length is greater than 8 characters.	Set Location ID to correct value.		Loc
Invalid Location Precision	Location Precision is empty or invalid.	Choose Location Precision from the drop-down list.		Loc
Invalid Long	Longitude degrees must be in the range from 0 to 180. Minutes and seconds must be in the range 0-59.	Verify Longitude (Deg, Min, Sec).		Loc
Invalid Long Hem	Longitude hemisphere must be E (East) or W (West).	Choose Longitude Hemisphere from the drop-down list.		Loc
Invalid Minutes	Latitude and longitude minutes must be in the range 0 to 59.	Verify Minutes.		Loc
Invalid Region	Bandit is unable to find the region code based on Country/State provided.	Verify the Country and State fields.		Loc
Invalid Seconds	Latitude and longitude seconds must be in the range 0 to 59.	Verify seconds.		Loc
Invalid State	US and Canada locations must have State entered.	Choose State from the drop-down list.		Loc
Miles from town not specified	Direction from nearest town/place is not empty, but miles are not provided.	Provide miles or empty direction from town field.		Loc
Miles must be positive, numeric, preferably in range from 0 to 10	Miles are not numeric, not in range 0-999, or the length of the field is longer than 5 characters.	Verify Miles from town. Round miles to 1 (maximum 2) digits after point if needed. You may choose different town-miles-direction description if available.		Loc
Minutes/ Seconds do not correspond to the center of 1 degree block	If Location Precision is 60, minutes must be 30 and seconds must be 00.	Verify Minutes and Seconds or change Location Precision.		Loc
Minutes/ Seconds do not correspond to the center of 10 minute block	If Location Precision is 10, minutes must be 05, 15, 25, 35, 45, or 55 and seconds must be 00.	Verify Minutes and Seconds or change Location Precision.		Loc
Nearest Town is unknown	Nearest town/Place name field is empty.	Provide Nearest Town/ Place.		Loc
Negative Lat Deg	Negative value in location latitude degrees field.	Fix Latitude Dec field. (Hint: Set the hemisphere		Loc

Error Message	Cause	Resolution	Bypassable?	Module
		to E (East) or W (West) in the field following seconds.)		
Negative Lat Min	Negative value in location latitude minutes field.	Fix Latitude Min field.		Loc
Negative Lat Sec	Negative value in location latitude seconds field.	Fix Latitude Sec field.		Loc
Negative Long Deg	Negative value in location longitude degrees field.	Fix Longitude Dec field. (Hint: Set the hemisphere to E (East) or W (West) in the field following seconds.)		Loc
Negative Long Min	Negative value in location longitude minutes field.	Fix Longitude Min field.		Loc
Negative Long Sec	Negative value in location longitude seconds field.	Fix Longitude Sec field.		Loc
Not Numeric Lat Deg	Invalid character in latitude degrees field.	Latitude Deg field must be numeric.		Loc
Not Numeric Lat Min	Invalid character in latitude minutes field.	Latitude Min field must be numeric.		Loc
Not Numeric Lat Sec	Invalid character in latitude seconds field.	Latitude Sec field must be numeric.		Loc
Not Numeric Long Deg	Invalid character in longitude degrees field.	Longitude Deg field must be numeric.		Loc
Not Numeric Long Min	Invalid character in longitude minutes field.	Longitude Min field must be numeric.		Loc
Not Numeric Long Sec	Invalid character in longitude seconds field.	Longitude Sec field must be numeric.		Loc
Seconds do not correspond to the center of 1 minute block	If Location Precision is 1, seconds must be 30.	Verify Seconds or change Location Precision.		Loc

Appendix D. Alert Messages

The table below lists all of the pop-up alert messages displayed by Bandit along with the circumstance in which the message appears.

