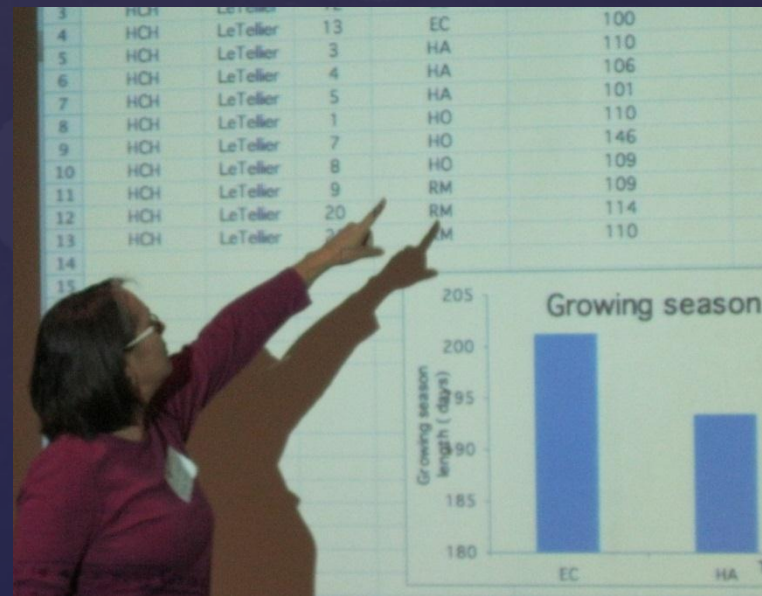


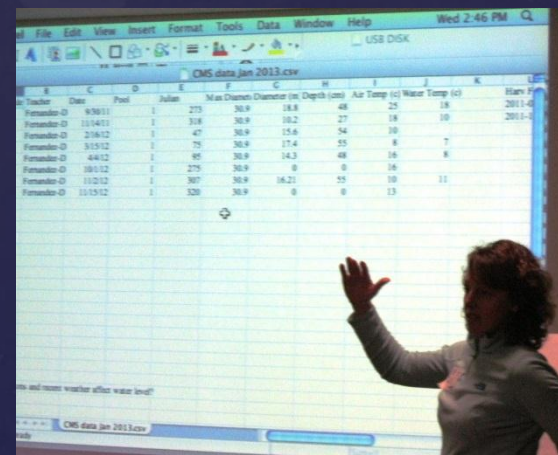
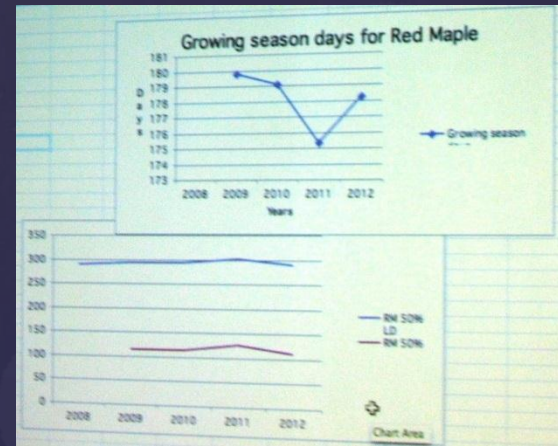
Harvard Forest Schoolyard Ecology Data Level 3 Workshop For Teachers

