**PSP web interface for selecting and downloading data and data summaries**

* **Cover page** (bare bones for now): **Pacific Northwest Permanent Sample Plot Program**
* **User information** (we need to track this for grant reporting):*name, organization/affiliation, email address, purpose for using data*
* **Select data by geographic location, administrative unit, study focus, or specific stand**
  + Do you want data for a specific stand, an administrative area (e.g., national forest, national park, experimental forest), a particular study type (e.g., Douglas-fir growth and yield), or a region within the Pacific Northwest?
  + Geographic locations - use variable GEO\_LOC in *PSP\_stand\_info\_subset\_2015.csv*
    - Oregon Coast (OR\_Coast)
    - Olympic Peninsula of Washington (WA\_OlyPen)
    - Western Cascades of Oregon (OR\_WestCasc)
    - Western Cascades of Washington (WA\_WestCasc)
    - Eastern Cascades of Oregon (OR\_EastCasc)
  + Experimental Forests, National Parks, National Monuments – can use either PSP\_STUDYID or lists of STANDID as shown below
    - Cascade Head Experimental Forest
      * STANDID = CH01, CH03, CH04, CH05, CH06, CH07, CH08, CH09, CH10, CH11, CH12, CH13, CH14, CH15, CH17, CH22, CH23, CH41, CH42, HS01, NCNA
    - HJ Andrews Experimental Forest Reference Stands (PSP\_STUDYID = HJRS)
    - HJ Andrews Experimental Forest Watersheds (PSP\_STUDYID = HJWS)
    - Wind River Experimental Forest
      * STANDID = MUN2, MUNA,,WR02,,WR04,,WR05, WR09, WR90
    - Mount St. Helens (PSP\_STUDYID = MSHV)
    - Olympic National Park
      * STANDID = HR01, HR02, HR03, HR04
    - Mount Rainier National Park (PSP\_STUDYID = MRRS)
  + Study focus (species-centric) – use PSP\_STUDYID in *PSP\_stand\_info\_subset\_2015.csv*
    - Alder-Conifer Study (ALCO)
    - Douglas-fir Growth and Yield (DFGY)
    - Hemlock-Spruce Growth and Yield (HSGY)
    - Mountain Hemlock Growth and Yield (MHGY)
    - Noble Fir Growth and Yield (NFGY)
    - Ponderosa Pine Growth and Yield (PPGY)
  + Specific stands. Use list in STANDID in *PSP\_stand\_info\_subset\_2015.csv* but exclude RS39 and RS40 from list of options.
* **Select data levels**:
  + Individual trees
  + Plots
  + Stands
  + All levels (tree, plot and stand)
* **What variables are you interested in downloading?**
  + State variables
    - Number of trees
    - Basal area
    - Volume
    - Biomass (local equation)
    - Jenkins biomass
  + Change variables
    - Delta TPH
    - Delta basal area
    - Delta volume
    - Delta biomass
    - Delta Jenkins biomass
    - Net Primary Productivity (NPP)
* **For the stands of interest, are you interested in specific species or all species?**
  + Particular species or all species? Ideally, this would be an interactive lookup of what species occur in the stands selected. Is that possible? Or, if too cumbersome, we could just do away with this option and provide all species.
* **What time period is of interest?**
  + Particular range of years or all years? Again, ideally this would be an interactive lookup of what years exist for the stands selected. If too cumbersome, we could just do away with this option and provide all years.

Output

* **Graphics** (*with option to do graphics only and no data download – for exploratory purposes*)
  + Variable over time (line graph by year)
    - By stand but would have to constrain the number of stands to be legible
    - Species within a stand
    - Live vs dead within a stand
  + Stacked bar charts of species composition over time (one bar per year). Limited to one stand at a time.
  + X-Y plots by species or stands (biomass x dbh, basal area x biomass, local biomass x Jenkins biomass)
* **Data preview**
* **Data download**
* **Statistics (?)**
* **Ancillary info** *(metadata, FAQ’s, caveats)*

