How I keep track of collections and make labels

John Longino, 16 November 2009

To use this method you need to be pretty comfortable with Excel. The method relies on frequent sorting of columns, and you have to be constantly vigilant to avoid the dreaded **disassociative sort**. Blank columns or rows are the enemy. The data in the Excel sheet need to be a simple rectangular matrix where all columns have headings and there are no blank columns. It is really sad when you sort your collection codes and somehow the locality information doesn't sort with them. If that happens, you are cooked. Start over. Also, when doing a sort, be sure that only a single cell (any cell will do) in the data table is selected. If you have selected a range of cells, it will try to sort only what is in the selected range. Usually Excel will give you a warning like "Excel has detected data next to your selected range; do you really want to sort just the selected range?" A common mistake is to have a whole column selected when initiating a sort. When you see the warning, stop, step back from the brink of disaster. If there is a completely blank column, there is no warning. Excel just sorts the contiguous range around the selected cell. It's a really good idea to make periodic backups of the file.

In the collection file there is a header row with column names (fields) and each subsequent row is a collection event. Some of the columns are used in formulas for making labels. The columns are as follows:

test: a column used for selecting sets of records. You can enter numbers or x's for particular collections you want to group, do a sort on this column, pull all those records to the top.

CollectionCode: a unique collection code. I use this file to import collection data into Biota, a relational database. Collection code is a relational field linking specimens to collections. In my case, these codes are my personal collection series in the form JTL12345, or codes associated with biodiversity inventory projects, or arbitrary codes used in the database when there is no prior collection code associated with a specimen (e.g., when recording data from museum specimens that don't have collector's codes).

CollectionCode label: This is the same as CollectionCode if I want the collection code to appear on the label after the collector name. Otherwise it is blank.

Method: one of the fields in database; not part of label.

Locality short or extended: this is not part of the label and can be blank. I most often use it when I want a short nickname for a site where I have been working. Less often I use it for a longer locality name than would fit on a label.

Locality label: this is what will become the second line of the label. So you have to tailor it to be under about 25 characters.

DateCollected: self explanatory. But be aware that this needs to be a real date recognized by Excel as a date, and dates can be tricky in Excel. If you type in 1.nov.09, Excel will think it is text and your label won't have a date. You have to enter a particular day. There is no way to enter a date like "Nov 2009." If you want to enter a range of dates, this should be the beginning of the range (see DateCollEnd).

DateCollEnd: the end of a range of dates. Make this the same as DateCollected unless you want a range of dates. Be sure to fill it in.

Collector label: name of collector as it will appear on label.

Collector: can be same or a longer list. I use this distinction for inventory projects, where there may be a team of 5 students or project workers involved in collecting. In this case I use the project name for the collector on the label, but have the fuller collector information in the Excel file.

Elevation: in meters. Just enter a number. No "m." For the label, a formula puts the "m" on the label after this number.

Latitude: decimal degrees, to 5 decimal places, using a negative number for southern hemisphere.

Longitude: decimal degrees, to 5 decimal places, using a negative number for western hemisphere.

gps error: the error term from gps unit, in meters. Enter a number, no units.

extent: the maximum distance from the site of gps reading that collecting event could have occurred, in meters. Enter a number, no units.

max error: this is the error term that will be printed on the label after the latitude and longitude. The third line of the label is of the form 15.08285 -89.94442 ±36m. By definition the max error = gps error + extent. Sometimes I use a formula in this cell to calculate max error from the two preceding cells. Other times I just estimate max error directly and enter it in the cell, replacing the formula with a value. For example, when hand collecting I try to keep extent below about 50m, and when taking gps readings I always wait until the error is below 10m, so I may just enter 60 as max error for a batch of collections. When entering older collection data that has latitude and longitude to the nearest minute, I enter lat lon as decimal degrees to five decimal places, and enter a max error of 1800. In most places on the planet a minute is about 1800m.