Error Message	Cause
Band Inventory	
Not all required fields are entered. Please enter all the fields.	When entering band spans into inventory, you must enter band number prefix, starting suffix, ending suffix, and band size.
One or more bands are already in the file for the range you specified. Please recheck your values.	When entering band spans into inventory, the band number range cannot include bands that are already in the file.
There are no unused bands in this span. Nothing to remove.	If you try to use the **Records** menu function **Remove Unused Bands from Inventory Record** on a span in the inventory that does not have unused bands you will see this message. Make sure your cursor is on the correct span before selecting this function. (The column **Unused Quantity** shows how many bands in the span are unused.)
Locations	
An error occurred while trying to add this location. Location IDs must be unique.	Every location must have a unique identifier associated with it. The identifier can be up to 8 characters long. The identifier is used on the banding record to refer back to the location.
The location x can not be deleted because there are x bands with this location.	In the **Locations** screen, check the value in the column **Bands Count**. If there is a non-zero value here, you cannot delete the location because there are banding records which reference this location. Make sure your cursor is on the correct location before trying to delete a location.
Bands	
There are no band records which match the filter request.	The filtering criteria you specified did not select any records. Look at all the possibilities in the filtering criteria and change it to match the records you want to see.
No band record to duplicate to.	The **Duplicate Record** function takes the values from the current record and copies them into the next record. If there is no next record, you will see this message.
Second Band x has been filled previously. Do you want to overwrite existing record?	For double-banded 1st band and double-banded 2nd band, if the record associated with the second band is already filled in, you will get this message. This is just a warning so you do not inadvertently overwrite previously entered data.
Second Band x not found. Please, provide correct second band number, or if it is correct, go to band	For a double-banded bird (disposition code D or S,) both the 1st band number and the 2nd band number must be in your inventory. If you meant to add an

Error Message	Cause
inventory and add the corresponding span in to the system.	additional band, use disposition code 6. If this is a replacement band, use disposition code 5.
Invalid Second Band Number.	The value in the **Second Band Number** field is not a valid band number.
Current Band x and Second Band x are the same. Please correct second band number.	The value in the **Second Band Number** field is not a valid band number.
Band x has status x. Recapture may not be reported for this band.	The status of the band (as indicated in the **Disposition** field) is undefined or indicates that the band (or record of the band) was lost or destroyed. You cannot report a recapture by clicking the **Report Recapture** button. (You may, however, add the recapture through the **Add Recapture** button on the **Recaptures** screen.)
Data Submission	
Permit number is not defined. Please go to Settings: Bander Info, and define permit number	Your permit number must be entered on the **Settings** screen before data submission can occur.
The country where submission has to be sent is not defined.	The country of submission (Canada or US) must be selected on the **Settings** screen before data submission can occur.
No valid data was found to be submitted.	The submission process only submits banding records which are either new or have changed since the last submission. Further, the records have to be error free before they can be submitted. Some errors can be bypassed, but you must select the **Bypass Errors** option on the banding record. Prior to submitting data, it is a good idea to use the *Banding Data to be Submitted* report (or the *By Location: Banding Data to be Submitted* report) to see what data will be submitted.
Recaptures	
There are no recapture records which match the filter request.	The filtering criteria you specified did not select any records. Look at all the possibilities in the filtering criteria and change it to match the records you want to see.
Reports	
No records found for this report.	The report cannot be produced because there is no data available for this report.
Importing	
This process may take a long time, please let it finish (you may want to run it during night). Alert - no edits will be performed on inventory records. No duplicated records will be loaded. If you are not sure if data is valid, you better use Add to Inventory function instead.	This warning message appears when the **File** → **Import from Band Manager** → **Band Inventory** menu item is selected.
Import Band Inventory Error: Band x already exists in inventory. Cannot import this band.	Duplicate records are not allowed in the band inventory.

Error Message	Cause
Miscellaneous	
Function is under construction.	May appear when a capability has been partially implemented.
Program Expiration: This version of Bandit 0.x has expired. Contact the USGS Bird Banding Lab for a new version.	Your version of Bandit is an old version. The new versions do not expire.

Appendix E. Frequently Asked Questions about Bandit

Q: How do I import banding data with bands that have a 3-digit prefix?

A: Make sure the file you are importing has lead zeros. In Excel, you must put an apostrophe in front of the number for the lead zero to stay.

Q: If I am importing a file from another program, must I have a dash in the band numbers?

A: No. Bandit with take the band number with or without dashes.

Q: When I download the Mac version, my computer says it doesn't recognize the file `Bandit_1.02.bin`. How do I proceed?

A: You need to either change the extension to `.dmg` or open it with Disk Utility.

Q: I am trying to install the program and I get a message saying "Error opening registry key, access denied". How do I proceed?

A: You need administrative access to install the program. Contact your I.T. support staff.

Q: My email program is not sending submission data automatically. What email address should I use to submit my banding data?

A: `<Bandit@usgs.gov>` or `<Louise.Laurin@ec.gc.ca>` for Canadian Banding Office submissions.

Q: I'm having trouble getting the program to work. Where do I go to get help?

A: Send an email request for help to the Bandit Help Desk, `<BanditHelp@usgs.gov>`, available also from the **Help** menu or the opening screen. You can also call the Help desk at 301-497-5566.

Q: If I import data from Band Manager, will Bandit recognize if those data have already been submitted?

A: Bandit does not recognize that schedules have already been submitted via Band Manager. To avoid re-submitting the data, they must be marked as submitted in Bandit. In version 2.0 and above, use the "Mark As Submitted" function. In older versions you must click the "submit" button, but stop the email. This will mark the data as "submitted". You can then add (or import) new data and only it will be sent. If you have a mix of previously-submitted AND new data, mark only the previously-submitted.

Q: Can I create user-defined fields in Bandit?

A: In versions of Bandit prior to version 2.01 you cannot. Starting from Bandit version 2.01 this feature is available. See documentation chapter 5.5. (User-defined Fields) for details.

Q: How can I filter on fields other than band number?

A: See Chapter 9, *Find Mode*.

Q: Is there a way to copy identical data from one record to the next?

A: Yes,to duplicate an entire line of data, make sure you have clicked any box in the line to be repeated. Hold the control key down while hitting the letter "D". This will copy all of the data (all fields) from this line to the next line. If you only want to copy data from one field to the next line, click in that

field on the line below the data you want to copy and hold the control key down while hitting the apostrophe(') key. This will copy the data from the line above for that field only.

Q: How do I restore from a BANDIT backup file?

A: Use Restore From Backup function under File menu. See Chapter 13, *Bandit Backup File*

Q: I chose ALPHA for entering data but used Numeric Codes. I am now getting an error message. Can I correct this by re-choosing NUMERIC?

A: Yes.

Q: How do I export my data from Band Manager so I can import it in to Bandit?

A: NOTE: You cannot copy your Band Manager files via Windows Explorer, you must follow the steps below.

Band Inventory

Open Band Manager

Click Inventory

Click Export

Select Export to .dbf (preferred) or .xls format

Click Export

Name the file and click Save

The file will be saved in the Export Directory of Band Manager. If you saved it as Excel, it should be opened in Excel and saved as a newer version (Bandit will not accept the older version). You can then import the file into Bandit. (or save the file onto disc, etc.)

Subs

Open Band Manager

Click Utilities

Click Program Lookups

Click Banders

Click Export

Select Export to .dbf (preferred) or .xls. Format

Click Export

Name the file and click Save

The file will be saved in the Export Directory of Band Manager. If you saved it as Excel, it should be opened in Excel and saved as a newer version (Bandit will not accept the older version). You can then import the file into Bandit. (or save the file onto disc, etc.)

Locations

Open Band Manager

Click Utilities

Click Program Lookups

Click Locations

Click Export

Select Export to .dbf (preferred) or .xls. Format

Click Export

Name the file and click Save

The file will be saved in the Export Directory of Band Manager. If you saved it as Excel, it should be opened in Excel and saved as a newer version (Bandit will not accept the older version). You can then import the file into Bandit. (or save the file onto disc, etc.)

Bands (banding datafile)

Open Band Manager

Click Data

Select and open appropriate .dbf file

Click Export

Follow instructions regarding "Export Setup"

Click Export

Select Export to .dbf (preferred) or .xls. Format

Click Export

Name the file and click Save

The file will be saved in the Export Directory of Band Manager. If you saved it as Excel, it should be opened in Excel and saved as a newer version (Bandit will not accept the older version). You can then import the file into Bandit. (or save the file onto disc, etc.).

Q: I have gotten a message that a file is corrupted. How do I recover it?

A: To recover a damaged file:

On Windows machines, press Ctrl+Shift while double-clicking the Bandit icon on your desktop. Hold the keys down until you see the "Open Damaged File" dialog box.

