**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** - A vascular plant that does not develop woody tissue.

**Heritability** - The proportion of observed variability due to heredity; the remainder is due to environmental causes.

**Heterosis** - Hybrid vigor such that the F1 hybrid falls outside the range of the parents with respect to some character or characters.

**Heterozygous** - Having unlike alleles at one or more corresponding loci (such as Yy).

**Historic Climax Plant Community** - The original natural plant community that represents the final or highest stable level in a successional series that is in dynamic equilibrium with ecosystem components - soils, vegetation, climate, etc. The assumed end point in primary as well as secondary succession. Synonym-Climax Plant Community. See Climax.

**Homozygous** - Having alike alleles (such as YY). An organism may be described as homozygous at one, several or all loci.

**Horticultural Annual** - A biennial or perennial which may treated as an annual in parts of the country where the usually persistent plant parts do not survive more than one growing season.

**Hybrid** - offspring of a cross between genetically dissimilar individuals. First-generation progeny resulting from the controlled cross-fertilization between individuals that differ in one or more genes.

**Increase Plantings** –P production of seed or other reproductive parts of plant material to be made available for use in evaluations, field plantings, demonstration plantings, educational plantings or for distribution. See also “initial increase”.

**Indicator Species** - (1) Species that indicate the presence of certain environmental conditions, range condition, previous treatment, or soil type. (2) One or more plant species selected to indicate a certain level of grazing use.

**Indigenous** - Born, growing, or produced naturally (native) in a specified area, region, or country.

**Initial Evaluation** - The evaluation of the characteristics and comparative performance of an assembly of plants under controlled conditions so that promising plants can be selected for further evaluation.

**Initial Increase** - The production of small quantities of seed or other reproductive parts of materials selected from initial or advanced evaluations to be used for further evaluation and exchange.

**Inter-Center Strain Trial (ICST)** - Controlled, repeatable evaluations where scientific methods and experimental designs are used to study plants and techniques. Used to determine state and regional plant performance and adaptation.

**Interseeding** - Seeding into an established vegetation cover. Often involves planting seeds into the center of narrow seedbed strips, commonly of variable spacing prepared by mechanical or chemical methods..

**Introduced** - A species not part of the original fauna or flora of the area in question, but introduced from another geographical region through human activity. Syn.: exotic. Introduced is not synonymous and should not be confused with the term “invasive species”.

**Invader** - (1) Plants not a part of the original plant community that invade an area due to disturbance and/or plant community deterioration. (2) Plant species that were absent in undisturbed portions of the original vegetation of a specific range site and will invade or increase following disturbance or continued heavy grazing.

**Invasion** - The migration of organisms from one area to another area and their establishment in the latter.

**Invasive Plants** – plants that reproduce rapidly and spread aggressively from the area in which they originally occurred or were planted, posing a threat to natural area diversity or managed / agricultural area productivity. See also “Invasive Species”.

**Invasive Species** - A species that demonstrates rapid growth and spread, invades habitats, and displaces other species. Species that are prolific seed producers, have high seed germination rates, easily propagated asexually by root or stem fragments, and/or rapidly mature predispose a plant to being an invasive. Example: The hybrid cattail (*Typha* x*glauca*), a cross between native cattails, is extremely aggressive and out-competes its parents and other native species when established. Introduced species that are predisposed to invasiveness have the added advantage of being relatively free from predators (herbivores, parasites, and disease) and can therefore, expand more energy for growth and reproduction. Example: Nepal (*Microstegium vimineum*), introduced from Asia, displaces native vegetation in floodplains and other moist environments creating a monoculture in the herbaceous layer. *Microstegium* now occurs in 21 states and Puerto Rico, ranging from Texas to Florida in the south and north into New York State and Illinois. Invasive species should not be confused with “Introduced Species”.

**Kind** - One or more related species or subspecies that singly or collectively is known by one common name; for example, wheat, vetch and sweetclover.

**Limited Generations** - A restriction placed by the developer on the number of generations through which a variety may be sold by variety name.

**Line** - A group of individuals of common ancestry. Genetically, a more narrowly defined group than a strain or a variety.