datum: the type of map projection used for lat lon, an important bit of information for georeferencers. Deep in the settings of your gps unit you can select the datum, which will change your lat lon values slightly. The standard setting for the Americas is WGS84. It can shift things by 10's of meters in lower latitudes, has greater impact at high latitudes. Not used on label.

habitat label: this is the first line of the secondary label, so keep it under 25 characters. If you want a longer habitat name, put an asterisk where you want the line to break.

habitat: this allows a longer description of the habitat. Can be left blank.

source: this will be the second line of the secondary label. This is usually entries like "nest under stone" "ex ant acacia" "at bait".

notes: any notes you want to add. I keep any longer natural history notes here. Not part of label.

Country: self explanatory.

District: for a third administrative level, below state/province. I use a double standard, reflecting a USA-centric convention of including a county-level name on labels. I don't use this field for non-USA labels. I modify the label formula for USA labels, to include county.

StateProvince label: second-level administrative division: state, province, department; as it will appear on label. Allows long province names and USA states to be abbreviated.

StateProvince: the full name, for database.

Day, Month, Year: these are formulas that parse the DateCollected field into separate parts, so that I can get the dates to look the way I want in the labels. I can't figure out any other way to do this. Month is particularly difficult, because the formulas for extracting the month from a date return a number (1-12). To convert the number to a 3-letter month abbreviation (Jan, Feb, etc.) I have to use another worksheet that has the abbreviation for each month associated with the numbers, and a VerticalLookup function under Month to replace the number with the abbreviation. Pain in the neck.

primary ±error: this is the whopper formula for using all those fields to generate a primary label. The formula puts an asterisk where line-breaks will be, **so no asterisks allowed in your label text!**

habitat label: formula for secondary habitat label. Same deal with asterisks.

daterangeflag: this is a formula that tells me if DateCollected is different from DateCollEnd. When there is a range of dates within a month, I have to adjust the formula to accommodate that.

difmonthflag: this is a formula that tells me if a range of dates is across months. If it is, this requires yet another modification of the label formula.

There is no flag for different years. If you have a range of dates that crosses years, you'll just have to go fix the labels by hand.

The formulas use relative cell references. When you add rows (i.e., adding new collections), copy and paste the formulas from one row into another, or fill down, or drag/copy down.

How to make labels

Go find the collection codes for which you want labels, enter the number of labels you need in the Test column.

