

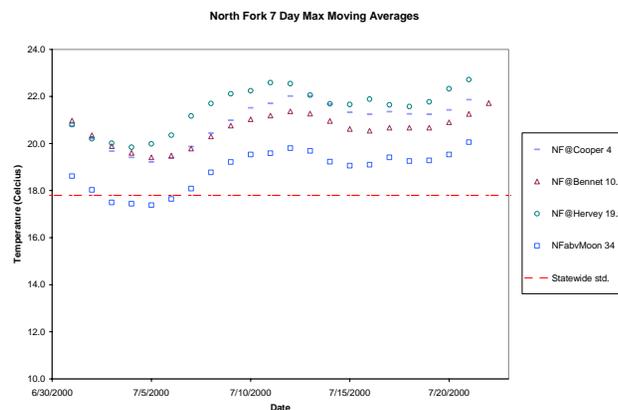
Temperature Data Analysis



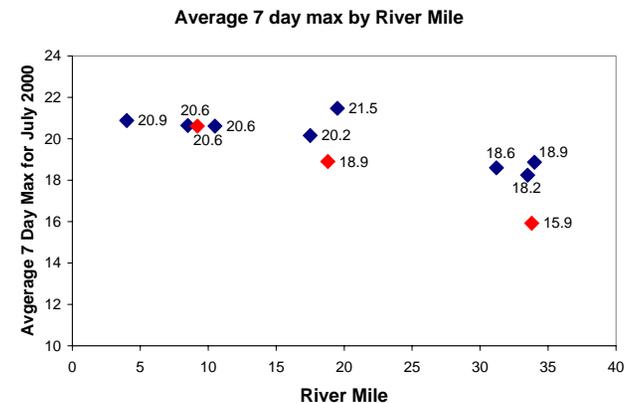
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Continuous Temperature Data Analysis and Presentation

- Representing multiple sites on a single chart creates a better understanding of the watershed
- Using river mile is an easy way to set the geographic picture without creating maps.
- If you have access to GIS, maps with different sized/colored markers are excellent.
- 7-day average maximum graphs are excellent for showing general behavior of sites.