Pamela Snow

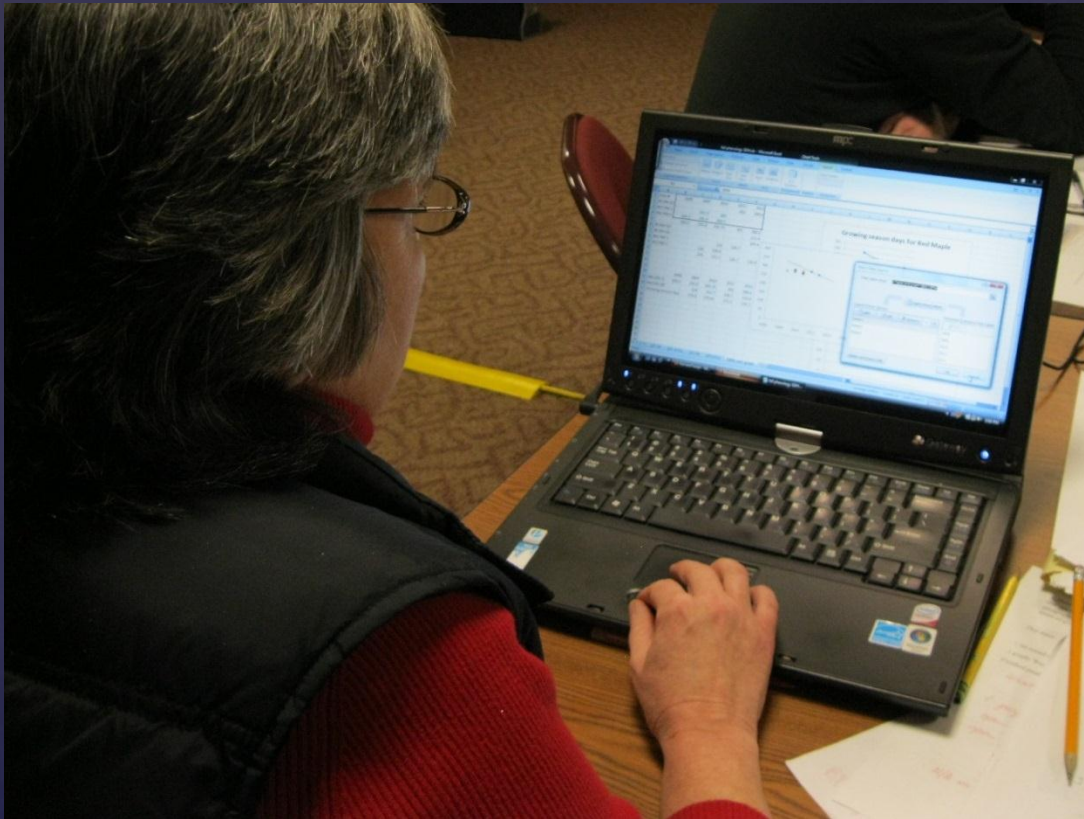


Led by Ecologist, Dr. Betsy Colburn

MAKING SENSE OF THE RESULTS: GRAPHING AND INTERPRETING YOUR STUDENTS' DATA.



The Level III Workshop allows teachers the opportunity to work hands-on to graph their own students' data.



Harvard Forest Mentors work closely with teachers to support them in achieving individual educational goals





Holyoke Catholic H.S. Teacher,
Lise LeTellier

Mentor, Norah Warchola



Gardner H.S. Teacher,
Bill VanValkenburg



Mentor, Emery Boose



Mentor, John O'Keefe



Hampshire Regional H.S. Teacher, Kira Jewett



Educators have time and support to graph their own students' data and/or data from multiple schoolyard sites, as well as pertinent supporting data from other sources.