ColInCodeMaster2009.xls

	A	B	C	D	E	F	G
1	test	CollectionCode	CollectionCode label	Method	locality short or extended	Locality label	DateCollected
3439		Ba-B-08-5-01-17	Ba-B-08-5-01-17	Baiting	Cerro Carmona	5km SE Antigua	13-Jun-09
3440		Ba-B-08-5-01-18	Ba-B-08-5-01-18	Baiting	Cerro Carmona	5km SE Antigua	13-Jun-09
3441		Ba-B-08-5-01-19	Ba-B-08-5-01-19	Baiting	Cerro Carmona	5km SE Antigua	13-Jun-09
3442		Ba-B-08-5-01-20	Ba-B-08-5-01-20	Baiting	Cerro Carmona	5km SE Antigua	13-Jun-09
3443		Ba-B-09-0-01-01	Ba-B-09-0-01-01	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3444	2	Ba-B-09-0-01-02	Ba-B-09-0-01-02	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3445		Ba-B-09-0-01-03	Ba-B-09-0-01-03	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3446		Ba-B-09-0-01-04	Ba-B-09-0-01-04	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3447		Ba-B-09-0-01-05	Ba-B-09-0-01-05	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3448		Ba-B-09-0-01-06	Ba-B-09-0-01-06	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3449		Ba-B-09-0-01-07	Ba-B-09-0-01-07	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3450		Ba-B-09-0-01-08	Ba-B-09-0-01-08	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3451		Ba-B-09-0-01-09	Ba-B-09-0-01-09	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3452		Ba-B-09-0-01-10	Ba-B-09-0-01-10	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3453		Ba-B-09-0-01-11	Ba-B-09-0-01-11	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3454		Ba-B-09-0-01-12	Ba-B-09-0-01-12	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3455		Ba-B-09-0-01-13	Ba-B-09-0-01-13	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3456		Ba-B-09-0-01-14	Ba-B-09-0-01-14	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3457		Ba-B-09-0-01-15	Ba-B-09-0-01-15	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3458		Ba-B-09-0-01-16	Ba-B-09-0-01-16	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3459		Ba-B-09-0-01-17	Ba-B-09-0-01-17	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3460		Ba-B-09-0-01-18	Ba-B-09-0-01-18	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3461		Ba-B-09-0-01-19	Ba-B-09-0-01-19	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3462		Ba-B-09-0-01-20	Ba-B-09-0-01-20	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
3463	2	Ba-B-09-1-01-01	Ba-B-09-1-01-01	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3464	2	Ba-B-09-1-01-02	Ba-B-09-1-01-02	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3465		Ba-B-09-1-01-03	Ba-B-09-1-01-03	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3466		Ba-B-09-1-01-04	Ba-B-09-1-01-04	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3467	2	Ba-B-09-1-01-05	Ba-B-09-1-01-05	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3468		Ba-B-09-1-01-06	Ba-B-09-1-01-06	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3469		Ba-B-09-1-01-07	Ba-B-09-1-01-07	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3470		Ba-B-09-1-01-08	Ba-B-09-1-01-08	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3471		Ba-B-09-1-01-09	Ba-B-09-1-01-09	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
3472		Ba-B-09-1-01-10	Ba-B-09-1-01-10	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09

Sort on Test. The collections for which you want labels will come to the top.

ColInCodeMaster2009.xls

	A	B	C	D	E	F	G
1	test	CollectionCode	CollectionCode label	Method	locality short or extended	Locality label	DateCollected
2	10	JTL6752	JTL6752	search		5km S Vol. Atitlán	17-Jun-09
3	10	JTL6785-s	JTL6785-s	bait		7.5km NE Teculután	28-Jun-09
4	7	JTL6708-s	JTL6708-s	search		4km S Vol. Atitlán	14-Jun-09
5	6	JTL6707	JTL6707	search		4km S Vol. Atitlán	14-Jun-09
6	6	JTL6715	JTL6715	search		4km S Vol. Atitlán	15-Jun-09
7	5	JTL6780	JTL6780	search		7.5km NE Teculután	28-Jun-09
8	4	Ba-B-09-2-04-01	Ba-B-09-2-04-01	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
9	4	JTL6733	JTL6733	search		4.5km S Vol. Atitlán	17-Jun-09
10	4	JTL6736	JTL6736	search		5km S Vol. Atitlán	17-Jun-09
11	4	JTL6742-s	JTL6742-s	bait		5km S Vol. Atitlán	17-Jun-09
12	4	JTL6759-s	JTL6759-s	bait		5.5km S Vol. Atitlán	18-Jun-09
13	4	JTL6782-s	JTL6782-s	bait		7.5km NE Teculután	28-Jun-09
14	4	JTL6829	JTL6829	search	nr. Cariari de Guapiles	nr. Cariari de Guapiles	1-Jan-2009
15	3	JTL6709	JTL6709	search		4km S Vol. Atitlán	14-Jun-09
16	3	JTL6717	JTL6717	search		4km S Vol. Atitlán	16-Jun-09
17	3	JTL6726	JTL6726	search		4km S Vol. Atitlán	16-Jun-09
18	3	JTL6735	JTL6735	search		5km S Vol. Atitlán	17-Jun-09
19	3	JTL6749	JTL6749	search		5km S Vol. Atitlán	17-Jun-09
20	3	JTL6757-s	JTL6757-s	bait		5.5km S Vol. Atitlán	18-Jun-09
21	3	JTL6783-s	JTL6783-s	bait		7.5km NE Teculután	28-Jun-09
22	2	Ba-B-07-1-04-01	Ba-B-07-1-04-01	Baiting	Cerro Santiago (Los Manantiales)	4km E Mataquescuintla	02-Jun-09
23	2	Ba-B-07-2-05-01	Ba-B-07-2-05-01	Baiting	Cerro Santiago (Los Manantiales)	4km E Mataquescuintla	02-Jun-09
24	2	Ba-B-08-4-05-06	Ba-B-08-4-05-06	Baiting	Cerro Carmona	5km SE Antigua	12-Jun-09
25	2	Ba-B-09-0-01-02	Ba-B-09-0-01-02	Baiting	Atitlán	4km S Vol. Atitlán	14-Jun-09
26	2	Ba-B-09-1-01-01	Ba-B-09-1-01-01	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
27	2	Ba-B-09-1-01-02	Ba-B-09-1-01-02	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
28	2	Ba-B-09-1-01-05	Ba-B-09-1-01-05	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
29	2	Ba-B-09-1-03-01	Ba-B-09-1-03-01	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
30	2	Ba-B-09-1-03-04	Ba-B-09-1-03-04	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
31	2	Ba-B-09-1-03-06	Ba-B-09-1-03-06	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
32	2	Ba-B-09-1-04-01	Ba-B-09-1-04-01	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09
33	2	Ba-B-09-1-05-01	Ba-B-09-1-05-01	Baiting	Atitlán	4km S Vol. Atitlán	16-Jun-09

