TUND Site: BigFoot Field Data Documentation and Photos

Contents:

The Universal Transverse Mercator (UTM) coordinate system is a grid-based method of specifying locations on the surface of the Earth. It is used to identify locations on the earth, but differs from the traditional method of latitude and longitude in several respects. The UTM system is not a single map projection. The system instead employs a series of sixty zones, each of which is based on a specifically defined Transverse Mercator projection.
The easting is the projected distance in meters of the position from the central meridian, while the northing is the projected distance in meters of the point from the equator.

TUND Plot Pictures README File

A set of five pictures was taken of each TUND plot on the following days:

- July 1, 2002
- August 12, 2002

In each set of images:

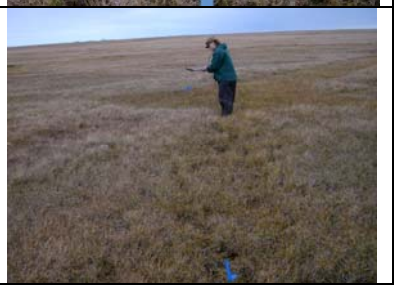
- first picture is of the plot center stake
- second facing north from plot center
- third facing east from plot center
- fourth facing south from plot center
- fifth facing west from plot center

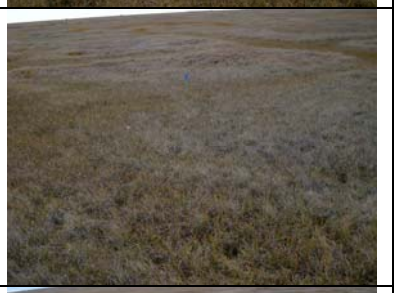
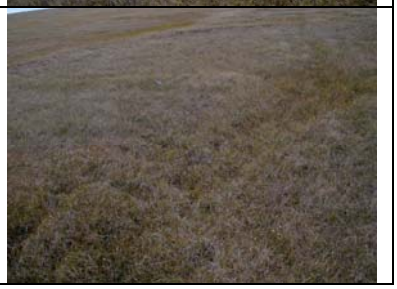
Subplots are numbered 1, 2, 3, 4, and 5 referring to center, north, east, south, and west, respectively

The image file name syntax follows this template: SITE_PLOT_SUBPLOT.jpg

For example, TUND_00_1.jpg is BigFoot site tundra, plot 0, subplot 1

Selected Plot Pictures: September 2, 2002

TUND Plot 7	Images
Subplot 1	
Subplot 2	

Subplot 3	
Subplot 4	
Subplot 5	

2002 TUND TISSUE NITROGEN README DOCUMENT (tund_nitrogen_analysis_readme.txt)

TISSUE NITROGEN CONCENTRATION DATA FOR SELECTED PLANTS**********

General Comments:

* Tissues were dried to a constant mass at 70 C and ground.
* Samples were analyzed using the Kjeldahl digestion technique at the UW Soil and Plant Analysis Lab, Madison, WI.
* Values are reported in total percent nitrogen.

2002 TUND ANPP, BIOMASS, LAI README DOCUMENT
(tund_jul_2002_anpp_biomass_lai_readme.txt)

BIGFOOT PROJECT - TUND site (Barrow, Alaska) **********

LAI DATA:

- -all lai values are unitless (m^2/m^2)
- -indirect measurements made w/ LiCor LAI 2000
  - -used 1/2 cap
    - -measurements made on:
      - -July 3-7, 2002
        - -only on 2nd order plots
      - -August 10-18, 2002
        - -on all 101 plots
- -direct estimates of lai used date, site, and species specific sla values
  - -values given are actually plant area index (pai)
  - -used clip plot biomass values to estimate lai at a given subplot, this was then averaged to the plot level
    - -clip plot size = 0.25m^2
  - -SLA (specific leaf area)
    - -images were scanned, then analyzed in Adobe Photoshop 6.0, by turning image into black and white, adjusting the threshold,
      and counting the number of black pixels
- -moss lai estimages
  - -measurements taken once during year (August 10-18, 2002)
    - -based on percent cover of moss at each subplot
      - -divided percent cover by 100 to estimate a lai value

ANPP DATA:

- -all mass values are in kg/ha
- -5 clip plots (0.25m^2) were taken at each subplot
  - -the same area was not sampled twice in the same growing season
- -sample dates
  - -July 3-7, 2002
    - -only on 2nd order plots
  - -August 10-18, 2002
    - -on all 101 plots
- -sample ring was 0.25m^2
- -anpp data does NOT include bryophyte production

