

After you enter the information for the age model (PalEON 1 in this example), click the + sign before the row, which will expand record for entering the age-depth points for the age model.

The screenshot shows the 'Data' tab with the 'Age Models' section selected. The 'PalEON 1' age model is listed in the table. The 'Depth' tab is active, and a yellow row is highlighted for adding a new row. The table has columns: Chron No., Name, Age Units, Default, Age Model, Older Bound, Younger Bound, Preparers, Date Prepared, and Notes. The 'PalEON 1' row has values: 1, PalEON 1, Calibrated ra..., checked, bacon, 2060, -60, Grimm, E.C., 3/13/2014, Based on IntCal1... The 'Depth' tab is active, and a yellow row is highlighted for adding a new row. The table has columns: Depth (cm), Thickness (cm), Age, Older Limit, Younger Limit, Age Basis, Cal Curve, Cal Program, and Geochronology Links. The 'Age' column is highlighted in yellow.

Click anywhere in the yellow row, then click the Import button.

The screenshot shows the 'Data' tab with the 'Age Models' section selected. The 'PalEON 1' age model is listed in the table. The 'Depth' tab is active, and the 'Import' button is visible. The table has columns: Chron No., Name, Age Units, Default, Age Model, Older Bound, Younger Bound, Preparers, Date Prepared, and Notes. The 'PalEON 1' row has values: 1, PalEON 1, Calibrated ra..., checked, bacon, 2060, -60, Grimm, E.C., 3/13/2014, Based on IntCal1... The 'Depth' tab is active, and the 'Import' button is visible. The table has columns: Depth (cm), Thickness (cm), Age, Older Limit, Younger Limit, Age Basis, Cal Curve, Cal Program, and Geochronology Links. The 'Age' column is highlighted in yellow.

A dialog box will appear for importing the ages from the Geochronology tabsheet. For Bacon and clam age models, you do not calibrate the ages and the 1-sigma errors should be imported, as below.

The screenshot shows the 'Import Dates from Geochronology Form' dialog box. The 'Calibrate 14C Dates?' section has 'No' selected. The 'Calibration Curve?' section has 'IntCal13' selected. The 'Transfer older and younger limits as one sigma or two sigma?' section has 'One Sigma' selected. The dialog box has 'Ok' and 'Cancel' buttons.

Click the Ok button, and the dates will be imported from the Geochronology worksheet.

The screenshot shows the LONESTAR software interface. The 'Data' tab is active, and the 'Age Models' sub-tab is selected. The main table displays geochronological data for 'PalEON 1'. The table has columns for Chron No., Name, Age Units, Default, Age Model, Older Bound, Younger Bound, Preparers, Date Prepared, and Notes. Below this, there is a detailed table with columns for Depth (cm), Thickness (cm), Age, Older Limit, Younger Limit, Age Basis, Cal Curve, Cal Program, and Geochronology Links. The data rows show radiocarbon dates at various depths, ranging from 39 cm to 264 cm.

Chron No.	Name	Age Units	Default	Age Model	Older Bound	Younger Bound	Preparers	Date Prepared	Notes
1	PalEON 1	Calibrated ra...	<input checked="" type="checkbox"/>	bacon	2060	-60	Grimm, E.C.	3/13/2014	Based on IntCal1...

Depth (cm)	Thickness (cm)	Age	Older Limit	Younger Limit	Age Basis	Cal Curve	Cal Program	Geochronology Links
39	2	745	775	715	Radiocarbon			{OS-62772;745}
50.5	1	910	950	870	Radiocarbon			{Beta216076;910}
69.5	1	1334	1380	1288	Radiocarbon			{AA-64662;1334}
89	2	1430	1465	1395	Radiocarbon			{OS-62760;1430}
104	2	1450	1490	1410	Radiocarbon			{OS-57496;1450}
134	2	1930	1965	1895	Radiocarbon			{OS-62732;1930}
144.5	1	2288	2336	2240	Radiocarbon			{AA-64663;2288}
164	2	2450	2495	2405	Radiocarbon			{OS-62573;2450}
197	2	2840	2875	2805	Radiocarbon			{OS-62733;2840}
264	2	3710	3750	3670	Radiocarbon			{OS-62734;3710}

Enter any other age depth data besides geochronological ages. In the example below, ages for the core top and Ambrosia-rise (European settlement) were added. Click anywhere in the yellow area, and then click the Export button.

