Data Crunching Protocol

As data is collected each unit then gets "crunched" or processed. This is a process that averages all the data together. Scrap paper, a completed unit data sheet(s), the crunching data sheet and a calculator are needed. It's often helpful to process data with a partner.

Units that have a mixed amount of forest and field points may need processed by the staff lead as these may require GIS referencing.

1. First, fill out the information at the top such as date crunched, facility (location being cover mapped), unit number and crunched by name.
2. Ignore the reference photo #.

-Canopy-

3. Skip *cover type* because that is filled out at last.
4. Next find the most common *stocking* for the canopy.
    a. Look at each point within the unit and tally the total occurrences of each letter on your scrap paper. The letter with the most occurrences should be listed for the **stocking**. For example, a unit with 5 points, where 2 of those points have a stocking of C and the other 3 points have a stocking of D, the most common stocking is D for this unit and should be recorded on the crunching data sheet.

5. *Size class* is only done for canopy trees. Sum together every single canopy tree dbh measurement and then divide by the total number of trees. Refer to the size class chart in the Covermap Guide to determine where the trees in that unit fall. For example, if the average dbh is 21.7 it would fall in the size class of 5 (mature). If a unit does average to a size class 5, please also check the criteria found in the Covermap Guide first for old growth (size class 6) to see if that is more appropriate before assigning a size class 5 designation.
    a. Step 5 gives you both your *average tree diameter* and the matching *size class.*

6. To calculate the *3 dominate spp* list each species found in the canopy for the unit and make a tally for each time that species occurs.
    a. Find the 3 species (if there are 3) that occurred the most and record their code on the crunching sheet. If there is a tie for the most dominant species use the species with the highest average dbh.

7. The *largest tree diam/spp* category is simply the largest tree found in the unit and what species it is. Record both the size (dbh) of the tree and the abbreviated letter(s) code for the tree.

-Subcanopy-

The categories under *subcanopy* follow the same protocol as *canopy* in regards to ***average tree diameter*** and ***3 most dominant spp***.

For ***forest understory woody spp***, simply list every unique forest understory woody species once, regardless of how many times it occurred in the unit. Record the corresponding code(s).

-Understory and Features-

8. For ***herbaceous plants*** and ***special features*** simply list the associated abbreviated code only once, regardless of how many times it occurred in the unit.

9. *Woody invasive* data requires a letter and a number. Find the number first. To find the ***woody invasive number*** assign a value to each letter (woody invasive stocking). The values are as follows:
    a. 0=0
    b. A=1
    c. B=2
    d. C=3
    e. D=4

10. Tally the number of times each letter occurs in the unit relating to woody invasive stocking. Add together the value of those letters and then divide by the total number of points in the unit. This will give you an average number for the woody invasives.
    For example:
    a. Unit "555" has 3 A's, 2 B's, 1 C, and 1 D
    b. With the values 3 A's=3, 2 B's=4, 1 C=3, 1 D=4
    c. Add together the values (14) and then divide by the total number of points (7).
    d. *The **woody invasive number** is 2.*

11. . The ***woody invasive stocking*** letter is determined by the *woody invasive number* and the value assigned to it. Find the range that the number fits into and list the letter.
    a. A is .1 to 1.5
    b. B is 1.6 to 2.5
    c. C is 2.6 to 3.5
    d. D is 3.6 to 4
    - By putting a number value to the *woody invasive stocking*, it gives Conservation a more detailed understanding of the invasive pressure of the unit.

12. List each ***woody invasive species*** found in the unit only once regardless of how many times it was found.

13. List each ***Special Feature(s)*** found in the unit only once regardless of how many times it was found.

14.   The *deer impact* data requires a letter and a number. Find the number first. To find the **deer impact number** assign a value to each letter.

a.   0=0
b.   A=1
c.   B=2
d.   C=3
e.   D=4

15.   Tally the number of times each *deer impact* letter occurs in the unit. Add together the value of those letters and then divide by the total number of points. This will give you your **deer impact number**. For example:

    a.   Unit "555" has 3 A's, 2 B's, 3 C's, and 2 D's
    b.   With the values 3 A's =3, 2 B's = 4, 3 C's = 9, 2 D's = 8
    c.   Add together the values (24) and divide by the total number (10) of values
    d.   The *deer impact number* in this example is 2.4

16.   The **deer impact (letter)** is determined by the *deer impact number* and the value assigned to it. Find the range that the number fits into and list the letter.

a.   A is .1 to 1.5
b.   B is 1.6 to 2.5
c.   C is 2.6 to 3.5
d.   D is 3.6 to 4

-Cover Type-

17. Use the *Cover Mapping Field Reference List* and *the Key to Forest Communities of Five Rivers MetroParks* found in the *Covermap Guide* to determine the **cover type** that best fits the unit.

18. Looking at the *3 dominant species* found in the canopy and sub canopy, use either the *forest communities key* or the *field reference list* to determine the most appropriate cover type. The **cover type** will be expressed as a number. For example, 522 (Beech/Maple).

Pay close attention to each data point when crunching. At times part of the unit may be very different from the rest of the unit. If this is the case unit lines may need redrawn. They can be merged with neighboring units or split to make a different unit. Looking at the GIS maps showing the data points can be helpful in deciding this. Please make comments when in the field on the data sheet when you encounter such observations. For example, unit "555" has 3 points. 2 of these points are characteristic of a beech maple forest while the other point is dominated by red cedar. Look at nearby points in other units to see if they are also dominated by red cedar or if another unit needs to be created. If the unit changes, the individual points in that unit will need to be re-crunched.