

Better Bandit

Abstract

A number of you will recall that I was very opposed to using the Bandit program and was still using Band Manager as of the annual meeting in 2010. After meeting with the programmers at the Bird Banding Laboratory (BBL) to present my suggestions for improvements to Bandit, basically features provided by Band Manager, and studying the Bandit Manual, I finally broke down and started using Bandit for our spring data at Harford Glen. That task was a breeze once I finished rearranging things in Bandit to facilitate my data entry activities. I thought I would pass the methods I used on to you. Yes, I will admit that I am one of those that waits until the end of the season to enter data instead of doing it after each banding day as I should, but I had to overcome my concerns with the Bandit program before I could do that.

On 24 May 2011, I visited with Danny Bystrak, Kevin Laurent and the Bandit programmers, Rita Malorodova and Jorawar Singh at the BBL. This meeting was actually a follow up after many e-mail communications. I presented my concerns with Bandit and demonstrated how I had configured the Band Manager program to facilitate data entry. The programmers demonstrated they had incorporated what were some of my earlier suggestions (I am not implying that it was on my advice) and made other improvements to the program in succeeding versions. They also were attentive to my presentation and, hopefully, will incorporate some of my suggestions in later versions.

One critical aspect of the program is to limit errors in banding data and that has been a guiding principle in the development of Bandit. At least one of my suggestions was not incorporated because the BBL personnel feared it would increase errors. I submit that it is a question for you to comment on. Also, Laurent asked a question regarding the verification of location data which I will suggest you also address in an e-mail to the Bandit Help Desk.

I managed to enter and proof-read our spring banding of only 230 birds in less than three hours once I had Bandit configured to make it as simple as possible. The following is a suggestion for other "dickybird" banders to consider for their use of Bandit.

Introduction

The Bird Banding Laboratory (BBL) released several alpha (preliminary for testing) versions of Bandit under the name of "Timbo" beginning early in 2006. The name "Bandit" was applied with a beta version released in September of that year. Although I had volunteered to be a beta tester, I was not awarded that opportunity so the first version I tried to use was version 1.02 released in Mar 2007. I was so disappointed in that version that I became a conscientious objector of its use and remained so until this year. I still have concerns with the program but believe it is better to work with it to improve it than try to ignore it, mainly because the BBL has abandoned Band Manager along with other earlier programs. Currently I am working with the latest version of the program (3.01) which, when they gave it to me, was still in production and just released in November.

While I still reserve some recommendations regarding Bandit, I have developed schemes for working with it that I want to pass on to other banders to help them simplify the use of the program and get the most out of it. At the same time, the programmers at the BBL would appreciate input on a couple of questions.

Data Entry Setup

This should be the best part. Here is what I did to Bandit to facilitate data entry:

First, I rearranged the columns to move all repetitive data to the left. In the "Bands" "Table" page you can move the columns by positioning the cursor over the heading (such as "Banding Date") then hold down the left mouse button (the heading will change to reverse the background and text colors) and, while holding the button down, move the cursor along the columns. While you do that, a dark line will appear between the other columns indicating where the column you selected will land when you release the button. I rearranged the columns to get the first eight as shown in Figure 1.

Fig. 1. First four rows of first eight columns on the Bands Table page.

R	BANDING DATE	D	BIRD ...	LOC...	BANDER	BAND NO.	SPECIES
						2560-76001	
						2560-76002	
						2560-76003	

I also changed the column widths, achieved by positioning the cursor on the borderline between two headings, pressing the left mouse button and moving the cursor to the left until the desired width is achieved. Yes, it blocks reading of the titles, but I do not find that to be a problem. You can always widen one temporarily to see the full title.

The reason for this arrangement is that the data in the first six columns can be copied each time you enter a record by using the shortcut keystrokes. (See the information in Appendix A of the manual for shortcut keystrokes). I moved the banding date as far to the left as possible (Record status can not be shifted) so the date is the first thing up when I start to enter a record and the only one of those first six that changes regularly during a period of data entry. I should move time up here too, but did not think of it until reviewing this document for submission. Record status is updated automatically so it does not matter. Then, because I am using an Windows XP laptop, I can press the control and left arrow keys to move the cursor to the beginning of the record I just finished entering (it will shift the screen view to display the banding date column and shade the background). Then, still holding the control key, I press the down arrow to move down to the next record. Finally, unless the date has changed, I change my fingers to hold down the control and shift keys and press the apostrophe key five times. That copies the date, disposition (usually 1), bird status (usually 300), location code, and bander from the previous record into the new record with a minimum number of keystrokes. With that done, the next field in the record is species and another press of the apostrophe key will copy the species code. That is why we all try to sort the birds at the end of each net run so we can copy; at least it is typical of banders I know.