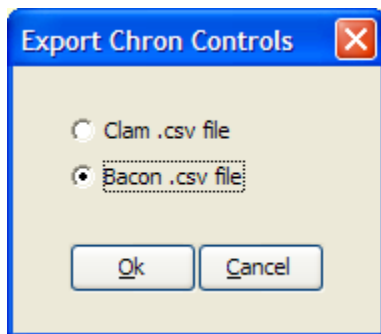
The screenshot shows the LONESTAR software interface. The 'Data' tab is active, and the 'Age Models' sub-tab is selected. The main table displays geochronological data for 'PalEON 1'. The table has columns for Chron No., Name, Age Units, Default, Age Model, Older Bound, Younger Bound, Preparers, Date Prepared, and Notes. Below this, there is a detailed table with columns for Depth (cm), Thickness (cm), Age, Older Limit, Younger Limit, Age Basis, Cal Curve, Cal Program, and Geochronology Links. The data rows show radiocarbon dates at various depths, ranging from 0 cm to 264 cm. The 'Age' column for the first two rows (0 cm and 17.5 cm) is highlighted in blue.

Chron No.	Name	Age Units	Default	Age Model	Older Bound	Younger Bound	Preparers	Date Prepared	Notes
1	PalEON 1	Calibrated ra...	<input checked="" type="checkbox"/>	bacon	2060	-60	Grimm, E.C.	3/13/2014	Based on IntCal1...

Depth (cm)	Thickness (cm)	Age	Older Limit	Younger Limit	Age Basis	Cal Curve	Cal Program	Geochronology Links
0	1	-52	-50	-52	Core top			
17.5	1	72	82	62	Ambrosia rise			
39	2	745	775	715	Radiocarbon			{OS-62772;745}
50.5	1	910	950	870	Radiocarbon			{Beta216076;910}
69.5	1	1334	1380	1288	Radiocarbon			{AA-64662;1334}
89	2	1430	1465	1395	Radiocarbon			{OS-62760;1430}
104	2	1450	1490	1410	Radiocarbon			{OS-57496;1450}
134	2	1930	1965	1895	Radiocarbon			{OS-62732;1930}
144.5	1	2288	2336	2240	Radiocarbon			{AA-64663;2288}
164	2	2450	2495	2405	Radiocarbon			{OS-62573;2450}
197	2	2840	2875	2805	Radiocarbon			{OS-62733;2840}
264	2	3710	3750	3670	Radiocarbon			{OS-62734;3710}

This brings up a dialog box for exporting the age-model data to a .csv file that clam or Bacon can read.