7 Day Moving Average Plots



Summary Statistics by River Mile

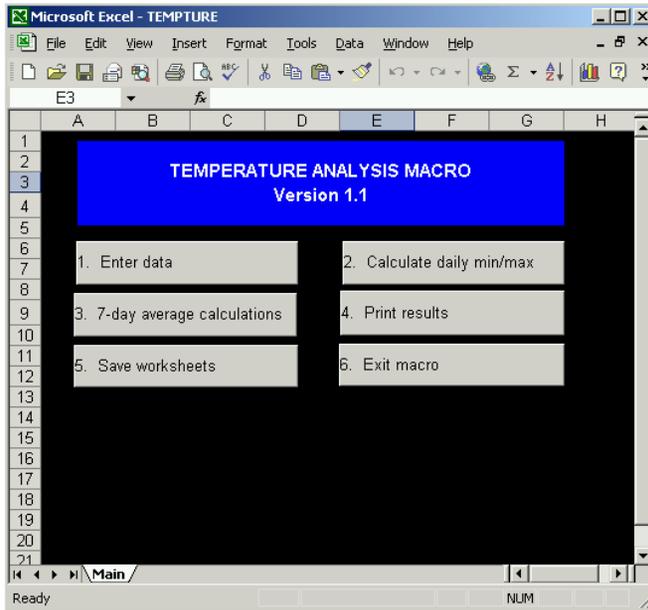
Temperature Data Analysis



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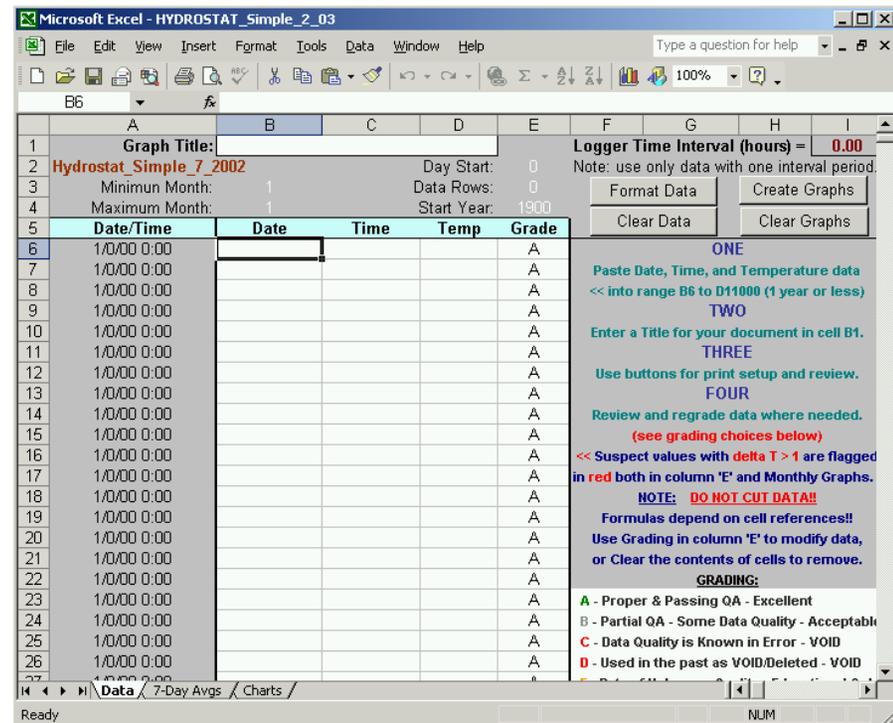
Temperature Data Processing Tools

TEMPTURE.xls



VS.

HYDROSTAT_Simple.xls



Temperature Data Analysis



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Temperature Data Processing Tools

TEMPTURE.xls



Good

- Calculates summary statistics from multiple sites at one time
- Relatively small in size, can save summary table
- Has instruction manual

HYDROSTAT_Simple.xls



Good

- Plots data for viewing, monthly graphs and 7 day moving average.
- Calculates 7 day moving average values
- Uses format needed for submittal to DEQ, same as downloaded from Vemcos



Bad

- Creates no graphs for reviewing data
- Vemco files require more messaging to get into required format
- Must clip data to whole days



Bad

- Only works with one site at a time
- Relatively large files
- Need to export graphs as images to use in reports

Temperature Data Analysis



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Temperature Data Processing Tools: Comparison of input files

TEMPTURE.xls

	A	B	C	D
1	Date	Temp_in_F		
2	6/29/2000	70.52	NF at RiverMile 17.5	
3	6/29/2000	70.34	Lat	
4	6/29/2000	69.98	Long	
5	6/29/2000	69.44	DEQ	
6	6/29/2000	69.08		
7	6/29/2000	68.54		
8	6/29/2000	68.36		
9	6/29/2000	68		
10	6/29/2000	67.82		
11	6/29/2000	67.1		
12	6/29/2000	67.1		
13	6/29/2000	66.92		
14	6/29/2000	66.56		
15	6/29/2000	66.56		
16	6/29/2000	66.38		
17	6/29/2000	66.38		

HYDROSTAT_Simple.xls

	A	B	C	D	E
1	North Fork above Moon Creek, River Mile 34				
2	* Serial Number=8763				
3	* Study ID=NFCoquille				
4	* Start Time=00-06-26 12:16:12				
5	* Finish Time=00-08-26 18:08:11				
6	* Sample Period=00:30:00				
7	* Date(mm	Time(hh:m	Temp(°)		
8	6/27/2000	13:18:03	18.1		
9	6/27/2000	13:48:03	18.6		
10	6/27/2000	14:18:03	19.1		
11	6/27/2000	14:48:03	19.5		
12	6/27/2000	15:18:03	20		
13	6/27/2000	15:48:03	20.2		
14	6/27/2000	16:18:03	20.5		
15	6/27/2000	16:48:03	20.6		
16	6/27/2000	17:18:03	20.6		
17	6/27/2000	17:48:03	20.5		

Temperature Data Analysis

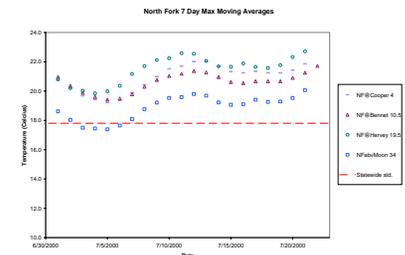


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Using HYDROSTAT_Simple to Process Temperature Files

- HYDROSTAT designed for individual temperature file QA review
- Crunches lots of numbers, spits out statistics and graphs
- Not friendly for presenting information from multiple stations
- Need to be creative to combine the information from multiple stations