I follow the species column with the age, how aged, sex, and how sexed columns because they can frequently be copied as well. Thereafter, you are into wing chord and other measurements that require numerical input and vary so much that copying is not advantageous.

If you are not certain how you will like these changes to the Bandit Bands page, be sure to make a backup, so that you can restore what you have. Once you make these changes, the program will always come up with the same arrangement. Other than the clumsy three-key requirement for copying, I find that it makes data entry fast and easy. Also, unlike the old copy feature of Band Manager (which admittedly did not require any keystrokes), I found I did not mess up the banding date so frequently (which I did a lot with Band Manager) because it is the first thing to look at for a new record in Bandit and I get time to think before stroking the copy keys. In asking the BBL to review this document before submitting it to publication, I have requested they come up with a simpler keystroke for copy and advance, something like Control + return, the standard "next page" keystroke. I also would like to have something other than the three-key provision for copying. I understand their selection but, since it would be used frequently, a two-key setup like control + "d" (for ditto, control + "c" could be confusing) would be an improvement.

Accuracy Questions

While visiting the BBL, I was asked my opinion of the need to qualify location data, especially with the new map feature of the program where you can see the location on the map. BBL expends a considerable amount of time verifying new

locations and would like to know if banders consider that activity important. The only critical use of the data is in advising those who submit encounter data of the location the bird was banded. Do you feel you can be trusted to get it right? I do, but the BBL would like your input on this question. I keep wondering if they verify every Purple Martin house location.

One feature of the program that I thought would be excellent, even in Band Manager days, would be an automatic assignment of band number after entering an alpha code. I suggested that if the user entered a species code first, the program should present the next available band number in the recommended size for that species for the program user to choose by simply tabbing to the next field (or pressing enter) with a selection box (for the next available band in the other permitted sizes) for the user to pick one from. Each time I had to change to a different band number on that initial entry of data in Band Manager, I had to type in the information I could otherwise have copied. So, I would think there is no problem with shuffling the records so the new band numbers appeared below the last record entered. That way the list on the screen could match your field data sheet and should result in your making fewer mistakes. The BBL personnel are concerned that it would lead to more errors.

What is your opinion? If you have an opinion on these two questions, you should send an e-mail to the Bandit Help Desk.

Find Sort, Filter

One thing that is not clear with Bandit is the find feature which can also be considered a filter because it can be used to isolate records. It is a powerful feature. One good use is making a determination of the number of hatch-year birds banded for a particular species. You simply enter the species code and hatch-year codes in the respective fields in the one blank record that appears when you click on the "find" magnifying glass, then click on the "perform find" box that appears after you click on "find" to have all the records listed with those species that are hatch-year

birds. The number of records appears at the left, so you do not have to count them. Other than getting my HY ratio, I have not used the feature much. I am certain it will come in handy for many purposes. The only thing you have to remember is to click on the "show all" box at the bottom of the screen to bring up every record before using find and the "filter" box to show those records that match the filter.

The "sort" feature is another powerful feature. You can change the sort arrangement so the data is sorted by any field. I find it convenient when the numbers that show up in the "Summary of Bandings per Location by Date" report (another great feature) do not match the number of lines on my field data sheet for a particular date. I can use "find" to select the date and sort the data by species for a quick check to see what I forgot to enter or that one size 3A I neglected.

The filter allows you to enter a string of bands and select "unused" so you can get right to the bands you need to enter data for.

Data Retention and File Size

I am not convinced that Bandit should be used for data retention. The principal reason is file size. When I first tried to use Bandit, I made the mistake of simply transferring our Harford Glen band inventory from Band Manager to Bandit and saw a considerable amount of my available hard drive space disappear. I admit the program does not chew up as much space as I recall for that first version (perhaps my recollection is faulty), but I do know that Bandit, as currently configured, chews up a lot of file space; unnecessarily so in my opinion. When I put in our current inventory of 5,902 unused bands, Bandit produced two data files that consumed 51.4 megabytes of disk space; that is 8,708 bytes per record. The 24,377 bands I have in Band Manager produced a file of 879 kilobytes (36 bytes per record), substantially smaller. The backup file for Bandit with 230 bands input is 3.25 megabytes. The difference is attributable, in part, to the different methods of handling the data, but I exported that Bandit data to Excel to get a 101

kilobyte data file which, after removing the columns I find unnecessary for my purposes, is reduced to 66 kilobytes. My little old Windows XP laptop has trouble handling those large files. I wait about a minute and a half to get Bandit up and running. The BBL programmers explained that I did not have enough computer memory. While I can accept that is the case, I do not know many of us that are ready to run out and buy a new computer with more memory to use a program that simply eats up memory and disk space. It is my contention that a properly indexed set of files will dramatically reduce disk space consumption by Bandit.