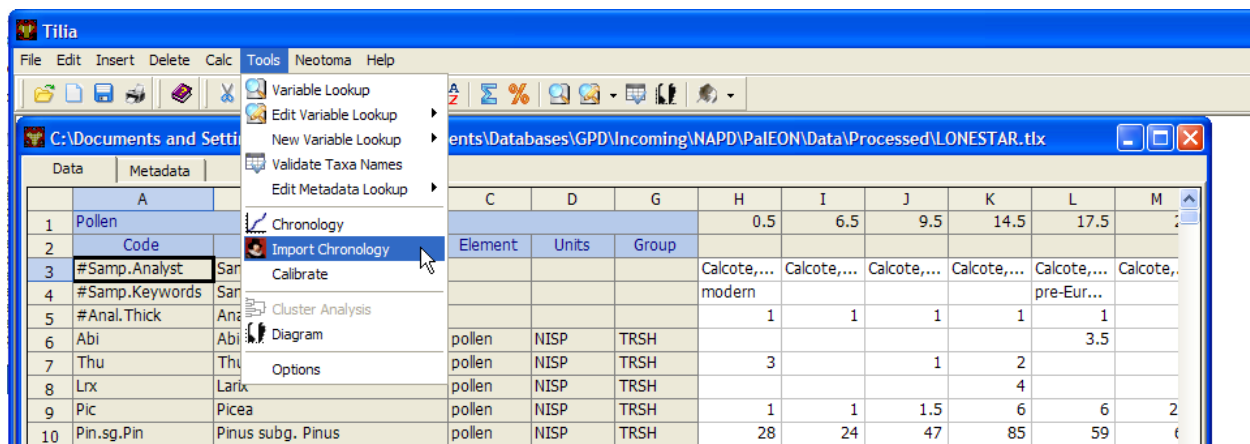


Click the OK button, and two files will be written: the \*.csv file with the input age-depth data for Bacon or clam and the \*\_depths.txt file, which contains the sample depths. In this example, the two files are LONESTAR.csv and LONESTAR\_depths.txt.

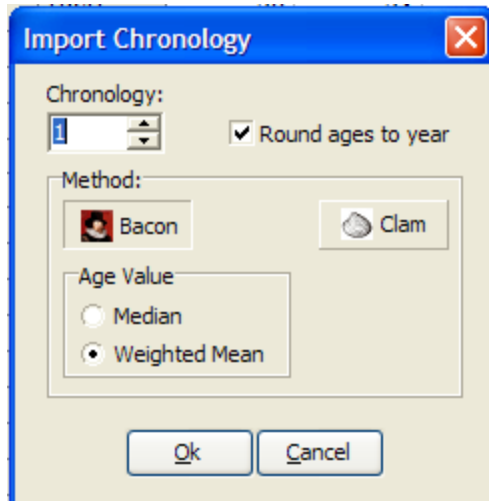
When you construct the Bacon or clam age model in R, use the input command to use the depths file, which will write the results to a file having an age for each sample depth. A command-line example in Bacon is:

```
Bacon("LONESTAR",depths.file=TRUE)
```

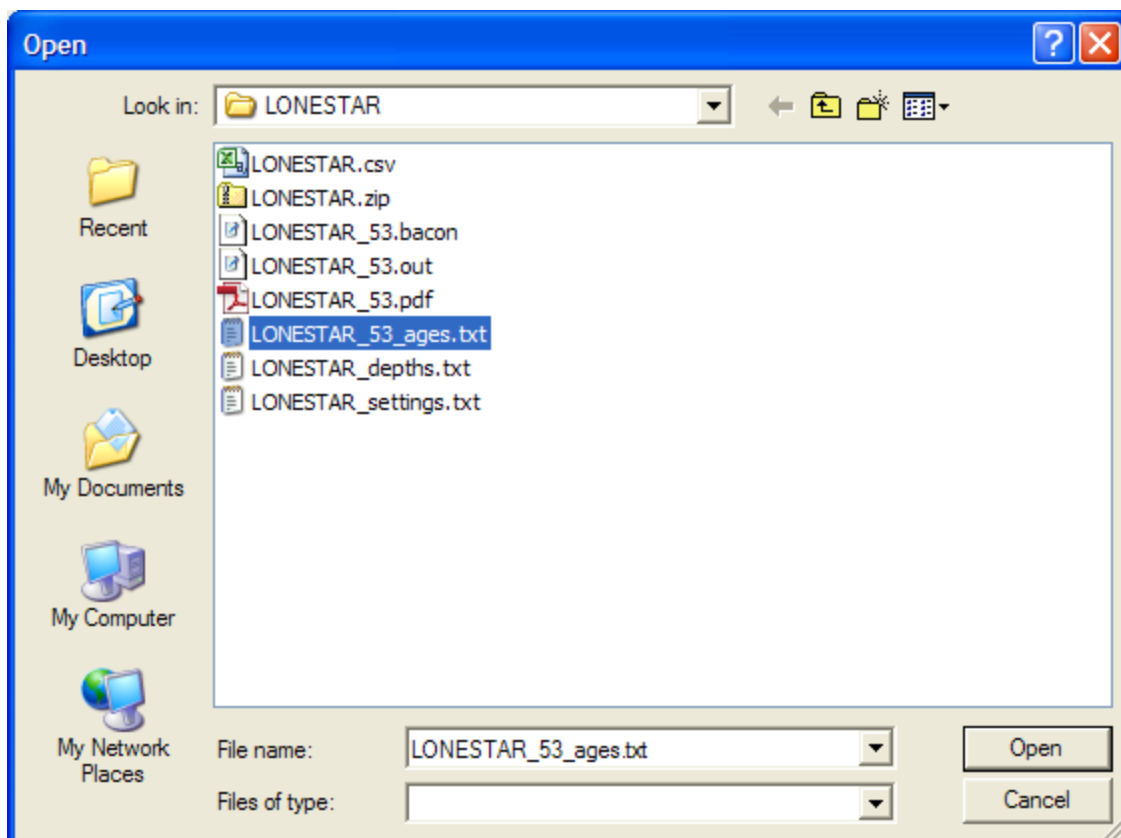
After constructing the Bacon or clam age model, return to the data worksheet, and on the bar menu, select Tools → Import Chronology.