Date/Time	Date	Time	Temp	Grade	Row	Dates	Grade A Grade
1/0/00 0:00				A	6	1/0/1900 0:00	0
1/0/00 0:00				A	7	1/0/1900 0:00	0
1/0/00 0:00				A	8	1/0/1900 0:00	0
1/0/00 0:00				A	9	1/0/1900 0:00	0
1/0/00 0:00				A	10	1/0/1900 0:00	0
1/0/00 0:00				A	11	1/0/1900 0:00	0
1/0/00 0:00				A	12	1/0/1900 0:00	0
1/0/00 0:00				A	13	1/0/1900 0:00	0
1/0/00 0:00				A	14	1/0/1900 0:00	0
1/0/00 0:00				A	15	1/0/1900 0:00	0
1/0/00 0:00				A	16	1/0/1900 0:00	0
1/0/00 0:00				A	17	1/0/1900 0:00	0
1/0/00 0:00				A	18	1/0/1900 0:00	0
1/0/00 0:00				A	19	1/0/1900 0:00	0
1/0/00 0:00				A	20	1/0/1900 0:00	0
1/0/00 0:00				A	21	1/0/1900 0:00	0
1/0/00 0:00				A	22	1/0/1900 0:00	0
1/0/00 0:00				A	23	1/0/1900 0:00	0
1/0/00 0:00				A	24	1/0/1900 0:00	0
1/0/00 0:00				A	25	1/0/1900 0:00	0
1/0/00 0:00				A	26	1/0/1900 0:00	0
1/0/00 0:00				A	27	1/0/1900 0:00	0
1/0/00 0:00				A	28	1/0/1900 0:00	0
1/0/00 0:00				A	29	1/0/1900 0:00	0
1/0/00 0:00				A	30	1/0/1900 0:00	0
1/0/00 0:00				A	31	1/0/1900 0:00	0
1/0/00 0:00				A	32	1/0/1900 0:00	0



HYDROSAT → Sledge Hammer → Presentation

Temperature Data Analysis



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Using HYDROSTAT_Simple to Process Temperature Files

Create a workbook outside HYDROSTAT where you can copy the information you want to present.

Include all the information you might want to present, including meta data like, river mile, stream discharge measurements, etc.

The screenshot shows a Microsoft Excel spreadsheet titled "7DayMovingAveragesNFCoq00.xls". The spreadsheet contains a table with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Vemco		5445	5468	5455	5458	8761	5495	8762	5496	5486	
2	Site	Statewide std.	NF@Cooper	NF@RM 8.5	EFMouth	NF@Bennet	NF@RM17.5	Middle@nth	NF@Hervey	NF@Laverne	NFBlwMoon	Moon@
3	ApproxRM		4	8.5	9.2	10.5	17.5	18.8	19.5	31.2	33.5	
4	Hrs over 17.8											
5	Days over 17.8											
6	Average 7day											
7	Max 7 day											
8	6/25/2000	17.8										
9	6/26/2000	17.8										
10	6/27/2000	17.8										
11	6/28/2000	17.8										
12	6/29/2000	17.8										
13	6/30/2000	17.8										
14	7/1/2000	17.8	20.7		20.8	21.0				18.5	18.2	
15	7/2/2000	17.8	20.2	20.5	20.1	20.4	19.9	18.3	20.8	17.9	17.6	
16	7/3/2000	17.8	19.7	19.9	19.6	19.9	19.4	17.8	20.2	17.4	17.0	
17	7/4/2000	17.8	19.4	19.6	19.3	19.6	19.2	17.7	20.0	17.3	16.9	
18	7/5/2000	17.8	19.2	19.5	19.2	19.4	19.0	17.5	19.8	17.2	16.9	
19	7/6/2000	17.8	19.4	19.6	19.4	19.5	19.1	17.7	20.0	17.4	17.1	
20	7/7/2000	17.8	19.9	19.9	19.8	19.8	19.5	18.1	20.4	17.9	17.5	
21	7/8/2000	17.8	20.4	20.5	20.4	20.3	19.9	18.5	21.2	18.4	18.2	
22	7/9/2000	17.8	21.0	20.9	20.9	20.8	20.4	18.9	21.7	18.9	18.6	
23	7/10/2000	17.8	21.5	21.2	21.3	21.0	20.7	19.3	22.1	19.1	18.9	
24	7/11/2000	17.8	21.7	21.3	21.5	21.2	20.8	19.4	22.2	19.2	18.8	
25	7/12/2000	17.8	22.0	21.5	21.6	21.4	21.0	19.5	22.6	19.5	19.0	
26	7/13/2000	17.8	22.0	21.4	21.5	21.3	20.9	19.5	22.5	19.4	18.9	
27	7/14/2000	17.8	21.7	21.1	21.2	21.0	20.6	19.2	22.1	19.0	18.6	
28	7/15/2000	17.8	21.3	20.8	20.8	20.6	20.2	19.0	21.7	18.8	18.4	
29	7/16/2000	17.8	21.2	20.7	20.7	20.5	20.2	19.1	21.7	18.8	18.4	
30	7/17/2000	17.8	21.4	20.9	20.8	20.7	20.3	19.2	21.9	19.0	18.7	
31	7/18/2000	17.8	21.3	20.9	20.8	20.7	20.4	19.3	21.6	19.0	18.7	
32	7/19/2000	17.8	21.2	20.9	20.8	20.7	20.4	19.3	21.6	19.0	18.7	