MAX BIOMASS DATA:

- -all mass values are in kg/ha
- -5 clip plots, each 0.25m^2, were taken at each subplot
- -sample dates
  - -August 10-18, 2002
    - -when max biomass occurred
- -biomass data does NOT include bryophyte production

VARIABLE DEFINITIONS

Site = bigfoot site id
Year = year data was collected
Month = month data was collected
Date = date of data collection
Plot = bigfoot plot id (0-100)
newgrass = grass growth for current year (alive)
oldgrass = grass from previous years (dead)
sedge = sedge mass (alive)
forb = forb mass (alive)
shrub = total shrub mass, not separated by component
shstemnew = new shrub stem, current year's growth
shstemold = old shrub stem, previous year's growth
shleafnew = new shrub leaf, current year's growth
shleafold = old shrub leaf, previous year's growth
totalanpp = newgrassmass + sedgemass + forbmass + shstemnew + shleafnew (excludes shstemold, shleafold, and shrubmass)
totalbiomass = newgrassmass + sedgemass + forbmass + shrubmass + shstemnew + shstemold + shleafnew + shleafold
newgrass_se = standard error of newgrassmass
oldgrass_se = standard error of oldgrassmass
sedge_se = standard error of sedgemass
forb_se = standard error of forbmass
shrub_se = standard error of shrubmass
shstnew_se = standard error of shrubstemnew
shstold_se = standard error of shrubstemold
shlenew_se = standard error of shrubleafnew
shleold_se = standard error of shrubleafold
toanpp_se = standard error of totalanpp
tobiomass_se = standard error of totalbiomass
newgrasslai = direct measure of new grass lai from clip plots, using site/species/date specific sla (specific leaf area)
oldgrasslai = direct measure of old grass lai from clip plots, using site/species/date specific sla (specific leaf area)
sedgelai = direct measure of sedge lai from clip plots, using site/species/date specific sla (specific leaf area)
forblai = direct measure of forb lai from clip plots, using site/species/date specific sla (specific leaf area)
shrublai = direct measure of shrub lai from clip plots, using site/species/date specific sla (specific leaf area)
totaldirectlai = newgrasslai + sedgelai + forblai + shrublai
negrlai_se = standard error of newgrasslai
olgrlai_se = standard error of oldgrasslai
selai_se = standard error of sedgelai
folai_se = standard error of forblai
shlai_se = standard error of shrublai
todilai_se = standard error of totaldirectlai

mosslai = lai of moss, assuming 100% ground cover equals lai of 1
mosslai_se = standard error of mosslai
optical_lai = optical lai measurement taken w/ LI-COR LAI 2000
optical_fpar = fapar (fraction of absorbed photosythetic active radiation) calculated using the 'difn' output from the LAI 2000
optical_lai_se = standard error of optical_lai
optical_fpar_se = standard error of optical_fpar

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created on: 5/6/03

2002 TUND SOIL RESPIRATION README DOCUMENT
(tund_soil_resp_avg_collar_WD_LD_readme.txt)

BIGFOOT PROJECT - TUND site (Barrow, AK) **********

Respiration Data:

- -measurements taken w/ LICOR 6250 CO2 analyzer
- -chamber size = 10759 cc
- -light and dark measurements were taken at each collar
- -20 collars were distributed in a transect over two intensive plots (35&36)
  - -10 collars in wet sites (trough)
  - -10 collars in dry sites (upland)
- -vegetation was not clipped prior to measurements

Variable Definitions:

site	= BigFoot site id
year	= year data was collected
month	= month data was collected
date	= day of month data was collected
collar	= 1-10 in dry, 1-10 in wet
wet_dry	= wet (W) or dry (D) site
light_dark	= light (L) measurements taken with no cover over chamber, dark (D) measurements were taken with black cloth covering entire chamber
PHOTO	= photosynthesis (micromol C/m2/sec)
gCm2sec	= grams of carbon per meter squared per second
gCm2yr	= grams of carbon per meter squared per year
T2	= soil temperature (C) at 2 cm
T10	= soil temperature (C) at 10 cm
TAIR	= air temperature (c), shaded temperature probe
photo_se	= standard error of PHOTO
gCm2sec_se	= standard error of gCm2sec
gCm2yr_se	= standard error of gCm2yr

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Changes made: