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/\* Institute of Ecosystem Studies (Millbrook, NY) \*/

/\* \*/

/\* TITLE: Sunapee\_buoy\_data\_input\_GLEON.sas \*/

/\* AUTHOR: Amanda Elliott \*/

/\* SYSTEM: Dell Vostro, Windows Vista, SAS 9.1 \*/

/\* DATE: 05May2008 \*/

/\* PROJECT: Lake Sunapee monitoring bouy \*/

/\* PURPOSE: Read in raw buoy datalogger data as downloaded from \*/

/\* the GLEON website and export as an organized \*/

/\* dataset for use in Sunapee\_buoy\_data\_summary.sas \*/

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/\* folder tree structure \*/

/\* \*/

/\* Lake Sunapee \*/

/\* | \*/

/\* monitoring \*/

/\* | \*/

/\* buoy data \*/

/\* \_\_\_\_\_\_\_\_\_/ | \\_\_\_\_\_\_\_\_\_ \*/

/\* / | \ \*/

/\* sas program files raw\_from\_gleon\_site temp\_SAS\_output \*/

/\* | | \*/

/\* \*.csv files exported \*/

/\* \*.xls files \*/

/\* \*/

/\* \*/

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options ls=**100** ps=**52** pageno=**1**; \* when page orientation=portrait;

libname buoy "sasdatalibr";

\* To obtain raw data:

Go to GLEON data download site: http://dbbadger.gleonrcn.org

Get data from a site

Select Sunapee\_LI\_Buoy and select all the variables in the order they appear:

air\_temp, DO, PAR, RH, sensor\_temp, water\_temp (all, ie 0-13),

wind\_direction, wind\_speed

Select the date range you want and click "get data" and wait for data to load

Then click "get sparse matrix" and save the csv file in the "raw\_from\_gleon\_site"

folder;

\*\*\* Read in raw data as downloaded above \*\*\*;

\* Note, if you download different or more data, either change the file name in

the infile statement or add another data step with another infile and input

statement and merge;

title 'raw\_buoy';

**data** raw\_27Aug07\_31Mar08;

infile "raw\_from\_gleon\_site\Sunapee\_raw\_gleon\_27Aug07\_31Mar08.csv"

firstobs=**2** dlm=', ' n=**2**; \*lrecl=500;

input date mmddyy10. time hhmmss. drop1 temp\_air\_C DO\_ppm PAR\_umolesm2s

relhum\_pct sensor\_temp\_C temp0m\_C temp0p5m\_C temp1m\_C temp1p5m\_C temp2m\_C

temp2p5m\_C temp3m\_C temp4m\_C temp5m\_C temp6m\_C temp7m\_C temp8m\_C temp9m\_C

temp10m\_C temp11m\_C temp13m\_C wind\_dir\_deg wind\_spd\_ms;

format date date9.;

format time time.;

drop drop1 sensor\_temp\_C;

**run**;

\*proc print data=raw\_27Aug07\_31Mar08; **run**;

**data** raw\_01Apr\_20May08;

infile "raw\_from\_gleon\_site\Sunapee\_raw\_gleon\_01Apr08\_20May08.csv"

firstobs=**2** dlm=', ' n=**2**; \*lrecl=500;

input date mmddyy10. time hhmmss. drop1 temp\_air\_C DO\_ppm PAR\_umolesm2s

relhum\_pct sensor\_temp\_C temp0m\_C temp0p5m\_C temp1m\_C temp1p5m\_C temp2m\_C

temp2p5m\_C temp3m\_C temp4m\_C temp5m\_C temp6m\_C temp7m\_C temp8m\_C temp9m\_C

temp10m\_C temp11m\_C temp13m\_C wind\_dir\_deg wind\_spd\_ms;

format date date9.;

format time time.;

drop drop1 sensor\_temp\_C;

**run**;

\*proc print data=raw\_01Apr\_20May08; **run**;

**data** raw\_20May\_28May08;

infile "raw\_from\_gleon\_site\Sunapee\_raw\_gleon\_20May08\_28May08.csv"

firstobs=**2** dlm=', ' n=**2**; \*lrecl=500;

input date mmddyy10. time hhmmss. drop1 temp\_air\_C DO\_ppm PAR\_umolesm2s

relhum\_pct sensor\_temp\_C temp0m\_C temp0p5m\_C temp1m\_C temp1p5m\_C temp2m\_C

temp2p5m\_C temp3m\_C temp4m\_C temp5m\_C temp6m\_C temp7m\_C temp8m\_C temp9m\_C

temp10m\_C temp11m\_C temp13m\_C wind\_dir\_deg wind\_spd\_ms;

format date date9.;

format time time.;

drop drop1 sensor\_temp\_C;

**run**;

\*proc print data=raw\_20May\_28May08; **run**;

\* merge raw data files;

**data** raw\_buoy;

set raw\_27Aug07\_31Mar08 raw\_01Apr\_20May08 raw\_20May\_28May08;

\* set missing values to missing;

if temp\_air\_C=-**6999** then temp\_air\_C='.';

if DO\_ppm=-**6999** then DO\_ppm='.';

if PAR\_umolesm2s=-**6999** then PAR\_umolesm2s='.';

if relhum\_pct=-**6999** then relhum\_pct='.';

if temp0m\_C=-**6999** then temp0m\_C='.';

if temp0p5m\_C=-**6999** then temp0p5m\_C='.';

if temp1m\_C=-**6999** then temp1m\_C='.';

if temp1p5m\_C=-**6999** then temp1p5m\_C='.';

if temp2m\_C=-**6999** then temp2m\_C='.';

if temp2p5m\_C=-**6999** then temp2p5m\_C='.';

if temp3m\_C=-**6999** then temp3m\_C='.';

if temp4m\_C=-**6999** then temp4m\_C='.';

if temp5m\_C=-**6999** then temp5m\_C='.';

if temp6m\_C=-**6999** then temp6m\_C='.';

if temp7m\_C=-**6999** then temp7m\_C='.';

if temp8m\_C=-**6999** then temp8m\_C='.';

if temp9m\_C=-**6999** then temp9m\_C='.';

if temp10m\_C=-**6999** then temp10m\_C='.';

if temp11m\_C=-**6999** then temp11m\_C='.';

if temp13m\_C=-**6999** then temp13m\_C='.';

if wind\_dir\_deg=-**6999** then wind\_dir\_deg='.';

if wind\_spd\_ms=-**6999** then wind\_spd\_ms='.';

\* create various date and time variables;

hour=hour(time);

min=minute(time);

datetime=dhms(date, hour, min, **0**);

format datetime datetime.;

drop min;

\* create a bogus variable temp15m\_C so this file matches the

one created in "Sunapee\_buoy\_data\_input.sas" and both can be

used with "Sunapee\_buoy\_data\_summary.sas";

format temp15m\_C best.;

temp15m\_C='.';

**run**;

\*proc print data=raw\_buoy; **run**;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\* create cleaned up dataset of all data;

title 'Sunapee\_buoy\_data';

**proc** **SQL**;

create table buoy.Sunapee\_buoy\_data as

select datetime, date, time, hour, DO\_ppm, temp0m\_C, temp0p5m\_C,

temp1m\_C, temp1p5m\_C, temp2m\_C, temp2p5m\_C, temp3m\_C, temp4m\_C,

temp5m\_C, temp6m\_C, temp7m\_C, temp8m\_C, temp9m\_C, temp10m\_C,

temp11m\_C, temp13m\_C, temp15m\_C, temp\_air\_C, PAR\_umolesm2s,

wind\_dir\_deg, wind\_spd\_ms

from raw\_buoy;

\*proc print data=buoy.Sunapee\_buoy\_data; **run**;