NOTE: This analysis assumes you have an identified range of data with known deployment and retrieval times and known data quality

Temperature Data Analysis



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Using HYDROSTAT_Simple to Process Temperature Files

Microsoft Excel - HYDROSTAT_Simple_2_03.xls

Graph Title:
Hydrostat Simple 7_2002 Day Start: 0
Minimum Month: 1 Data Rows: 0
Maximum Month: 1 Start Year: 1900

Logger Time Interval (hours) = 0.00
Note: use only data with one interval period.

Date/Time	Date	Time	Temp	Grade
1/0/00 0:00				A
1/0/00 0:00				A
1/0/00 0:00				A
1/0/00 0:00				A
1/0/00 0:00				A

Open

Look in: HYDROSTAT

- Active
 - DataExamples
 - EF@6_00.raw.txt
 - EF@Mouth19_2.txt
 - Md@Mouth19.txt
 - Moon@Mouth33.txt
 - NF@Coopers4.txt
 - NF_abv_EF10_5.txt
 - NF_abv_Mid20.txt
 - NF_lbv_EF8_5.txt
 - NF_lbv_Mid17.txt
 - NF_lbvMoon33.txt

File name:
Files of type: Text Files (*.prn; *.txt; *.csv)

Open a raw data file. Make sure your data is in the right format and in separate columns.

Data format for the Excel file is determined during Millilog setup

- comma delimited
- date: mm/dd/yyyy
- time: hh:mm:ss
- temperature: TT.TT (Units must match HYDROSTAT to calculate statistics correctly).

Microsoft Excel - Asc-6042.txt

A	B	C	D	E	F
* ID=Milog-T					
* Serial Number=6042					
* Study ID=GCWA-15					
* Start Time 12:00:00					
* Finish Time 11:30:00					
* Sample Period=00:30:00					
* Date(mmTime(hh:m Celsius (C)					
5/16/2002	12:00:00	23.22			
5/16/2002	12:30:00	24.21			
5/16/2002	13:00:00	25.05			
5/16/2002	13:30:00	26.25			
5/16/2002	14:00:00	27.47			
5/16/2002	14:30:00	29.08			

Temperature Data Analysis



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Using HYDROSTAT_Simple to Process Temperature Files

Cut and paste raw data file values into HYDROSTAT

- **Make sure the date and time get combined in column A**
- **Statistics will only be calculated for results with a data quality of A or B. Make sure it is all graded.**

Microsoft Excel - 5496_00_raw.txt

	Date	Time	Grade
46	6/27		
47	6/27		
48	6/27		
49	6/27		
50	6/27		
51	6/27		
52	6/27		
53	6/27		
54	6/27		
55	6/27		
56	6/27		
57	6/27		
58	6/27		
59	6/27/2000	13:41:15	32.1
60	6/27/2000	14:11:15	32.3
61	6/27/2000	14:41:15	33.4
62	6/27/2000	15:11:15	34.2
63	6/27/2000	15:41:15	21.6
64	6/27/2000	16:11:15	20.5
65	6/27/2000	16:41:15	20.5
66	6/27/2000	17:11:15	20.6

If the date and time don't combine properly, the program will not work. Check your formats.