I have asked the programmers to add a feature that would allow me to delete submitted data to keep the file size down. Of course, I would only do that after exporting the data to another format, currently Excel, and checking to ensure that it is correct and backed up.

Band Manager allowed me to keep multiple data files, so I set one up for each location for each year. It did not matter that I had several files because, for any analysis I wanted, Band Manager permitted me to include all the files that I selected. That is a feature that Bandit does not offer and I am not certain the program used to build Bandit can do it.

Data Codes

I have suggested to the BBL programmers that the determination of alpha or numeric codes for age and sex should be treated differently. I believe the program should store the data numerically for purposes of limiting file space and simply display, print, and export the data in the format selected by the user.

A disconcerting element of the program is the assignment of codes for "how aged" and "how sexed." I imagine the codes the program uses are based on a selection made for the Powerline Station where the BBL members band. However, I, and many others I know, have been using the MAPS codes because that was the first really structured, published internationally, assignment of codes. What I have suggested to the BBL is that each user

of Bandit be able to apply his or her own code to a BBL description. For example, the "how aged" code described in Bandit as "adult plumage" could be selected to be "P" by some banders and "1" by others but the program records it as a value known only to the program and BBL to ensure the basis is consistent. The same should apply to other codes used in the program.

One feature of Band Manager allowed me to develop a quick way of entering molt data. Using a key suggested by David Brinker, I assign the letters "N", "O" and "V" to New feathers, Old feathers, and Very old feathers. I set up four fields in Band Manager for left and right primaries and secondaries. Owl banders should appreciate this, because most of the owls banded are hatch-year and all the feathers are new. All I had to do in Band Manager was hold down the "N" key and those four fields filled up without making 44 keystrokes. Sometimes, with second-year birds, I did it anyway then went back to edit it for the one or two feathers that were old. Since I set them up before the weight field (which requires numbers), the program stopped taking the alpha input and waited for me to enter the numbers for the weight. I will gladly e-mail a blank Band Manager table file for owl banding, complete with some instructions for modifying it to suit your uses for anyone interested in it. I hope this commentary on codes makes sense; if it does not, e-mail me or call and I will try to explain it better. The ability to set up user codes in Band Manager with a specific allowance for input, permitted many other tricks that made data entry easier and simpler, so I have asked for something similar in Bandit. The suggestion that the codes be referenced to specific descriptions, as described earlier, would apply here as well. Why? Some owl banders use feather age (1, 2, 3...).

Conclusion

If you have been waiting to convert from Band Manager to Bandit for entering your banding data, it is time to do so, except maybe for owl banding. The features of the program allowed me to set it up so I can enter data in the Bands Table view quickly. It does not show all the record data on one page as we

could accomplish with Band Manager, but maybe the programmers will get that one worked out, too. I did successfully, and with little difficulty, transfer my owl data to Bandit after the 2011 owl banding season.

Mix up an old computer with the large files generated in Bandit and you may find yourself waiting a lot. There is a somewhat annoying flickering of the screen that is probably due to my old, slow, and memory limited computer that you might experience. However, by limiting Bandit to data entry and reporting duties and clearing submitted data after storing what you want in a more compact format, you should be able to continue using an older computer for your bird banding data.

Since the Banding Laboratory has invested a lot in Bandit and they are willing to at least listen to suggestions for improvements and act on them when they consider the suggestions constructive, Bandit should only improve to make our lives and the work the people at BBL do simpler and more accurate.

Other Suggested Improvements

I am really looking for two key keystrokes that would replace what we have to do now. Something simple—instead of holding control plus shift plus apostrophe keys to copy—would be a great improvement. Instead of control left arrow, followed by control down arrow, something like control tab or control return should be provided to move to the first column in the next record.

One problem with my scheme for entering data in the table view is that the column headings for user-defined columns do not show the user selections in the table view. I have suggested that be changed.

Regrettably the “Bands Display” page can not be changed and will not change with the revision of the “Table” page; it also will not allow you to copy data. I loved the ability to modify that page in Band Manager so all the data for a record was displayed and, again, by listing certain data first and using the copy feature I did not have as many keystrokes to

enter data. I have, of course, asked the programmers to look at the possibility of making that page configurable. There is also a need to be able to create different pages (usually associated with sites) as we could do with Band Manager. I only need fields for 10 primaries and 12 secondaries for each wing when I am banding owls.