Select those rows, copy, open a new file, and **paste values**. Paste values replaces formulas with their values.

Copy and paste rows to get the number of labels you want. For example, all the rows with Test=2, copy that set of rows and paste them in at the bottom once. Then there are two copies of each collection code. For test=3, paste those rows twice, etc.

Sort on Collection code. You can double check to see if the number of labels for each collection code matches the number in Test.

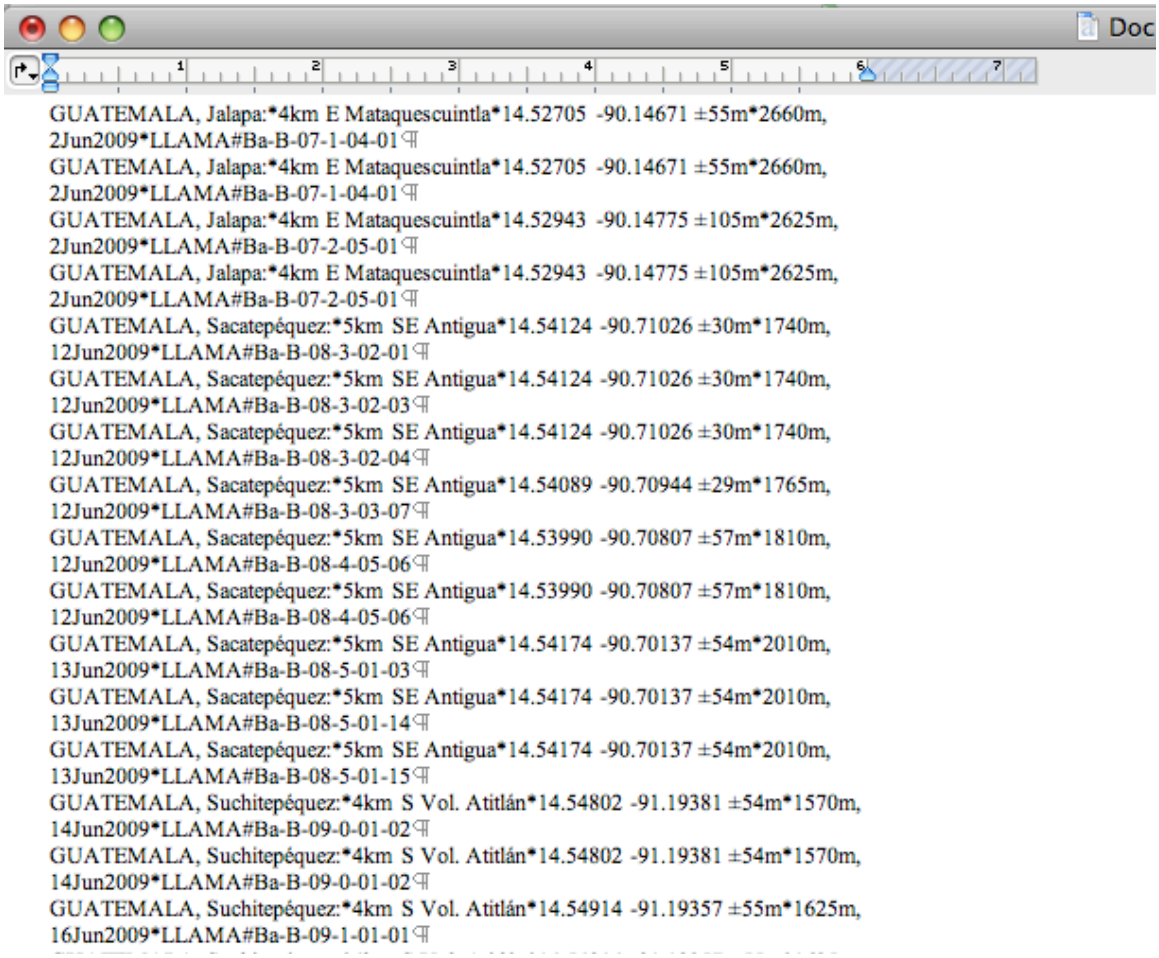
Workbook3

	A	B	C	D	E	F
1	test	CollectionCode	primary±error	habitat label2		
2	2	Ba-B-07-1-04-01	GUATEMALA, Jalapa:*4km	edge of cloud forest* at bait		
3	2	Ba-B-07-1-04-01	GUATEMALA, Jalapa:*4km	edge of cloud forest* at bait		
4	2	Ba-B-07-2-05-01	GUATEMALA, Jalapa:*4km	pasture near cloud forest* at bait		
5	2	Ba-B-07-2-05-01	GUATEMALA, Jalapa:*4km	pasture near cloud forest* at bait		
6	1	Ba-B-08-3-02-01	GUATEMALA, Sacatepéque	hardwood forest* at bait		
7	1	Ba-B-08-3-02-03	GUATEMALA, Sacatepéque	hardwood forest* at bait		
8	1	Ba-B-08-3-02-04	GUATEMALA, Sacatepéque	hardwood forest* at bait		
9	1	Ba-B-08-3-03-07	GUATEMALA, Sacatepéque	hardwood forest* at bait		
10	2	Ba-B-08-4-05-06	GUATEMALA, Sacatepéque	hardwood forest* at bait		
11	2	Ba-B-08-4-05-06	GUATEMALA, Sacatepéque	hardwood forest* at bait		
12	1	Ba-B-08-5-01-03	GUATEMALA, Sacatepéque	edge of cloud forest* at bait		
13	1	Ba-B-08-5-01-14	GUATEMALA, Sacatepéque	edge of cloud forest* at bait		
14	1	Ba-B-08-5-01-15	GUATEMALA, Sacatepéque	edge of cloud forest* at bait		
15	2	Ba-B-09-0-01-02	GUATEMALA, Suchitepéque	edge of cloud forest* at bait		
16	2	Ba-B-09-0-01-02	GUATEMALA, Suchitepéque	edge of cloud forest* at bait		
