

## Lists Described in Grant Proposal

A few lists were described in the Methods and Measurements section of the Grant Proposal that would be compiled using the data collected.

**The plants utilized during shortages of pollen** (shortages shown by low amounts of pollen trapped) can be found by comparing the Average Pollen Intake timelines with the Pollen Percentage Tables. They include late season Asters, Amaranth, Centaurea, the Chicory/Lettuce type, Clematis, Clover, Corn, Grass, Honeysuckle, Ironweed, Plantain, Ragweed, Sumac, Tanoak, Teasel, Virginia Creeper, and Wild Carrot.

**The plants that at any time comprised over 45% of the bees' pollen intake** are considered "important" and can be seen easily in the Pollen Importance Tables. They include (in order of highest to lowest percentage) the Goldenrod / Aster / Snakeroot type, Sumac, Clover, Honeysuckle, Virginia Creeper, Corn, Ragweed, a summertime Asteraceae "Thoroughwort" type, and Lambsquarters. Wingstem came close to being included, with its highest percentage at 41.25%, and its actual volume was estimated to be greater than that of Virginia Creeper. Plantain also came fairly close at 38.5% and an actual volume greater than that of Clover.

**Plants unique to certain areas** can be found by comparing the pollen percentage tables. The occurrence of Honeysuckle pollen was unique to the Salem and Jackson County locations. The "Magnolia" type was unique to Raleigh County. Pokeweed and Sweet William were unique to Clarksburg. The Hops/Hemp type was unique to Jackson County. The high occurrence of Amaranth pollen was unique to the Quiet Dell location, and the high amount of Corn to Clarksburg. Traces of Tanoak pollen were found in multiple locations, but only attained secondary status at Quiet Dell. Virginia Creeper was important at the Salem location in 2013 and 2014, but not in 2015. Hosta pollen was only found in the Salem samples, in trace amounts all three years. Verbena and Smartweed were also unique to Salem. The summertime Asteraceae "Thoroughwort" type was only important at Raleigh county, and virtually absent elsewhere.

**Plants universally important** can also be found by comparing the pollen percentage tables. The two types comprising important percentages universally (at all locations) were clover and the Goldenrod / Aster / Snakeroot type. Plantain pollen was found at all locations, often contributing to a considerable degree. Wingstem contributed considerably to all locations except Raleigh County.

**The level of diversity of plant types** present in a sample is relative. The average number of pollen types found in all the analyzed samples combined was about 7.66. There were eight samples in which 3 or fewer types were found, and eight samples in which 12 or more types were found. The chart below shows the number of pollen types found in all 62 samples analyzed from each location. The vertical axis represents the number of different pollen types found, with the samples listed across the horizontal axis.

As should be expected, periods of low diversity tended to occur when fewer species were blooming, but also occurred when a single species provided a superabundant supply of pollen, such as Winged Sumac. There was a general pattern of higher pollen diversity in the August samples compared to the other months. Across all locations, October showed the lowest average pollen diversity at 4 types. July was slightly above average at 7.73. September was above average at 7.93, and August showed the highest average diversity of pollen at 9.8 types per sample.