**Liner -** Plant material which is grown in one location and then “lined-out” in another location for finishing off. Plants may be started in seedbeds and lifted bare-root or grown in containers. Either type of these liners may be finish their production cycle in the ground or in containers.

**Linkage** - Association of genetic factors; the genes are in the same chromosome.

**Local Native** - A genetically local source that originated at or within the same seed zone and elevation band as the project site (planned planting). See also “range site” and “woodland site”.

**Local Population** - Group of individuals of the same species growing near enough to each other to interbreed and exchange genes.

**Long Range Plan** -A plan which directs plant materials activities of the PMC or within a state or the PMC service area.

**Major Land Resource Areas (MLRA)** – A system of land classification composed of geographically associated land resource units; MLRAs are important in agricultural and other types of regional planning. Land resource units are geographic areas, usually several thousand acres in extent, that are characterized by a particular pattern of soils, climate, water resources, and land uses.

**Management Site Potential** - The kinds of levels of productivity or values of a range site that can be achieved under various management prescriptions.

**Mass Selection** - Selection of individual plants and propagation of the next generation from the aggregates of that seed.

**Memorandum of Understanding** - A written instrument evidencing the intent of two or more parties to cooperate in carrying out an undertaking that will result in mutual benefit to the parties concerned. Each party works within its own sphere of work and authority. It is not a fiscal document used as a basis for obligating funds. It may run for an indefinite time or be limited.

**Miscible Liquids** - Two or more liquids capable of being mixed; they will remain mixed under normal conditions.

**Mixture** - More than one kind of seed or variety; each is present in excess of 3 percent of the whole.

**Monoecious** - Staminate and pistillate flowers borne separately on the same plant.

**Morphology** - A branch of biology dealing with the form and structure of organisms.

**Native Grazing Land -** Land used primarily for production of native forage plants maintained or manipulated primarily through grazing management. Native grazing land includes grazed rangeland, grazed forestland, and native and naturalized pasture, individually or collectively.

**Native Plant** - See “native species”.

**Native Species** - A native plant species is one that occurs naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions. Its presence and evolution in an area are determined by climate, soil, and biotic factors. Synonyms of native include indigenous, endemic, aboriginal.

**Natural Potential** - Occasionally used as synonym for climax with reference to range vegetation.

**Naturalized Plant** - A plant introduced from other areas that has become established in and more or less adapted to a region by long, continued growth. See also “naturalized species”.

**Naturalized Species** - A species introduced from other areas that has become established in and more or less adapted to a region by long, continued growth there. Does not require artificial inputs for survival and reproduction, and has established a stable or expanding population. Examples: cheatgrass, Kentucky bluegrass, starling, etc.

**Nonselective Herbicide** - A chemical that is toxic to plants, generally without regard to species.

**Noxious Weed** - A weed arbitrarily defined by law as being especially undesirable, troublesome, and difficult to control. Definition varies according to legal interpretations.

**Nurse Crop** - See “companion crop”.

**Off-center Evaluations** - Plantings used by PMCs to evaluate releases or technology off the center; data is collected and analyzed statistically; was previously named “field evaluation planting.”

**On-center Evaluations** - Plantings done on the PMC to evaluate new technology or new plant selections; data is collected and analyzed statistically.

**Open Pollination** - Natural, as opposed to controlled, pollination. Open pollinated seed contrasts with hybrid seed.

**Perennial** - A plant that lives more than 2 years.

**Performance Trial** –A planting designed to test a potential plant release for reliability in a particular conservation application. May require multiple plantings and/or off-center sites. Standards for comparison are to be included if available.

**Phenology** - A branch of science dealing with the relationship between climate and periodic biological phenomena. Also dates or sequence of occurrence of different growth stages of plants.

**Phenotype** - (1) The external appearance or discernible characteristics of an organism, resulting from interaction between an organism's genetic makeup (genotype) and the environment. A group of individual plants may appear alike (phenotypically) but not have the same genotype, or they may vary in appearance and have the same genotype. (2) Observable characteristics.