17	2	Ba-B-09-1-01-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
18	2	Ba-B-09-1-01-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
19	2	Ba-B-09-1-01-02	GUATEMALA, Suchitepéque	cloud forest* at bait		
20	2	Ba-B-09-1-01-02	GUATEMALA, Suchitepéque	cloud forest* at bait		
21	2	Ba-B-09-1-01-05	GUATEMALA, Suchitepéque	cloud forest* at bait		
22	2	Ba-B-09-1-01-05	GUATEMALA, Suchitepéque	cloud forest* at bait		
23	2	Ba-B-09-1-03-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
24	2	Ba-B-09-1-03-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
25	2	Ba-B-09-1-03-04	GUATEMALA, Suchitepéque	cloud forest* at bait		
26	2	Ba-B-09-1-03-04	GUATEMALA, Suchitepéque	cloud forest* at bait		
27	2	Ba-B-09-1-03-06	GUATEMALA, Suchitepéque	cloud forest* at bait		
28	2	Ba-B-09-1-03-06	GUATEMALA, Suchitepéque	cloud forest* at bait		
29	2	Ba-B-09-1-04-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
30	2	Ba-B-09-1-04-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
31	1	Ba-B-09-1-04-04	GUATEMALA, Suchitepéque	cloud forest* at bait		
32	2	Ba-B-09-1-05-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
33	2	Ba-B-09-1-05-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
34	2	Ba-B-09-1-05-02	GUATEMALA, Suchitepéque	cloud forest* at bait		
35	2	Ba-B-09-1-05-02	GUATEMALA, Suchitepéque	cloud forest* at bait		
36	2	Ba-B-09-1-05-04	GUATEMALA, Suchitepéque	cloud forest* at bait		
37	2	Ba-B-09-1-05-04	GUATEMALA, Suchitepéque	cloud forest* at bait		
38	1	Ba-B-09-1-05-05	GUATEMALA, Suchitepéque	cloud forest* at bait		
39	2	Ba-B-09-2-01-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
40	2	Ba-B-09-2-01-01	GUATEMALA, Suchitepéque	cloud forest* at bait		
41	2	Ba-B-09-2-02-07	GUATEMALA, Suchitepéque	cloud forest* at bait		