In the dialog box that appears, select the chronology number (should match that in the Age Models tabsheet), and click the Bacon or Clam button. For Bacon, select the median or weighted mean value (Maarten recommends the weighted mean). This is the value that will be used for plotting the ages of samples on pollen diagrams.



Click the Ok button, and in the Open file dialog box, navigate to the Bacon or clam Cores subdirectory, highlight the ages output file from Bacon or clam, and click the Open button to import.



Voilà! The ages will be entered into the spreadsheet!

C:\Documents and Settings\Eric Grimm\My Documents\Databases\GPD\Incoming\NAPD\PalEON\Data\Processed\LONESTAR.tlx											
Data		Metadata									
	A	B	C	D	G	H	I	J	K	L	M
1	Pollen					0.5	6.5	9.5	14.5	17.5	
2	Code	Name	Element	Units	Group						
3	#Chron1	Bacon weighted mean age				-49	-8	12	46	77	10
4	#Chron1.Young	Bacon min age				-56	-42	-33	-2	50	6
5	#Chron1.Old	Bacon max age				-42	39	62	88	112	16
6	#Samp.Analyst	Sample Analyst				Calcote,...	Calcote,...	Calcote,...	Calcote,...	Calcote,...	Calcote,...
7	#Samp.Keywords	Sample Keywords				modern				pre-Eur...	
8	#Anal.Thick	Analysis Unit Thickness				1	1	1	1	1	
9	Abi	Abies	pollen	NISP	TRSH					3.5	
10	Thu	Thuja	pollen	NISP	TRSH	3		1	2		
11	Lrx	Larix	pollen	NISP	TRSH				4		
12	Pic	Picea	pollen	NISP	TRSH	1	1	1.5	6	6	2
13	Pin.sg.Pin	Pinus subg. Pinus	pollen	NISP	TRSH	28	24	47	85	59	6

Return to the Age Models tabsheet, and enter the Older Bound and Younger Bound ages. These ages delimit the part of the age model deemed *reliable*. It may be the entire age range, as it is in this example. Common cases where the entire range may not be reliable are when the topmost or bottommost age are estimated rather than based on sound geochronological measurements. In any case, the Older and Younger bounds should be rounded to the nearest 10 years that bracket the range: round up for the Older Bound and down for the Younger Bound.

For this Bacon age model, the settings from the LONESTAR\_settings.txt file were then copied into the Notes. These could be used for replicating the age model.

C:\Documents and Settings\Eric Grimm\My Documents\Databases\GPD\Incoming\NAPD\PalEON\Data\Processed\LONESTAR.tlx

Data
Metadata

Site
Collection Unit
Dataset
Geochronology
Age Models
Lithology
LOI
Contacts
Publications

☒ Depth
☐ Analysis Unit
☒ Auto Chron Numbers

Chron No.	Name	Age Units	Default	Age Model	Older Bound	Younger Bound	Preparers	Date Prepared	Notes
Click here to add a new row									
1	PalEON 1	Calibrated ra...	<input checked="" type="checkbox"/>	bacon	2060	-60	Grimm, E.C.	3/13/2014	Based on IntCal13 calibration curve. Bacon settings: 0 #d.min 264 #d.max 1 #d.by 1 #depths.file NA #slump 20 #acc.mean 1.5 #acc.shape 0.7 #mem.mean 4 #mem.strength

OK
Cancel