**Photosynthesis** - The metabolic pathway by which plants produce food. See also “C-3 plants”, “C-4 plants”, and “CAM plants”.

**Pioneer Species** - The first species or community to colonize or recolonize a barren or disturbed area in primary or secondary succession.

**Plan of Operations (PO)** - see 'Business Plan'

**Plant Association** - A kind of climax plant community consisting of stands with essentially the same dominant species in corresponding layers.

**Plant Community Type** - Each of the existing plant communities that can occupy an ecological site. Several plant community types will typically be found on an ecological site, including the historic climax plant community for that site.

**Plant Variety Protection Act (PVPA)** - Approved December 23, 1970, the PVPA offers legal protection to developers of new releases or varieties of plants that reproduce sexually, that is, through seed. Developers of plants that reproduce asexually have received protection from the U.S. Patent Office since 1930. The law states that protection will be extended to a “novel variety" if it has these three qualifications: Distinctness - The variety must differ from all known prior varieties by one or more identifiable morphological, physiological, or other characteristic; Uniformity - If any variations exist in the variety, they must be describable, predictable, and commercially acceptable; and Stability - When sexually reproduced, the variety must remain unchanged in its essential and distinctive characteristics to a degree expected of similarly developed varieties.

**Polycross** - Open-pollination of a group of genotypes (generally selected) in isolation from other compatible genotypes in such a way that each of the original selections has an equal opportunity at pollinating, or being pollinated by, any of the others.

**Population** - (1) The aggregate of organisms which inhabit a particular area or region; (2) a (specified) portion of such an aggregate, usually a group of organisms of the same kind occupying an area small enough to allow interbreeding.

**Population Genetics** - A branch of genetics dealing with the frequency and distribution of genes, mutants, genotypes, etc. among populations of organisms. Population genetics is now based upon an increasing input of laboratory and field observations under an array of environments; much of this work involves the documentation and interpretation of genetic variability in natural populations.

**Post-Emergence** - After the emergence of a specified weed or crop.

**Potential Natural Community** - The biotic community that would become established on an ecological site if all successional sequences were completed without interferences by man under the present environmental conditions. Natural disturbances are inherent in its development.

**Pre-Emergence** - Before the emergence of a specified weed or crop.

**Pre-Planting** - Any time before the crop is planted.

**Pristine** - A state of ecological stability or condition existing in the absence of direct disturbances by modern man. See also “relict”.

**Project** - A national PM activity that is broad in nature and serves as an umbrella for PMC studies. Refer to Part 540.51 of the NPMM for more information on PM projects.

**Project Statement** - A document that outlines the details of a National PM Project. Refer to Part 540.51 of the NPMM for more information on PM project statements.

**Pure Line** - Succession of generations of organisms homozygous for all genes.

**Pure Live Seed (PLS)** - The product of the percentage of germination plus the hard seed and the percentage of pure seed divided by 100.

**Purity** - (1) The name or names of the kind, type, or varieties and the percentage or percentages thereof. (2) The percentage of other agricultural seed or crop seed; the percentage of inert matters. (3) The percentage of weed seed, including noxious weed seed, and the names of the noxious weed seed and the rate of occurrence of each.

**Race** - A term sometimes used to denote ecotypes.

**Range Condition** - A generic term relating to present status of a unit of range in terms of specific values or potentials. Specific values or potentials must be stated. Some agencies define range condition as follows: the present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site.

**Range Condition Class** - Confusion has existed regarding both definition and use of this term. The following definition fits the thinking expressed in the definition Range Condition: one of a series of arbitrary categories used to either classify ecological status of a specific range site in relation to its potential (early, mid, late, or potential natural community) or classify management-oriented value categories for specific potentials, e.g., good condition spring cattle range.

**Range Degradation** - The degeneration of a site caused by biotic or abiotic factors which results in a lowered successional status to the point that ecological potential is changed. See also “Range Site Degeneration”.

**Range Retrogression** - The degradation of a site caused by biotic or abiotic factors which results in movement of the site to a lower successional status within the same ecological potential.