Data sets we will provide

* **Tree-level data** (Fox output file: all\_stand\_indvtree\_output.csv)
  + From TP001 Entity 11 plus additional variables from Entity 1 (master tree ID), Entity 2 (tree remeasurement) and Entity 10 (equation set)
    - Merge Entity 11 with Entities 1 and 2 using TREEID and YEAR\_RAW (but note that Fox’s YEAR\_RAW is not always correct because it does the same thing for YEAR\_RAW that it does for DBH of missing trees – that is, assigns the last-known value. Example, TREEID AB08000300039 was missing in 2008, and in Fox’s output it gets the dbh from 2002 as it should, but YEAR\_RAW also = 2002.)
      * From Entity 1, need to get SPECIES
      * From Entity 2, need to get TAG, TREE\_STATUS, DBH, CHECK\_NOTES
    - Then merge with Entity 10 by SPECIES to get COMPONENT.
  + Tree-level state variables (see above for source of each variable)
    - TREEID
    - STANDID
    - PLOT
    - TAG
    - SPECIES
    - YEAR\_RAW
    - YEAR\_AGG
    - TREE\_STATUS
    - DBH\_CM
    - BA\_M2HA
    - COMPONENT
    - VOL\_M3HA
    - BIO\_MGHA
    - JENKBIO\_MGHA
* **Plot level summaries**
  + Merge TP001 Entity 8 with Entity 1 to get STANDID
  + Instead of using Entity 8, use file: ***all\_plot\_composite\_output.csv.*** Entity 1 is ok to use.
  + Plot-level state variables
    - STANDID
    - PLOTID
    - SPECIES
    - YEAR\_AGG
    - PORTION
    - TPH\_NHA
    - BA\_M2H
    - VOL\_M3HA
    - BIO\_MGHA
    - JENKBIO\_MGHA
  + Plot-level change variables (Entity 9), use file: ***all\_plot\_composite\_npp.csv***
    - STANDID
    - PLOTID
    - SPECIES
    - YEAR\_BEGIN
    - YEAR\_END
    - DELTA\_TPH\_NHA
    - DELTA\_BA\_M2HA
    - DELTA\_VOL\_M3HA
    - DELTA\_BIO\_MGHA
    - DELTA\_JENKBIO\_MGHA
    - MEAN\_ANNUAL\_NPP
* **Stand-level summaries** (Fox output file: all\_stands\_biomass\_composite\_output.csv)
  + Stand-level state variables (TP001 Entity 6, though for now use file: ***all\_stands\_biomass\_composite\_output.csv***
    - STANDID
    - SPECIES
    - YEAR\_AGG
    - PORTION
    - TPH\_NHA
    - BA\_M2HA
    - VOL\_M3HA
    - BIO\_MGHA
    - JENKBIO\_MGHA
    - NO\_PLOTS
  + Stand-level change variables (TP001 Entity 7, but for now use file: ***all\_stand\_composite\_npp.csv***
    - STANDID
    - SPECIES
    - YEAR\_BEGIN
    - YEAR\_END
    - DELTA\_TPH\_NHA
    - DELTA\_BA\_M2HA
    - DELTA\_VOL\_M3HA
    - DELTA\_BIO\_MGHA
    - DELTA\_JENKBIO\_MGHA
    - MEAN\_ANNUAL\_NPP
    - NO\_PLOTS
    - NO\_DETAILPLOTS (*currently not in Fox’s output*)
* **General stand information** - from intermediate file ***PSP\_stand\_info\_subset\_2015.csv***(this file is not in TP001 and has two data fields not found in TP001)
  + PSP\_STUDYID
  + STANDID
  + LOC\_NAME
  + STATE
  + GEO\_LOC
  + VEG\_TYPE
  + APPROX\_AGEDOM
  + SERAL
  + PLOT\_EST
  + LASTREM
  + AREA\_HA
  + ELEV\_M
  + LATITUDE
  + LONGITUDE

**Database Code:** TP001

**Title:** PSP data - common data for TV010, TP041, TP073, TP091, TP114, TP115

**Principal Investigator:** Mark E. Harmon

**Program coordinator:** Rob Pabst

**Database manager:** Suzanne Remillard

**Web page:** <http://andrewsforest.oregonstate.edu/data/abstract.cfm?dbcode=TP001&topnav=97>

**List of Entities:**

1. Master tree identification: A complete and unique list of all trees that are currently tagged or were ever tagged across all the vegetation studies in the permanent sample plots and Andrews watersheds
2. Tree remeasurement
3. Tree mortality
4. Plot attributes: General current plot attributes. For specific history see entity 12.
5. Stand attribute data: General stand information
6. Stand by species summaries for density, basal area, volume and biomass of live and dead trees
7. Stand by species summaries for bole npp and changes (deltas) in density, basal area, volume and biomass
8. Plot by species summaries for density, basal area, volume and biomass of live and dead trees:
9. Plot by species summaries for bole npp and changes (deltas) in density, basal area, volume and biomass
10. Equation set: A complete list of the equations used to calculate volume or biomass for each tree species. Some species have separate equations for very large trees. Also included are national standardized biomass equations from Jenkins et al (2003).
11. Individual tree summaries for density, basal area, volume and biomass of live and dead trees
12. Activity history by plot and year: A full matrix describing the measurement activity of plots within stands by year; used by programs to calculate summaries
13. Stand remeasurement management: Used for project administration.
14. Spatial data for individual tree location: Used for making stem maps. Generally these are local x-y coordinates. For many permanent plots at the HJ Andrews Experimental Forest, tree locations are also provided in UTM coordinates (NAD83).