Copy the label cells and paste into Word as text. If you want the habitat label to follow each primary label, select the contiguous block of both columns. If you want the habitat labels to be printed separately (often desirable because habitat labels often shorter than primary labels; easier to cut when grouped), paste labels into Word one column at a time.

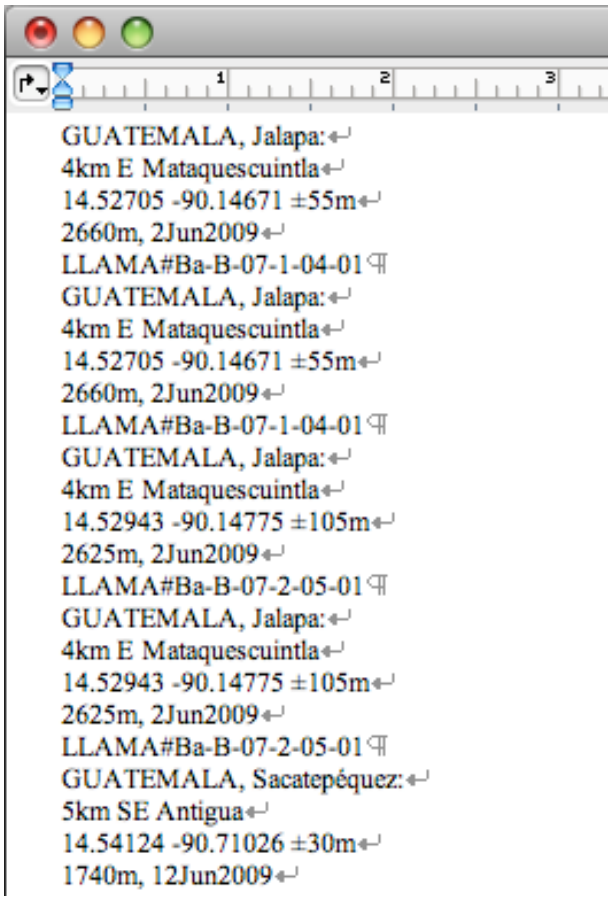
If you are entering specimen data for the material you are labeling, this is a convenient time to copy and paste the column of collection codes into an Excel sheet where you are entering specimen data. If you are attaching specimen barcodes as you go, be sure to label in the exact order of the printed labels, and your barcode series can be entered easily next to the column of collection codes. To do this, you have to be careful about entering exactly the number of labels you need, after pointing material. It does not work if you want to print out a bunch of labels before mounting.