Microsoft Excel - HYDROSTAT_Simple_2_03.xls

	A	B	C	D	E	F	G	H	I
1	Graph Title: That There Raw Data File					Logger Time Interval (hours) = 0.50			
2	Hydrostat_Simple_7_2002					Note: use only data with one interval period.			
3	Minimum Month: 6		Day Start: 27		Data Rows: 1346				
4	Maximum Month: 7		Start Year: 2000		Format Data Create Graphs				
5	Date/Time	Date	Time	Temp	Grade	Clear Data Clear Graphs			
1332	7/25/00 7:11	7/25/2000	7:11:15	18	A				
1333	7/25/00 7:41	7/25/2000	7:41:15	18	A				
1334	7/25/00 8:11	7/25/2000	8:11:15	18	A				
1335	7/25/00 8:41	7/25/2000	8:41:15	17.8	A				
1336	7/25/00 9:11	7/25/2000	9:11:15	17.8	A				
1337	7/25/00 9:41	7/25/2000	9:41:15	17.8	A				
1338	7/25/00 10:11	7/25/2000	10:11:15	18	A				
1339	7/25/00 10:41	7/25/2000	10:41:15	18	A				
1340	7/25/00 11:11	7/25/2000	11:11:15	18	A				
1341	7/25/00 11:41	7/25/2000	11:41:15	18.1	A				
1342	7/25/00 12:11	7/25/2000	12:11:15	18.1	A				
1343	7/25/00 12:41	7/25/2000	12:41:15	18.3	A				
1344	7/25/00 13:11	7/25/2000	13:11:15	18.6	A				
1345	7/25/00 13:41	7/25/2000	13:41:15	18.6	A				
1346	7/25/00 14:11	7/25/2000	14:11:15	18.8	A				
1347	7/25/00 14:41	7/25/2000	14:41:15	19.1	A				
1348	7/25/00 15:11	7/25/2000	15:11:15	19.2	A				
1349	7/25/00 15:41	7/25/2000	15:41:15	19.5	A				
1350	7/25/00 16:11	7/25/2000	16:11:15	19.9	A				
1351	7/25/00 16:41	7/25/2000	16:41:15	20	A				
1352	1/0/00 0:00				A				
1353	1/0/00 0:00				A				
1354	1/0/00 0:00				A				
1355	1/0/00 0:00				A				
1356	1/0/00 0:00				A				
1357	1/0/00 0:00				A				

Make sure each result is graded

Temperature Data Analysis

Using HYDROSTAT_Simple to Process Temperature Files



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To calculate summary statistics including 7-day moving average