Mentor, John O'Keefe



Groton Dunstable H.S. Teacher, Melanie McCracken



Mentor,
Betsy Colburn

Concord Middle School Teacher,
Tara Fernandez-Davila

Mentors, Betsy Colburn and
Clarisse Hart

Pike School Teacher,
Ed Santella

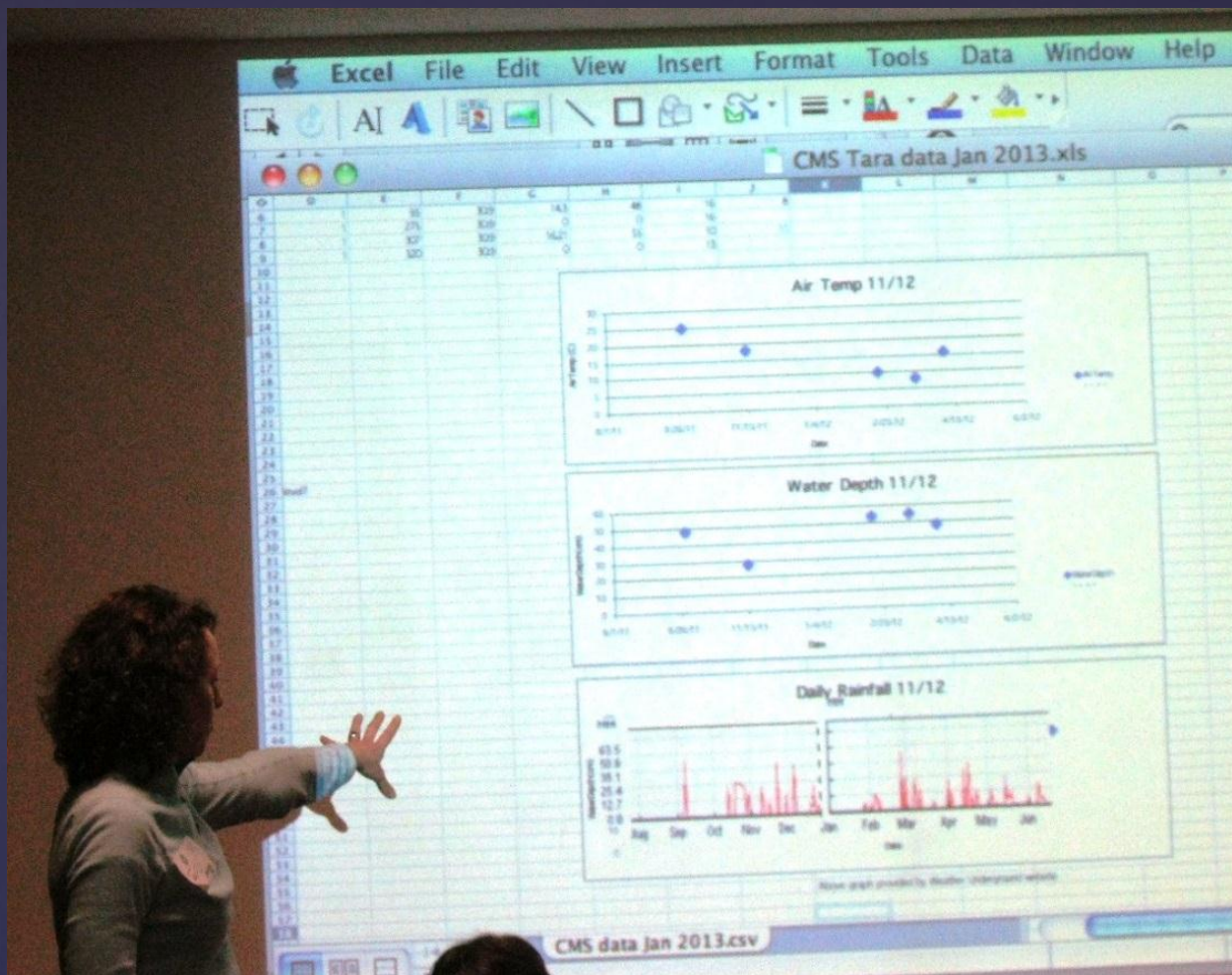


North Attleboro
H.S. Teacher,
Donna Cochran



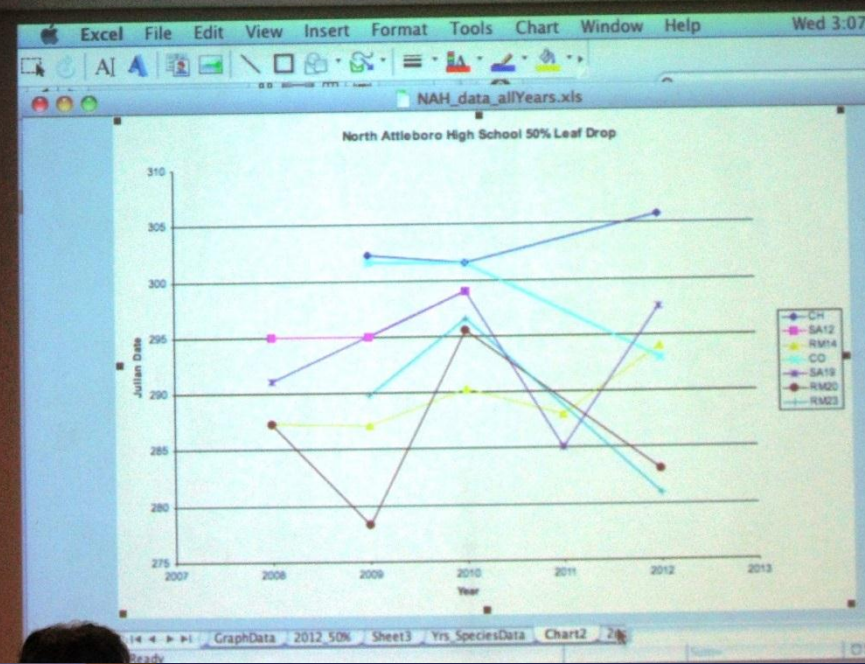
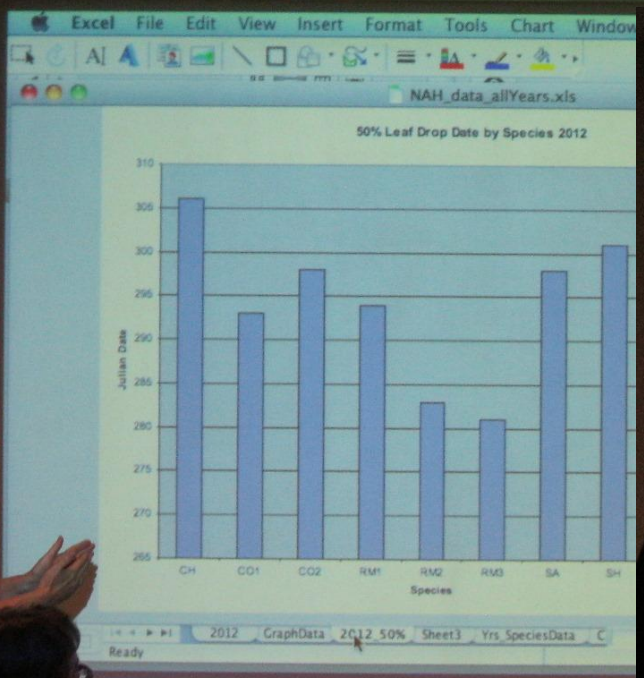
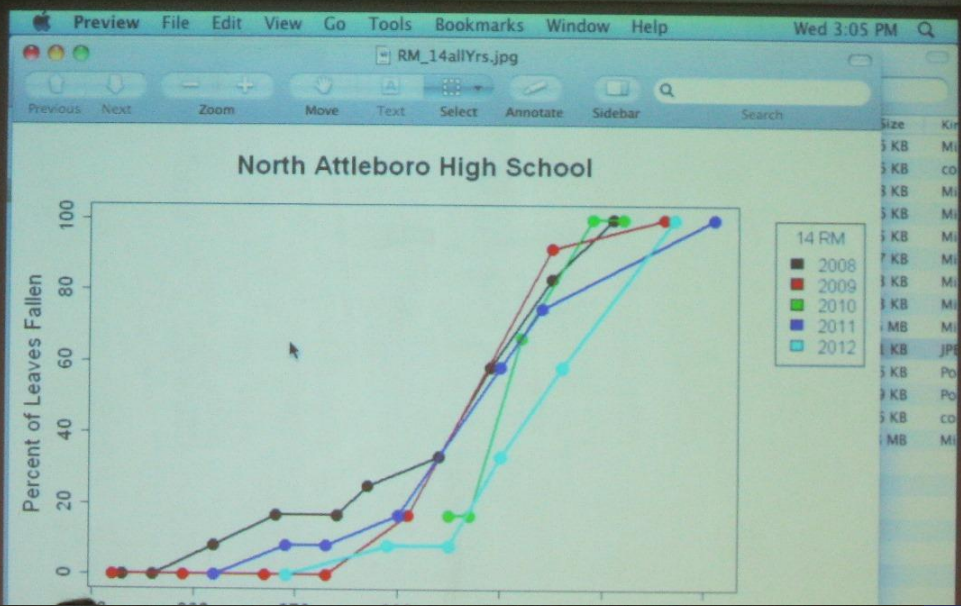
Mentors, Clarisse Hart
and Emery Boose





