**Cool-season Plant** - A plant that makes its major growth during the cool part of the year, mainly in spring but in some localities in the fall or winter.

**Cooperative Agreement** - A written document evidencing the intent of two or more parties to cooperate in an undertaking that will result in mutual benefit to the parties concerned. The parties work jointly in the undertaking -- not each working within its own sphere of work and authority as under a memorandum of understanding relationship. The cooperative agreement is a fiscal document, and the period of time covered must not exceed the period for which funds are available for obligation.

**Cover Crop –** Close-growing crop grown primarily for the purpose of protecting and improving soil between periods of regular crop production.

**Cover Type** - The existing vegetation of an area.

**Cross Pollination** - The transfer of pollen from one flower (artificially or naturally) to the stigma of another; may occur on the same plants or on different plants, depending on the species and other conditions.

**Crossing-Over** - The exchange of corresponding segments between chromatids of homologous chromosomes during meiotic prophase. The genetic consequence is the recombination of linked genes.

**Cultivar** - The international term cultivar denotes an assemblage of cultivated plants that is clearly distinguished by any characters (morphological, physiological, cytological, chemical, or others) and when reproduced (sexually or asexually), retains its distinguishing characters. The term is derived from “cultivated variety”, or their etymological equivalents in other languages. For cultivated plants**,** the term cultivar is the equivalent of a botanical variety, in accordance with the International Code of Nomenclature of Cultivated Plants 1980. Usage: cultivar names are not italicized, and are indicated by single quotes at first use, or the word cultivar (but not both). The abbreviation cv. is properly used only with a binomial name: Genus species cv. cultivar name. Omit the abbreviation if single quotes are used: Genus species ‘cultivar name’.

**Cultural Evaluation** - Studies designed to obtain information regarding establishment, management and production of plant materials. They may be conducted on or off the center at any stage of the evaluation process.

**Defoliant** - A compound that causes the leaves or foliage to drop from a plant.

**Demonstration Plantings** - A planting used primarily to promote use and acceptance of new technology or releases; no evaluations are done and no data is collected.

**Desiccant** - A compound that promotes dehydration or removal of moisture from plant tissue.

**Desired Plant Community** - A plant community which produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the minimum quality criteria for the soil, water, air, plant and animal resources, and the land use plan/activity plan objectives established for an ecological site(s). The desired plant community must be consistent with the site's capability to produce the desired vegetation through management, land treatment, or a combination of the two.

**Diluent** - Any liquid or solid material serving to dilute an active ingredient in the preparation of a formulation.

**Dioecious** - Having staminate and pistillate flowers occurring on different plants, that is, having distinct male and female plants (e.g. buffalograss).

**Diploid** - Having two chromosomes of each kind. Having the basic chromosome number doubled.

**Direct Application** - Method of applying chemicals or fertilizers directly to a restricted area, such as a row or a bed at base of plants.

**Diversity** - The distribution and abundance of different plants and animal communities within an area. Also a measure of the number of species and their relative abundance within a given association of organisms. Areas of high diversity are characterized by a great variety of species; usually relatively few individuals represent any one species. Areas with low diversity are characterized by a few species; often relatively large numbers of individuals represent each species.

**Dormancy** - An internal condition of the chemistry or stage of development of a viable seed that prevents its germination, although temperature and moisture are adequate for growth.

**Dormant Seeding** - Planting seed during late fall or early winter after temperatures become too low so that seed germination occurs the following spring.

**Ecesis** - Establishment and development of a plant in the plant community.

**Ecocline** - Series of biotypes within a species that shows a genetic gradient correlated with a gradual environmental gradient.

**Ecological Niche** - Role of an organism in an ecological system. Includes the physical space in a habitat occupied by an organism; its functional role in the community (e.g., its trophic position); and its position in environmental gradients of temperature, moisture, pH, soil, and other conditions of existence.

**Ecological Optimum** - The most favorable conditions in the environment for the growth and reproduction of an organism.

**Ecological Race** - Group of local populations within a species in which individuals have similar environmental tolerances. Wide-ranging species may consist of many ecological races.

**Ecological Response Unit** - A unit of land that is homogeneous in character such that similar units will respond in the same way to disturbance or manipulation. Syn. ecological site, ecological type.

**Ecological Site** - A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in ability to produce vegetation and to respond to management. Syn. Ecological type, ecological response unit.