**Range Seeding** - The process of establishing vegetation by the artificial dissemination of seed. Establishing adapted plant species on ranges by means other than natural revegetation. See also “Reseeding”.

**Range Site** - An area of rangeland having the potential to produce distinctive kinds and amounts of vegetation, resulting in a characteristic plant community under its particular combination of environmental factors, especially soils and climate. Each range site is typified by an association of species that differ from that of other range sites in the kind or proportions of species, or in total production. Synonymous with ecological site when referring to rangeland. Some agencies use range site based on the climax concept, not potential natural community. Syn.: Ecological Site.

**Range Site Degeneration** - The degradation of a site caused by biotic or abiotic factors which results in an ecological shift to a lower successional status and possibly a lower ecological potential for production. Syn.: retrogression. See also “range degradation”.

**Reciprocal Cross** - A second cross involving the same characters as the first but with the sex of the parents interchanged.

**Reclamation** - Restoration of a site or resource to a desired condition to achieve management objectives or stated goals. The construction of plant, soil, and topographic conditions, after disturbance, which permits the disturbed site to function adequately within its ecosystem. However, the constructed conditions may not be identical to predisturbance conditions. The process of reconverting disturbed lands to their former uses or other productive uses.

**Recovery** - The rate or amount of regrowth following harvesting of a forage species or following a dormant season.

**Recurrent Selection** - A method of breeding designed to concentrate favorable genes scattered among a number of individuals by selecting in each generation among the progeny produced by intermating of the selected individuals of the previous generation.

**Registered Seed** - The progeny of foundation seed that is so handled as to maintain satisfactory genetic identity and purity and that has been approved and certified by the certifying agency. This class of seed should be of a quality suitable for production of certified seed. See also “seed certification classes”.

**Registered Variety** - (1) For grasses and agricultural species: A variety accepted, numbered, and registered as a recognized improved variety by the Committee on Varietal Standardization and Registration of the Crop Science Society of America. (2) For other species: A variety which has been registered with the appropriate International Species Registrar.

**Rehabilitation** - Return of land to a form and productivity that conforms with a prior land use plan, including a stable ecological state that does not contribute substantially to environmental deterioration and is consistent with surrounding aesthetic values. Improving a project site to a more desired condition than previously existed, usually as result of a major disturbance. Synonymous with reclamation.

**Released Variety** - A new variety of proved value that is made available to the public, according to ESCOP standards, for a conservation purpose. See also “variety”.

**Relict** - A remnant or fragment of the climax plant community that remains from a former period when it was more widely distributed. See also “pristine”.

**Reseeding** - A crop variety or inbred line that has been evaluated and made available to the public. To make available to the public. To seed again, usually soon after an initial seeding has failed to achieve satisfactory turf establishment.

**Restoration** - The process of restoring site conditions as they were before land disturbance.

**Revegetation** - Establishing or re-establishing desirable plants in areas where desirable plants are absent or of inadequate density, by management alone (natural revegetation) or by seeding or transplanting (artificial revegetation). A general term for renewing the vegetation on a project site, which include restoration and rehabilitation. Refers to the vegetation construction phase of reclamation.

**Riparian Community Type** - A recurring, classified, defined and recognizable assemblage of riparian plant species. A repeating, classified, defined and recognizable assemblage of riparian plant species.

**Riparian Ecosystems** - (1) Those assemblages of plants, animals, and aquatic communities whose presence can be either directly or indirectly attributed to factors that are waterinfluenced or related. (2) Interacting system between aquatic and terrestrial situations, identified by soil characteristics, and distinctive vegetation that requires or tolerates free or unbound water.

**Riparian Species** - Plant species occurring within the riparian zone. Obligate species require the environmental conditions within the riparian zone; facultative species tolerate the environmental conditions, therefore may also occur away from the riparian zone.

**Seed Certification** - A system whereby seed of plant cultivars (and pre-varietal releases) is produced, harvested and marketed under authorized regulation to insure seed of high quality and genetic purity.