When the labels are pasted into Word, they should look like this:



If secondary labels follow each primary label, they will be separated by a tab.

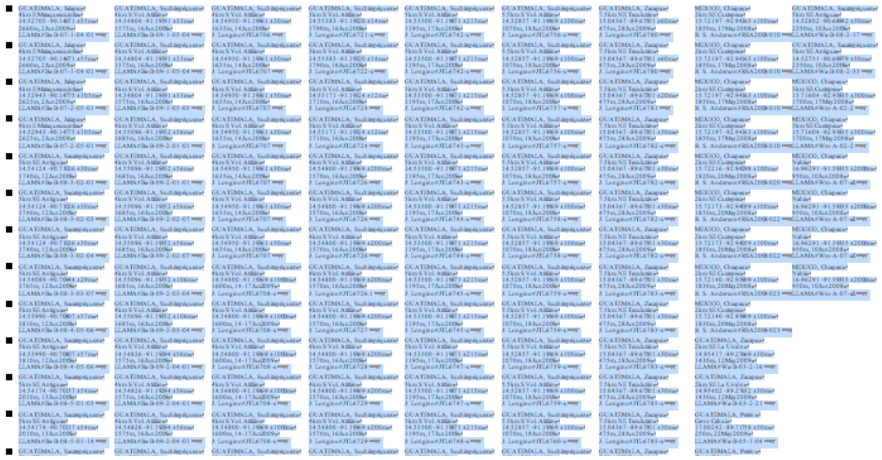
In Word, a global search and replace of asterisks with line feeds (^l) and tabs (^t) with paragraphs (^p) will turn the labels into this:



Note that each label is a paragraph with line-breaks. It is important to understand what a paragraph is in Word, versus a manual line-break within a paragraph.

Select all and do the following formatting:
document margins = 0.7in
format font: Times New Roman, 3.5pt
format paragraph: space after = 2pt, line spacing = exactly 3.5 (not single), check box for keep lines together (keeps labels from breaking across columns)
format columns: 0 space between, equal column spacing, 10 columns usually fit.

You should see something like this:



Up close:

- GUATEMALA, Jalapa:
  4km E Mataquescuintla
  14.52705 -90.14671 ±55m
  2660m, 2Jun2009
  LLAMA#Ba-B-07-1-04-01

  GUATEMALA, Suchitepéquez:
  4km S Vol. Atitlán
  14.54804 -91.19191 ±33m
  1575m, 16Jun2009
  LLAMA#Ba-B-09-1-05-04

  GUATE
  4km S V
  14.5495
  1635m,
  J. Longi
- GUATEMALA, Jalapa:
  4km E Mataquescuintla
  14.52705 -90.14671 ±55m
  2660m, 2Jun2009
  LLAMA#Ba-B-07-1-04-01

  GUATEMALA, Suchitepéquez:
  4km S Vol. Atitlán
  14.54804 -91.19191 ±33m
  1575m, 16Jun2009
  LLAMA#Ba-B-09-1-05-04

  GUATE
  4km S V
  14.5495
  1635m,
  J. Longi
- GUATEMALA, Jalapa:
  4km E Mataquescuintla
  14.52943 -90.14775 ±105m

  GUATEMALA, Suchitepéquez:
  4km S Vol. Atitlán
  14.54804 -91.19191 ±33m

  GUATE
  4km S V
  14.5495

You can always go in and edit these if you want.

I have two Word macros that do the formatting, one replaces the asterisks and tabs, one does the rest. If you can figure out how to record macros in Word, you can do the same thing.