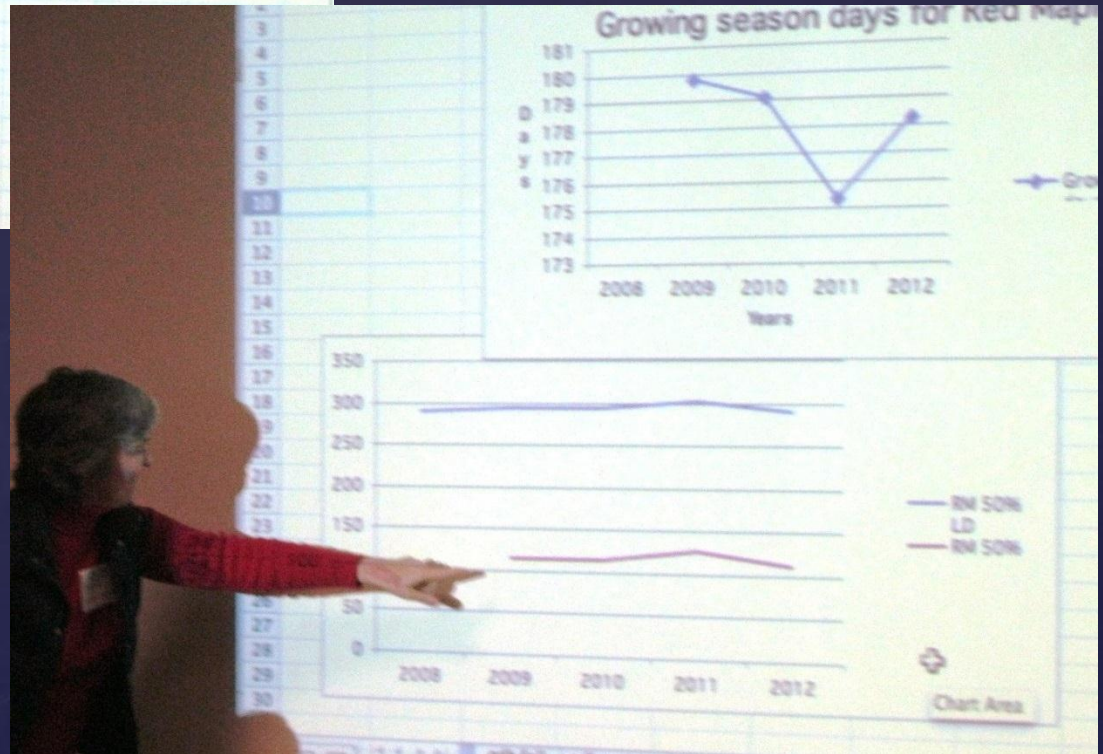
Depending on their individual data sets, teachers choose to develop graphs that show multiple-year results, incorporate other information (such as weather data), or present their data in several different formats (e.g., bar graph, scatter plot).

Educators interpret their data results as illustrated by different graphs.

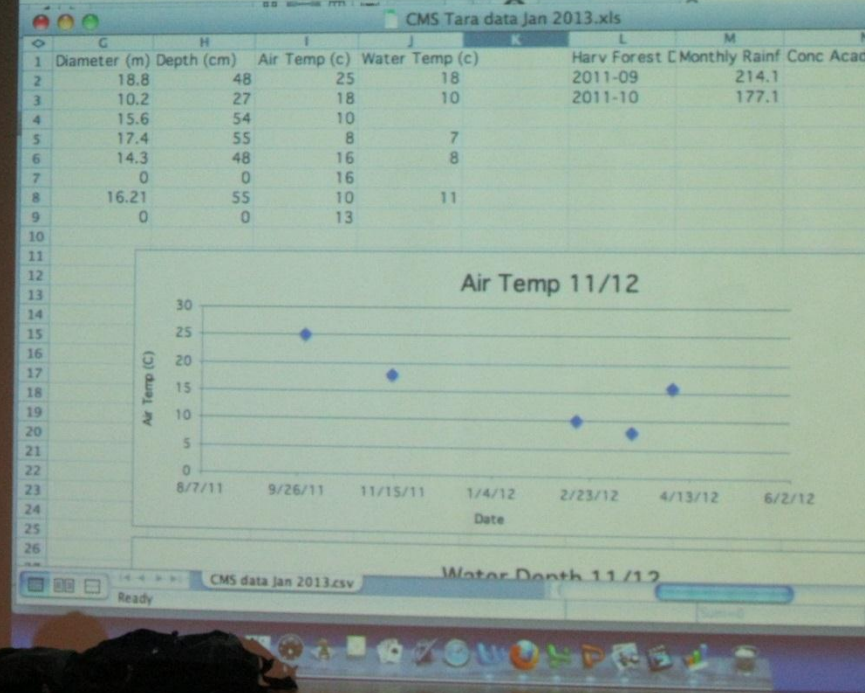
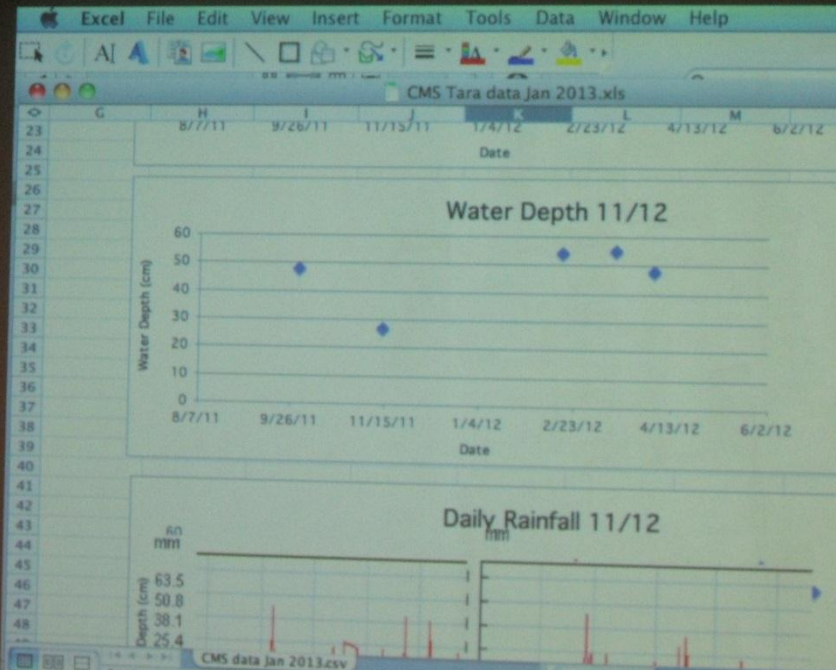