On Mac OS X machines, press Option + command while double-clicking the Bandit icon on your desktop. Hold the keys down until you see the "Open Damaged File" dialog box.

In "Open Damaged File" dialog box, browse to Bandit installation directory, choose **Bandit App.BND** file and click select. Wait until recovery process for this file is finished, click ok, and

when you see "Open Damaged File" dialog box, select **Bandit Data.BND** file. When both files are recovered, cancel "Open Damaged File" dialog box.

During the recovery process, Bandit:

1. Creates a new file.

2. Renames any damaged files by adding "Old" to the end of the filenames (for example, "Bandit Data.BND" is renamed to "Bandit Data Old.BND").

3. Gives the (new) repaired file the original name(Bandit Data.BND).

If you experience unusual behavior in the recovered files, you should revert to a backup copy (explained here) that was made before the file became corrupt, or contact Help for technical assistance. After you verify your data is correct, you can delete old files from bandit installation directory (Bandit Data Old.BND, Bandit App Old.BND).

Appendix F. Release Notes

F.1. Version 3.0 (released 01/20/2011)

Version 3.0 contains several new major features along with a significant number of fixes, refinements and enhancements. A summary of the changes is given below, along with references to the relevant sections containing more information, as appropriate.

1. Added records into the table for editing Region VS Coordinates (St. Helena - region 001-Africa)

2. Import Bands from File bug is fixed (only records in found set were imported, not all records)

3. Status X85 may allow color marker (bug fixed)

4. Falkland Islands (FK) flyway fixed (0 changed to 8)

5. Marker field added to the "Banding Data to be Submitted Report"

6. Status X85 may allow blood sample taken (bug fixed)

7. Two species added 3651, 6113

8. LO_HI_LAT_LON_REGION table reloaded

9. How Obtained table loaded. Fields How Obtained Code and Description added to Recapture module. Default =89

10. Locations Layout created to make it easier deal with locations (sort, search, view as table or detail et.) Locations tab from Settings screen is removed.

11. Nearest Town, Miles From Town, Direction From Town fields were added to the location record.

12. Banding Submission is separated. There are 2 functions: Submit New Data and Submit Modified Data.

13. Map interface added to the Location (see layout Locations With Map) Map zoom level field added to location record (not to be sent to BBL yet)

14. Country-State-County table reloaded.

15. Same Day Recapture error is by-passable now, but only one recapture per day(the first received) is going to be accepted by BBL. Currently only "foreign" recaptures are loaded into BBL Database.

16. Undo/Redo command are available in some simple modifications (typing, pasting)

17. Status bar moved to the top of the screen from the left part of it (FileMaker 10 related change)

18. Link to www.reportband.gov added to the help menu.

19. Function "Show Local Map" added to the location detail screen. The map functionality may be available only if there is Internet connection.

20. Remarks field length extended to 250 char.

21. Email to the Bandit Help Desk will be prepopulated with some system info.

22. Acceptable band sizes for Northern Pygmy Owl (3790) changed from 2,3,4 to 3,3A,4

23. Total Bands count is available on inventory screen (this is the count of individual bands for the currently shown list of spans).

24. "Aux Marker Combined" field will not be calculated unless an Aux Marker Type has been chosen. "space" is not going to be kept in Aux Marker Code field.

25. Band Size, Lat Float, Long Float, Location Coordinates fields are available on Banding screen. (not modifiable).

26. Size 1D added as acceptable size for multiple species.

27. Error messages lookup is available in "Help" menu and in "Reference" screen.

28. Explanation what needs to be in Remarks is shown on Band Detail screen near remarks (based on bird status code).

29. Bird Status 640 and 685 are not acceptable.

30. Backup Data function added to the "File" menu.

31. "Add to inventory" bug fixed (more checks performed before adding bands).

32. Species Name for species 0985 changed from Dark-rumped Petrel to Hawaiian Petrel, and the four-letter alpha code from DRPE to HAPE.

33. Import Bands/Recaptures bug fixed (the "banding date" label is now "Banding Recapture Date", but it needs to be matched manually as well as Second Band field.