To erase the data and statistics, use this button and move on to the next site

To create graphs for the station

Microsoft Excel - HYDROSTAT_Simple_2_03.xls

File Edit View Insert Format Tools Data Window StatPlus Help

Type a question for help

D6 20.5

1	Graph Title: That There Raw Data File				F	G	H	I	J	K	L
2	Hydrostat_Simple_7_2002				Day Start:	27	Logger Time Interval (hours) = 0.50		Hourly and Daily Stats>>>		
3	Minimum Month:	6	Data Rows:	1346	Note: use only data with one interval period.						
4	Maximum Month:	7	Start Year:	2000	Format Data	Create Graphs					
5	Date/Time	Date	Time	Temp	Grade	Clear Data		Clear Graphs		Graphing Reference Area	
6	6/27/00 16:11	6/27/2000	16:11:15	20.5	A			ONE	6	6/27/2000 0:00	20.5
7	6/27/00 16:41	6/27/2000	16:41:15	20.5	A			Paste Date, Time, and Temperature data << into range B6 to D11000 (1 year or less)	7	6/27/2000 0:00	20.5
8	6/27/00 17:11	6/27/2000	17:11:15	20.6	A			TWO	8	6/27/2000 0:00	20.6
9	6/27/00 17:41	6/27/2000	17:41:15	20.5	A			Enter a Title for your document in cell B1.	9	6/27/2000 0:00	20.5
10	6/27/00 18:11	6/27/2000	18:11:15	20.3	A			THREE	10	6/27/2000 0:00	20.3
11	6/27/00 18:41	6/27/2000	18:41:15	20.3	A			Use buttons for print setup and review.	11	6/27/2000 0:00	20.3
12	6/27/00 19:11	6/27/2000	19:11:15	20.3	A			FOUR	12	6/27/2000 0:00	20.3
13	6/27/00 19:41	6/27/2000	19:41:15	20.3	A			Review and regrade data where needed. (see grading choices below)	13	6/27/2000 0:00	20.3
14	6/27/00 20:11	6/27/2000	20:11:15	20.3	A			<< Suspect values with delta T > 1 are flagged in red both in column 'E' and Monthly Graphs.	14	6/27/2000 0:00	20.3
15	6/27/00 20:41	6/27/2000	20:41:15	20.5	A			NOTE: DO NOT CUT DATA!!	15	6/27/2000 0:00	20.5
16	6/27/00 21:11	6/27/2000	21:11:15	20.5	A			Formulas depend on cell references!!	16	6/27/2000 0:00	20.5
17	6/27/00 21:41	6/27/2000	21:41:15	20.5	A			Use Grading in column 'E' to modify data, or Clear the contents of cells to remove.	17	6/27/2000 0:00	20.5
18	6/27/00 22:11	6/27/2000	22:11:15	20.5	A			GRADING:	18	6/27/2000 0:00	20.5
19	6/27/00 22:41	6/27/2000	22:41:15	20.3	A			A - Proper & Passing QA - Excellent	19	6/27/2000 0:00	20.3
20	6/27/00 23:11	6/27/2000	23:11:15	20.2	A			B - Partial QA - Some Data Quality - Acceptable	20	6/27/2000 0:00	20.2
21	6/27/00 23:41	6/27/2000	23:41:15	20	A			C - Data Quality is Known in Error - VOID	21	6/27/2000 0:00	20
22	6/28/00 0:11	6/28/2000	0:11:15	20	A			D - Used in the past as VOID/Deleted - VOID	22	6/28/2000 0:00	20
23	6/28/00 0:41	6/28/2000	0:41:15	19.9	A			E - Data of Unknown Quality - Educational Only	23	6/28/2000 0:00	19.9
24	6/28/00 1:11	6/28/2000	1:11:15	19.7	A			NOTE: Only grade A and B data are used	24	6/28/2000 0:00	19.7
25	6/28/00 1:41	6/28/2000	1:41:15	19.5	A				25	6/28/2000 0:00	19.5
26	6/28/00 2:11	6/28/2000	2:11:15	19.4	A				26	6/28/2000 0:00	19.4
27	6/28/00 2:41	6/28/2000	2:41:15	19.2	A				27	6/28/2000 0:00	19.2
28	6/28/00 3:11	6/28/2000	3:11:15	19.2	A				28	6/28/2000 0:00	19.2
29	6/28/00 3:41	6/28/2000	3:41:15	19.1	A				29	6/28/2000 0:00	19.1
30	6/28/00 4:11	6/28/2000	4:11:15	19.0	A				30	6/28/2000 0:00	19.0

Temperature Data Analysis



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Using HYDROSTAT_Simple to Process Temperature Files



To copy the data you want, you will need to unprotect the worksheet...the password is “odeq”

With the worksheet unprotected you can then select the values you want and **COPY** them, don't cut them.

Keep a saved version of the protected version of HYDROSTAT somewhere safe in case you change something unintentionally.

Microsoft Excel - HYDROSTAT_Simple_2_03.xls

		U	V	W					AD	AE	
1	# Days:	1		3					1	1	
2	first date:	7/5/2000		6/28/2000				first date:	7/5/2000	7/21/2000	7/12/2000
3	Values:	14.3	20.5					Values:	15.2	19.5	2.8
4	Daily Statistics				17.5	17.4	0.3	-1.1	7-Day Moving Avg. Statistics		
5	Date	Min	Max	Delta-T	Average	Median	Skew	Kurtosis	7-Day Min	7-Day Max	7-Day deltaT
6	6/27/2000										
7	6/28/2000	17.7	20.5	2.8	19.2	19.4	-0.3	-1.5			
8	6/29/2000	17.8	20.3	2.5	19.0	19.2	-0.2	-1.2			
9	6/30/2000	16.9	19.2	2.3	18.2	18.5	-0.5	-1.1			
10	7/1/2000	17.2	18.6	1.4	17.7	17.8	0.3	-0.5	16.3	18.5	2.2
11	7/2/2000	15.1	17.5	2.4	16.4	16.7	-0.3	-1.3	15.9	17.9	2.0
12	7/3/2000	15.2	17.2	2.0	16.1	16.3	0.0	-1.4	15.5	17.4	1.9
13	7/4/2000	14.5	16.3	1.8	15.0	14.9	1.2	0.8	15.3	17.3	2.0
14	7/5/2000	14.3	16.2	1.9	15.1	14.8	0.5	-1.4	15.2	17.2	2.0
15	7/6/2000	15.4	16.9	1.5	16.0	15.7	0.4	-1.7	15.4	17.4	2.1
16	7/7/2000	15.4	18.4	3.0	16.8	16.3	0.2	-1.7	15.7	17.9	2.2
17	7/8/2000	16.6	17.7	1.1	17.1	17.2	-0.1	-1.4	16.1	18.4	2.3