A feature of many other programs is advancement of a date in a field by simply pressing the “+” key. Instead of typing the full date for the next day of banding, one stroke of the “+” key would change the date in that field. If you did not band until two days later then three taps of the “+” key would bring up the correct date. Press “+” one too many times and a tap of the “-” key would make it correct.

There should be no need for pressing a colon key to enter the time and, for those that do not like a twenty-four hour clock, pressing the “p” key should be all that is necessary to have the time shown as pm (not pressing it displays as am). As with other fields, the program should retain the time in its own format and display and print it in a format selected by the user.

Your Opinion Counts

The programmers at BBL extended many courtesies to me despite my complaints about the program and I sincerely believe they are interested in input. I have already mentioned a couple of items on which they want input. If you can picture ways that Bandit would serve you better, do not hesitate to let them know about it. You do not have to be a programmer; you only have to be able to describe what you would expect the program to do. I am confident your comments and suggestions will be welcomed at the Bandit Help Desk and given some consideration. You have to be patient, however, because it takes quite a while for them to plan, program, test, and test again a change before issuing it in a new version.

Be A Mentor Or Helper

The only other concern I have had is the one that came with the requirement of sending in electronic banding data long ago. Many of our older banders

have elected to stop banding because they have problems dealing with computers. The tricks I have described allow you to enter data quickly and, if you hear that lament, "I can not deal with those computers," just offer to do the data entry for that person. I have done it for a few friends and it does not really take up much time. Plus, you will be rewarded with thanks and maybe even learn more from those older banders.

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Vagrancy in Royal Terns: a Mexican Connection.

The Royal Tern (*Thalasseus maximus*) is a familiar summer resident on both the Atlantic and Gulf coasts of North America. It is resident in coastal west Mexico, the Gulf of California, and the California Current System of the west coast of the Baja California peninsula and southern California (Buckley and Buckley 2002, Mellink et al. 2007, Collins and Palacios 2008). The largest Royal Tern nesting colony in this area, with over 8500 breeding pairs, is on Rasa Island in the Gulf of California (Velarde et al. 2005, Mellink et al. 2007). As indicated by sightings of banded birds, there has been substantial year-to-year movement of Royal Terns among the three southern California breeding colonies (Collins and Doherty 2006). However, the degree of genetic interchange between the nesting colonies in the Gulf of California and those in coastal Mexico, Baja California and southern California has yet to be determined (Collins and Palacios 2008). To date, no Royal Tern chicks banded in southern California have been recovered in any of the breeding colonies in western Mexico or the Gulf of California (Collins and Palacios 2008). However, a single non-breeding Royal Tern banded in Sinaloa, Mexico, was observed (and the band read) in southern California in 2005 (Collins and Palacios 2008). We report here further

observations of this individual in southern California, suggesting that it has become part of the resident breeding population.

The Royal Tern in question (Tern A herein) was banded with numbered USGS aluminum band (0894-32557) as a pre-flying chick in a nesting colony on Isla El Rancho in Bahia Santa Maria, Sinaloa (25°9' N, 108°22' W) on 15 May 2003. This colony, one of seven on the west coast of Mexico, had about 1,000 breeding pairs in 2003 (Mellink et al. 2007). Tern A was first observed in southern California on 13 Mar 2005 (by CTC), along with a group of 50 newly arrived migrant Elegant Terns (*T. elegans*), at Seal Beach, Orange County. The straight line flight distance between these two sites is about 1,440 km. Tern A was not subsequently observed among the Royal Terns nesting in the three local colonies in 2005 (Collins and Palacios 2008). Thus, it was unclear if Tern A should be considered a non-breeding vagrant or a colonizing individual.

On 17 Nov 2009, Tern A was located and the band read (by PLK), among a flock of 75 Royal Terns on the beach in Long Beach, Los Angeles County. Tern A was again located on 16 Sep 2011 (by PLK) among a flock of 26 Royal Terns at Bolsa Chica State Beach, Orange County. Both of these sites are frequented by locally breeding Royal and Caspian terns (*Hydroprogne caspia*) and are <7 km from two breeding colony sites (Collins 2006: Figure 2). On both of these dates the roosting flock also contained two to three Royal Terns banded at local southern California colonies. There is no northward post-breeding movement of Royal Terns from Mexican breeding colonies into southern California as is true for Elegant Terns. Thus, these additional sightings of Tern A, even in the post-breeding season, its continued residence over six years, and its association with locally raised Royal Terns all strongly support its having become part of the resident southern California breeding population. Unfortunately, there have been no searches for banded Royal Terns in the local breeding colonies since 2005 to confirm this. The single yellow plastic band present on the same leg as the aluminum band in 2005 was not present when Tern A was resighted in 2009.