34. New colors added to the color lookup table (to be used in color markers).

35. Upper limit of weight for species 6580 changed from 10 to 12 for both sexes.

36. Size 4A added as valid band size for Cooper's Hawks

37. Validation to compare empty Aux Marker Type to non-empty other marker related fields added.

38. "Band Edits" tab under settings renamed into "Optional Validations".

39. Banding Info added to the recapture detail screen.

40. Recapture Age VS Banding Ade validation added.

41. "Save As PDF" option has been removed. In order to save as pdf, choose "Print" and use print to file option with Adobe PDF, or PDF Creator as a printer instead.

42. "Find Related Bandings" and "Find Related Recaptures" buttons are available now on Location (detail) screen.

43. "Delete All Found Recaptures" function is available under records menu on Recapture screens.

44. Recapture validations added: "Invalid How Obtained VS Present Condition", "Remarks are required for selected how obtained code", "Replaced band?", "How Obtained VS Banding Status".

45. Option to choose do not send email automatically added. See it on the Settings screen.

46. Record Status flag added to the banding record. M - modified after submission, N - new record to be submitted, S -submitted.

47. Species 0012, 1441, 7221, 7702, 4172 are added; Some Species Names and/or Alpha codes were modified.

Below is the list of species affected by this change:

AOU	NEW ALPHA	NEW NAME	NOTES
7310	TUTI	TUFTED TITMOUSE	
2300	WISN	WILSONS SNIPE	
3152	AFCD	African Collared-Dove	
8100	AFSI	African Silverbill	
7900	AKIK	Akikiki	
8010	AKOH	Akohekohe	
1820	AMFL	American Flamingo	
4010	ATTW	American Three-toed Woodpecker	
9141	ARRW	Arrowhead Warbler	
2870	BLOY	Black Oystercatcher	
8101		Bronze Mannikin	Was already BRMA
9116	BRTR	Bronze Mannikin	
3814	BTPA	Brown-throated Parakeet	
3181	CADO	Caribbean Dove	
7621	CCTH	Clay-colored Thrush	
3450	COBH	Common Black-Hawk	
7720	DSFL	Dark-sided Flycatcher	
3891	EAQU	Eared Quetzal	
4170	EWPW	Eastern Whip-poor-will	
6960	EYWA	Eastern Yellow Wagtail	Opens up YEWA for Yellow Warbler
7613	EYTH	Eyebrowed Thrush	
7390		Gray-headed Chickadee	THIS WAS ALREADY GHCH!!
7730		Gray-streaked Flycatcher	NO AFFECT ON ABBR.
0890		Great Shearwater	NO AFFECT ON ABBR.
7870		Greater Akialoa	NO AFFECT ON ABBR.
7423	GNLA	Greater Necklaced Laughingthrush	
4271	GVIO	Green Violetear	
4934	HIMY	Hill Myna	
7422	HWAM	Hwamei	
9132	JAVI	Jamaican Vireo	
7930	KAKA	Kakawahie	
7700	HAEL	Hawaii Elepaio	

4551	LSFL	La Sagra's Flycatcher	
4190	LEPA	Least Pauraque	
2790	LRSP	Lesser Sand-Plover	Opens up MOPL for Mountain Plover
8800	MASW	Mariana Swiftlet	
7920	MAAL	Maui Alauahio	
5491	NESP	Nelson's Sparrow	
7940	OAAL	Oahu Alauahio	
5490	SALS	Saltmarsh Sparrow	
1711	TABG	Taiga Bean-Goose	
7710	TAFL	Taiga Flycatcher	
8120	TRMU	Tricolored Munia	
9166	VETR	Venezuelan Troupial	
6101	WESP	Western Spindalis	
8042	YCBI	Yellow-crowned Bishop	

48. Wing-Weght table was updated.

Version 2.01 (04/16/2008)

1. Import bands bug is fixed.

2. County 014 (Broomfield) added to the list of counties in Colorado(US).

3. Import Inventory bug related to missing leading zeros is fixed.

4. Submission Bands confirmation message was modified to clarify what was done and what to do if confirmation was not received.

5. Import Inventory bug related to empty records and duplicated records is fixed.

6. Lat Min and Long Min - 0 will automatically precede numbers less than 10.