Temperature Data Analysis

Using HYDROSTAT_Simple to Process Temperature Files

“Paste Special” all of your values from HYDROSTAT into your workbook as values, or you will end up with cell references.



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When pasting 7 day moving averages, make sure you line up the data with the correct date.

	A	B	C	D	E
1	Vemco		8763	5445	546
2	Site	Statewide std.	ThatThereStrm	NF@Cooper	NF@RM 8.
3	ApproxRM			4	8.
4	Hrs over 17.8				
5	Days over 17.8				
6	Average 7 day				
7	Max 7 day				
8	6/25/2000	17.8			
9	6/26/2000	17.8			
10	6/27/2000	17.8			
11	6/28/2000	17.8			
12	6/29/2000	17.8			
13	6/30/2000	17.8			
14	7/1/2000	17.8		20.7	
15	7/2/2000	17.8			
16	7/3/2000	17.8			
17	7/4/2000	17.8			
18	7/5/2000	17.8			
19	7/6/2000	17.8			
20	7/7/2000	17.8			
21	7/8/2000	17.8			
22	7/9/2000	17.8			
23	7/10/2000	17.8			
24	7/11/2000	17.8			
25	7/12/2000	17.8			
26	7/13/2000	17.8			
27	7/14/2000	17.8			
28	7/15/2000	17.8			
29	7/16/2000	17.8			
30	7/17/2000	17.8			
31	7/18/2000	17.8			

The summary data will now be in your personal workbook and is ready for presentation.

Clear Data in HYDROSTAT to work on the next stations data.

	A	B	C	D	E
1	Vemco				5468
2	Site	Stat			M 8.5
3	ApproxRM				8.5
4	Hrs over 17.8				
5	Days over 17.8				
6	Average 7 day				
7	Max 7 day				
8	6/25/2000				
9	6/26/2000				
10	6/27/2000				
11	6/28/2000				
12	6/29/2000				
13	6/30/2000				
14	7/1/2000	17.8		20.7	
15	7/2/2000	17.8		20.2	20.5

Temperature Data Analysis



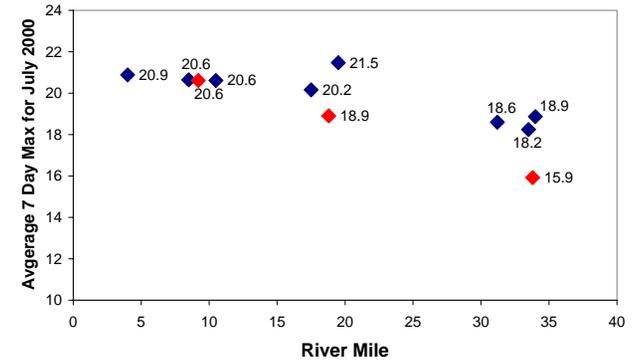
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Using HYDROSTAT_Simple to Process Temperature Files