**Ecological Status** - (1) The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree of which the kinds, proportions, and amounts of plants ina community resemble that of the potential natural community. If classes or ratings are used, they should be described in ecological rather than utilization terms. For example, some agencies are utilizing four classes of ecological status ratings (early seral, midseral, late-seral, potential natural community) of vegetation corresponding to 025%, 2650%, 5175%, and 76-100% of the potential natural community standard. Soil status is a measure of present vegetation and litter cover relative to the amount of cover needed on the site to prevent accelerated erosion. This term is not used by all agencies. (2) The present state of vegetation and soil protection of an ecological site in relation to the historic climax plant community for the site. Vegetation status is the expression of the relative degree of which the kinds, proportions, and amounts of plants in a community resemble that of the historic climax plant community. If classes or ratings are used, they should be described in ecological rather than utilization terms.

**Ecological System** - See “ecosystem”.

**Ecological Type** - A land classification category which is more specific than a phase of a habitat type. Ecological types are commonly used to differentiate habitat phases into categories of land which differ in their ability to produce vegetation or their response to management. Syn. ecological response unit, ecological site.

**Ecophene** - Plants differing in appearance, especially in the size of vegetative parts, numbers of stems, erectness, and reproductive vigor but belonging to essentially homogeneous genetic stock. Their distinctness is due entirely to environmental influences, for when different ecophenes are transplanted into the same habitat these differences disappear.

**Ecosystem** - Energy-driven complex of one or more organisms and their environment. Organisms together with their abiotic environment, forming an interacting system, inhabiting an identifiable space. The whole system, in the sense of physics, including not only the organism complex, but also the whole complex of physical factors forming what we call the environment. The complex of living and nonliving components in a specified location that comprise a stable system in which the exchange of material follows a circular path such as a biome. A community of organisms and the environment in which they live. A system of ecological relationships in a local environment, including relationships between organisms, and between the organisms and the environment itself. Syn.: ecological system.

**Ecotone** - Transitional zone between two vegetational types or vegetational regions. A transition area of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of its own. Varies width depending on site and climatic factors. A transition line or strip of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of own.

**Ecotype** - (1) A population of plants that has become genetically differentiated in response to the conditions of a particular habitat. The plants may vary in growth habit, maturity, and other characteristics such as pubescence and flower color. Sometimes referred to as a geographical race. (2) A transition area of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of its own. Width varies depending on site and climatic factors. Transition zone between two vegetation types or vegetation-type regions. (3) A transition line or strip of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of own. (4) A locally adapted population within a species which has certain genetically determined characteristics; interbreeding between ecotypes in not restricted. (5) A variety or strain within a given species that maintains its distinct identity by adaptation to a specific environment. (6) A locally adapted population of a species which has a distinctive limit of tolerance to environmental factors. (7) A variant type within an ecospecies.

**Ecovar** - The offspring of native species that have been developed from original plant material collected form a specific ecological region. Selection is done with minor emphasis on improving agronomic characteristics, and major emphasis on maintaining genetic diversity. See also “ecotype”.

**Educational Plantings** –Plantings designed to introduce the establishment and uses of new or potential releases to the public. Educational plantings show one or more conservation practice uses for the plant material, possibly in comparison to a standard cultivar or species; plantings may be established on or off-center. See also “demonstration plantings”.

**Emulsifying Agent** - A surface active material that facilitates the suspension of one liquid in another.

**Emulsion** - The suspension of one liquid as minute globules in another liquid; for example, oil dispersed in water.

**Environment** - The sum of all external conditions that affect an organism or community to influence its development or existence.

**Environmental Range** - Range of environmental conditions in which, at a given time, the members of a species live.

**Epinasty** - Increased growth on the upper surface of a plant organ or part (especially leaves) that causes it to head downward.

**Epithet** - The final word or combination of words in a name that denotes an individual taxon.

**Exotic** - A term describing an organism introduced from another country or continent.

**Facultative Weed** - Weed found growing both wild and in association with human activity.

**Field Evaluation Planting (FEP)** - Old name for off-center evaluations; term not currently used by the PM program. See “off-center evaluations”.

**Field Plantings** - Final stage of technology development or plant selection; plantings used primarily by PMSs to develop new methods or technology or evaluate the adaptability of new releases; data is collected and analyzed statistically.