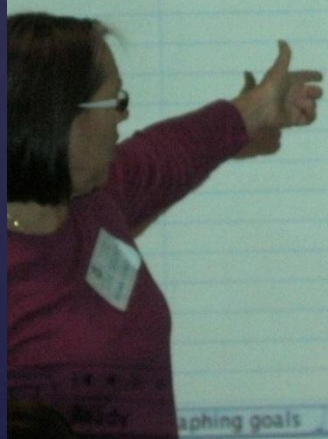
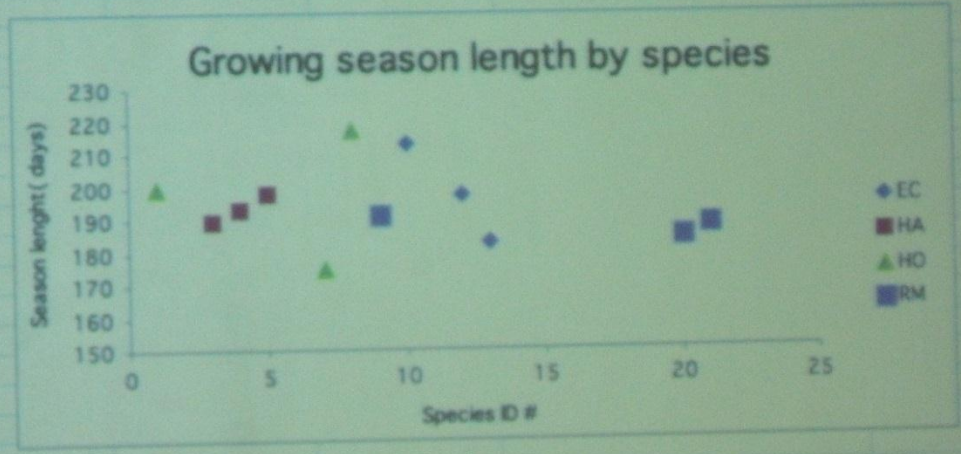
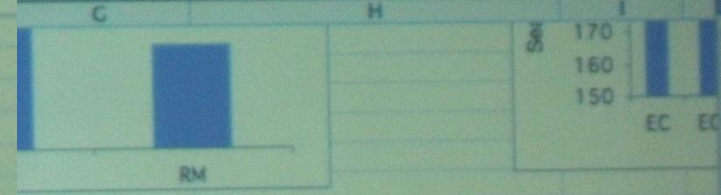
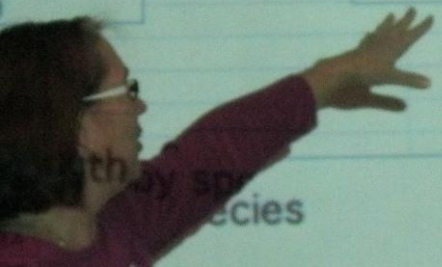
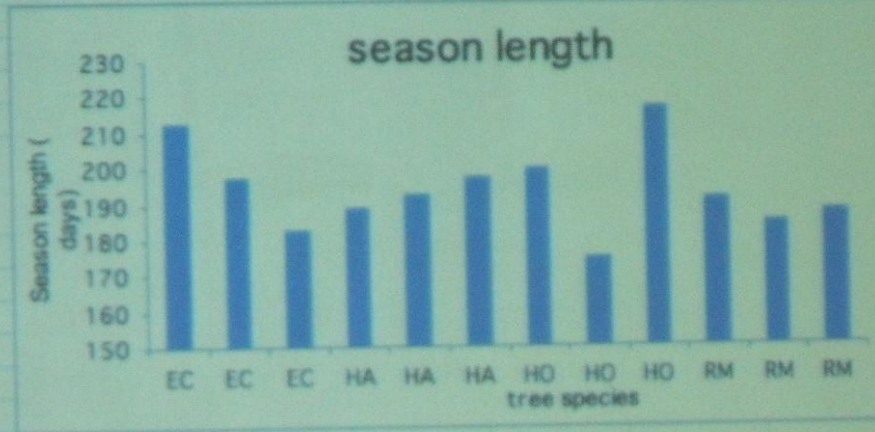
	A	B	C	D	E	F	G
1	Tree #	2008	2009	2010	2011	2012	
2	#3 RM GD				302	288.6	
3	#21 RM G		297.2	285			
4	#22 RM G	289.5	290.4	300.5			
5	AVG LD	289.5	293.8	292.75	302	288.6	
6	#3 RM GD					111.4	
7	#5 RM GD					109.4	
8	#21 RM G			119	126.7		
9	#22 RM G		114	109.8			
10	AVG BB		114	113.7	126.7	110.4	
11							
12							
13							
14		2008	2009	2010	2011	2012	
15	RM 50% LI	289.5	293.8	292.75	302	288.6	
16	RM 50% BB		114	113.7	126.7	110.4	
17	Growing season days		179.8	179.05	175.3	178.2	
18							
19							
20							
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22							
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30							
31							