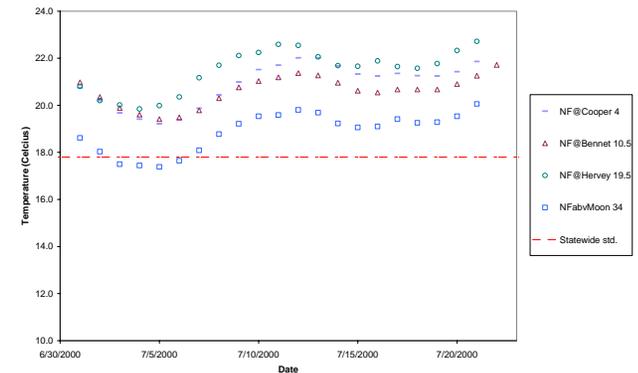
To Create 7-Day Average Maximum or summary statistics vs. river mile charts, use Excel XY scatter plots.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Vernon	Statewide std.	5445	5468	5455	5458	8761	5495	8762	5496	5486	
2	Site		NF@Cooper	NF@RM 8.5	EF@Mouth	NF@Bennet	NF@RR17.5	Middle@mh	NF@Hervey	NF@Laverne	NF@Moon	
3	Approx RM		4	8.5	9.2	10.5	17.5	18.8	19.5	31.2	35.5	
4	Hrs over 17.8											
5	Days over 17.8											
6	Average 7 day Max 7 day											
7	6/25/2000											
8	6/26/2000	17.8										
9	6/27/2000	17.8										
10	6/28/2000	17.8										
11	6/29/2000	17.8										
12	6/30/2000	17.8										
13	7/1/2000	17.8	20.7		20.8	21.0				18.5	18.2	
14	7/2/2000	17.8	20.2	20.5	20.1	20.4	19.9	18.3	20.8	17.9	17.6	
15	7/3/2000	17.8	19.7	19.9	19.6	19.9	19.4	17.8	20.2	17.4	17.0	
16	7/4/2000	17.8	19.4	19.6	19.3	19.6	19.2	17.7	20.0	17.3	16.9	
17	7/5/2000	17.8	19.2	19.5	19.2	19.4	19.0	17.5	19.8	17.2	16.9	
18	7/6/2000	17.8	19.4	19.6	19.4	19.5	19.1	17.7	20.0	17.4	17.1	
19	7/7/2000	17.8	19.9	19.9	19.8	19.8	19.5	18.1	20.4	17.9	17.5	
20	7/8/2000	17.8	20.4	20.5	20.4	20.3	19.9	18.5	21.2	18.4	18.2	
21	7/9/2000	17.8	21.0	20.9	20.9	20.8	20.4	18.9	21.7	18.9	18.6	
22	7/10/2000	17.8	21.5	21.2	21.3	21.0	20.7	19.3	22.1	19.1	18.9	
23	7/11/2000	17.8	21.7	21.3	21.5	21.2	20.8	19.4	22.2	19.2	18.8	
24	7/12/2000	17.8	22.0	21.5	21.6	21.4	21.0	19.5	22.6	19.5	19.0	
25	7/13/2000	17.8	22.0	21.4	21.5	21.3	20.9	19.5	22.5	19.4	18.9	
26	7/14/2000	17.8	21.7	21.1	21.2	21.0	20.6	19.2	22.1	19.0	18.6	
27	7/15/2000	17.8	21.3	20.8	20.8	20.6	20.2	19.0	21.7	18.8	18.4	
28	7/16/2000	17.8	21.2	20.7	20.7	20.5	20.2	19.1	21.7	18.8	18.4	
29	7/17/2000	17.8	21.4	20.9	20.8	20.7	20.3	19.2	21.9	19.0	18.7	
30	7/18/2000	17.8	21.3	20.9	20.8	20.7	20.4	19.3	21.6	19.0	18.7	
31	7/19/2000	17.8	21.2	20.9	20.8	20.7	20.4	19.3	21.6	19.0	18.7	
32												

Average 7 day max by River Mile



North Fork 7 Day Max Moving Averages



Temperature Data Analysis



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Exercise:

Process 3 raw temperature files from the accompanying CD and present summary information using charts and/or tables.

- 1. Create a spreadsheet for summary data from the 3 sites with column and row headings for the summary data you want to present. The dates for the data set are 7/1/2000 to 7/22/2000.**
- 2. Open HYDROSTAT_Simple.**
- 3. Open a text file and follow the instructions above to calculate statistics with HYDROSTAT.**
- 4. Copy the relevant information into the summary spreadsheet you created in step 1.**
- 5. Clear the data from HYDROSTAT and repeat steps 3 & 4 for each of the other files.**
- 6. Create graphs or tables that think will best be able to describe the data.**
- 7. Identify something interesting to you that the data represents and select one or two presentation pieces (graphs or tables) that best display this interesting characteristic.**
- 8. You will be asked to share what you found and what problems you had with the rest of the group.**

Temperature Data Analysis



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