



## MOSAIC SILVICULTURE

### APPENDIX B

## GLOSSARY

### ANNOTATED

**Afforestation** – The creation of a forest where no forest previously existed. A tree “farm”.

**Allelopathic** - Allelopathy is the inhibition of growth of a plant due to [biomolecules](#) released by another. In Eucalyptus the leaf litter around the tree is allelopathic and will inhibit competing vegetation.

**Bagasse** -The fibrous residue remaining after [sugarcane](#) or [sorghum](#) stalks are crushed to extract their juice. Currently used as a renewable resource in the manufacture of pulp and paper products and building materials.

**Ethanol/Butanol** - Ethyl or Butyl Alcohol. Butanol at 85 percent strength can be used in cars designed for gasoline without any change to the engine (unlike 85% ethanol), and it contains more energy for a given volume than ethanol and almost as much as gasoline

**Catalytic** - A material that can speed up or slow down chemical reactions without being consumed itself. Materials which can be used to reduce the production of gases or particulates from combustion.

**Cellulose** - A complex carbohydrate,  $(C_6H_{10}O_5)_n$ , that is composed of glucose units and forms the main constituent of the cell wall in most plants. Cellulose is the most common organic compound on earth. It is converted into the organic compounds used as fuel (ethanol/butanol). Whereas starch undergoes a crystalline to amorphous transition when heated beyond 60-70 °C in water (conversion of corn to ethanol), cellulose requires a temperature of 320 °C to become amorphous in water. Chemically, cellulose can be broken down into its glucose units by treating it with concentrated acids at high temperature.

**Cogeneration - (CHP)** Generally refers to the use of a heat engine or a power station to simultaneously generate both electricity and useful heat.

**Coppice (Growth)** - Regeneration from a stump and root system after removal of the top growth. Eucalyptus, Birch, Oak and Alder exhibit coppice growth. Continuously coppiced trees can have root systems centuries old.

**Crown** - The upper part of the branch/leaf structure of a tree. Large crown trees would be Oak, Sycamore etc. Small crown would be Eucalyptus, most conifers, etc.

**Dendrothermal** (power plant) - Wood fired power plant. "Dendro" = Greek for "tree".

**Dense Energy** - Energy stored in a compact and/or lightweight medium. Ethanol and gasoline would be dense energy. Battery stored energy would not.

**Dibble Tube** – Specially designed container for starting and transplanting seedlings. Increases efficiency of mechanized handling and planting, reduces transplant shock (faster growth) and improves survival rate.

**E. Globulus** – The most commonly planted Eucalypt in California. One of over 600 sub-species of Eucalyptus.

**Ethanol** - Ethyl alcohol. Commonly used as an additive in gasoline. Also the alcohol found in alcoholic beverages. It cannot be used as a fuel without modification of the engine or mixing with gasoline.

**Genetic Sequencing** – The [primary structure](#) of a real or hypothetical [DNA molecule](#) or strand expressed as a series of letters.

**Gum Tree** - Common name for Eucalyptus Globulus. Sometimes applied as a common name for many species of Eucalyptus including Red Gum, Manna Gum, Winter Gum, etc. Bay leaves used as a flavoring in cooking are actually Eucalyptus.

**Hardwood/Softwood** - Hardwoods tend to be broadleaf and deciduous except in the tropics. Softwoods tend to be conifers and produce seeds in cones. The actual hardness of the wood is not the determining factor as there is a wide variation in the actual hardness of both types

**Institute of Forest Genetics** – A division of the U.S. Forest Service with locations in Placerville and Davis, California.

**Introduced Species** - Species which are not presently found locally but which are brought from other regions by humans or natural process. They may or may not be able to survive without human assistance.

**Invasive Species** – Plants which negatively impact other plants, usually by crowding. They are often difficult to contain and hard to eradicate.

**Lignin** - Lignin fills the spaces in the [cell wall](#) between [cellulose](#), [hemicellulose](#), and [pectin](#) components conferring mechanical strength to the [cell wall](#) and by extension the plant as a whole. It is a byproduct of biomass fuel production but lignin also has industrial uses particularly for manufacture of "natural" plastics.

**Mosaic (Infill) Silviculture** - Locating tree plantations on distributed - often widely distributed - sites as opposed to large contiguous tracts .

**Naturalized Species** - Introduced species which have adapted to an environment and survive well without any human assistance.

**Pelletized Fuel** - Processed wood or other biomass in a form that can be efficiently handled and burned with less noxious emissions than unprocessed materials.

**Provenance** – The set of characteristics of soil, water, climate, etc. that describe a specific area. Similar to an “appellation”

**Ramet** – An individual member of a clone.

**Rotation** - The length of time between harvests. Eucalyptus fuel wood has a typical rotation of 7-10 years.

**Substitution** - A term often used to describe the alternative or secondary uses of materials or resources.

**Stover** - The leaves and stalks of corn, sorghum or soybean plants that are left in a field after harvest. The residue left after any cereal grain or grass has been harvested for its seed. Stover has attracted some attention as a potential fuel source.