The hard work is organizing data into tables for graphing.



Then the fun part begins...





Teacher comments on Betsy Colburn's presentation:

(quotes from 2012 and 2013 Surveys)

- ⌘ *Dr. Colburn's expertise was essential in reaching my goals.*
- ⌘ *She's fantastic! I really appreciated how deeply Betsy understood our challenges and how clearly she bridged the science to the lessons for our students*
- ⌘ *Already had a good working knowledge of Excel, but Betsy still provided helpful info*



Teacher Comments related to Harvard Forest Mentors:

- ⌘ *I could not have done it without all the support*
- ⌘ *I really benefit from the support of the HF staff. They really help me understand the data as well as answer questions as to what to do with the data inconsistencies we are bound to encounter.*
- ⌘ *They were essential to my ability to achieve my goals.*
- ⌘ *Fantastic! Although 2 to 1 would have been fine, the 1 to 1 ratio gave every one of us a chance to do what we needed to do with maximum support*
- ⌘ *This is a very safe, comfortable environment for sharing and learning - even the tough parts*
- ⌘ *Outstanding staff, as usual*



“The Last Word”

Overall comments on Level 3 Workshop:

- ⌘ *My desires far outstrip my technical abilities! however with the great support I made good progress and now I need to practice. I was able to achieve a small but realistic goal Thank you*
- ⌘ *It is an absolute privilege for me to have this dedicated time to spend - starting and finishing the tasks!*
- ⌘ *It is so valuable to be able to start graphing our own data so we can share it with other teachers and the students*
- ⌘ *It was so exciting to see all the possible graphs and ideas for student graphs**
- ⌘ *helpful to know what others were doing so we could collaborate and assist each other.*
- ⌘ *gives me ideas and extra support on how to improve my skills and create new projects*
- ⌘ *This is a very supportive and interesting environment to learn. I get a lot of ideas from the other teachers and the Harvard forest staff and it is very helpful having the time to discuss and try out ideas.*
- ⌘ *I met all my goals.*