**Field-Scale Increase** - The reproduction of plant materials for use in field plantings and by cooperating agencies to obtain the final data needed to determine the feasibility of a variety release.

**Firm Seed** - Seed, other than hard seed, that neither germinates nor decays during a prescribed test period under prescribed test conditions. Firm ungerminated seed may be alive or dead.

**Forb** - Any non-woody plant that is not a grass, sedge, or rush.

**Foundation Seed** – The progeny of breeder or foundation seed that is so handled as to most nearly maintain specific genetic identity and purity. Production may be carefully supervised by the originating agency and approved by the certifying agency, the agricultural experiment station, or both. See also “seed certification classes”.

**Frost-Free Period** - The period, number of days or both between the last frost in spring and the first frost in fall.

**Gene Bank** - A storage facility where germplasm is stored in the form of seeds, pollen, or in vitro culture, or in the case of a field gene bank, as plants growing in the field.

**Gene Flow** - The transfer of genes from one population to another. See also “genetic flow”.

**Gene Frequency** - The relative frequency with which a particular gene is present in a particular population of a species or other group.

**Gene Pool** - The total stock of genes in a breeding population, with each gene representing a number of alleles. See also “genetic pool”.

**Genetic Diversity** - The total amount of genetic variation present in a population or species. Having a heterogeneous constitution, reacting differently to diverse external condition. (Applied to a breeding population, variety, or species.). The genetic constitution of an individual or group.

**Genetic Drift** - Chance occurrences in small populations which lead to changes in gene frequencies from generation to generation. The tendency, within small interbreeding populations, for heterozygous gene pairs to become homozygous for one allele or the other by chance rather than by selection. A change in gene frequency that occurs in small populations as a result of random sampling error during reproduction. The fluctuation in gene frequency occurring in an isolated population, presumably due to random variations from generation to generation.

**Genetic Engineering** - The use of in vitro techniques to produce DNA molecules containing novel combinations of genes or other sequences in living cells that make them capable of producing new substances or performing new functions. Usage: A popular term for such technologies as a whole.

**Genetic Erosion** - The loss of genetic diversity between and within populations of the same species over time; or a reduction of the genetic base of a species due to human intervention, environmental changes, etc.

**Genetic Flow** - The exchange of genes between different populations. Also termed migration, it is considered to be a source of genetic variation. A single introduction of genes into a new population is known as gene exchange. If gene migration is constant and recurrent it is known as gene flow. The closer populations are related spatially and genetically, the more likely the chances of gene flow.

**Genetic Pool** - The totality of genes and gene complexes of a given population at a given time. The sum of all genetic information carried by all individuals of an interbreeding population. All of the alleles of all the genes in a population.

**Genetic Shift** - A change in the germplasm balance of a crosspollinated variety, usually caused by environmental selection pressures.

**Genetic Vulnerability** - Having a narrow range of genetic diversity and reacting uniformly to diverse external conditions. (Applied to breeding populations of varieties or species).

**Genotype** - The genetic constitution of an individual or group of plants. Individual plants may vary in appearance (phenotypically), but they must have the genetic characteristics of the genotype.. The genetic constitution, latent or expressed, of an organism, as contrasted with the phenotype. The sum total of all genes present in an individual..

**Geographic Range** - Geographic limits of the ecological range; geographic extent of actual occurrences of a species.

**Germination** - The initiation of growth by the embryo and development of a young plant from seed.

**Germplasm** – Genetic material that determines the morphological and physiological characteristics of a species.

**Grex** - A collective term applies to the progeny of an artificial cross from known parents; each and every crossing of any two parents belonging to different taxa that bear the same pair of specific, intraspecific, interspecific, grex, or cultivar epithets.

**Green Manure Crop** – A crop that is plowed under while still living to increase organic matter in soil.

**Growing Season** - (1) The period, number of days, or both between the last frost in spring and the first freeze threshold temperature of the crop or other designated temperature threshold. (2) The amount of time a plant is able to actively grow.

**Habitat Type** - The collective area which one plant association occupies or will come to occupy as succession advances. The habitat type is defined and described on the basis of the vegetation and its associated environment.

**Hard Seed** - Seeds that remain hard at the end of a prescribed germination test because they have not absorbed water due to an impermeable seed coat.

**Herbaceous**