**Seed Certification Classes -** Classes of seed produced by a grower to ensure the purity of the genetic material. Seed which undergoes the certification process is typically inspected during the growing season or at harvest and the seed is tested. Certification classes include: Breeder, Foundation, Registered, Certified, and Common. See also “breeder seed”, foundation seed”, “registered seed”, “certified seed”, and “common seed”.

**Seed Certifying Agency** - General term for the state or other agency responsible for the release and certification of crop varieties and for inspecting and approving seed produced under one of the seed certification classes. Most seed certification agencies are members of the Association of Official Seed Certifying Agencies (AOSCA).

**Seed Lot** - A definite quantity of seed identified by a lot number, every portion or bag of which is uniform, within permitted tolerances, for the factors that appear on the labeling.

**Selected Class Release** - (1) Seed that is the progeny of rigidly selected seed or stands of untested parentage that have promise but not proof of genetic superiority, and for whichgeographic source and elevation shall be stated on the certification label. (2) One of the classes of pre-varietal releases recognized by AOSCA.

**Selection** - Selecting an accession or accessions from an assembly, or individuals from within an accession, to obtain the plants having the best characteristics for a particular conservation use.

**Selective Herbicide** - A chemical that is more toxic to some plant species than to others.

**Self Pollination -** The transfer of pollen from the anther of a flower to the stigma of the same flower, or different flowers on the same plant.

**Seral** - Refers to species or communities that are eventually replaced by other species or communities within a sere.

**Seral Community** - One of a series of biotic communities that follow one another in time on any given area. Syn. successional community.

**Seral Stages** - The developmental stages of an ecological succession.

**Sere** - All temporary communities in a successional sequence. The complete series of ecological communities occupying a given area over hundreds or thousands of years from the initial to the final or climax stage.

**Sod Seeding** - Direct drilling of seed into sod of existing vegetation with no mechanical seedbed preparation.

**Soil Application** - Chemical applied mainly to the soil surface rather than to vegetation.

**Soil Incorporation** - Mechanical mixing of a chemical with the soil.

**Soil Injection** - Mechanical placement of a chemical beneath the soil surface with a minimum of mixing or stirring.

**Soil Sterilant** - A biocide that prevents the growth of plants and kills all living organisms when present in the soil. Soil sterilization effects may be temporary or permanent.

**Source-Identified Seed -** (1) Source identified propagating materials are seed, seedlings, or other propagating materials collected from natural stands, seed production areas, seed fields, or orchards where no selection or testing of the parent population has been made. (2) One of the classes of pre-varietal releases recognized by AOSCA.

**Stand** - (1) A population of plants. (2) Density of population or number of individuals per unit area.

**Standard Plant** - (1) A commonly used species or, if available, variety for the use of which an evaluation is being made. (2) A plant which serves as the standard for comparison.

**Strain** - (1) A group of organisms of common origin having one or more definite morphological or physiological characteristics that are heritable. (2) A term to include breed differences within a species, or as a group of plants differing little, if any, in morphology yet physiologically distinct in some additional quality such as yield or vigor: i.e., the northern and southern strains of smooth brome. Strain also means variety, ecotype, biotype, type, or a group of these.

**Study** - An activity at a PMC that develops a product to address a conservation need identified in the PMC LRP. A PMC study must be outlined in a study plan and be identified in the PMC Business Plan and Workload Analysis. Refer to Part 540.52 of the NPMM for more information on PMC studies.

**Study Plan** - A comprehensive document that outlines the details of a PMC study. Refer to Part 540.52 of the NPMM for more information on PMC study plans.

**Subspecies -** A grouping within a species used to describe geographically isolated variants, a category above “variety”, and is indicated by the abbreviation “ssp.” in the scientific name.

**Succession** - (1) The progressive replacement of plant communities on a site which leads to the potential natural plant community, i.e., attaining stability. Primary succession entails simultaneous successions of soil from parent material and vegetation. Secondary succession occurs following disturbances on sites that previously supported vegetation, and entails plant succession on a more mature soil. (2) The progressive development of vegetation toward its highest ecological expression, the climax replacement of one plant community by another.

**Surfactant** - A material that facilitates and accentuates the emulsifying, dispersing, spreading, wetting, and other surface-modifying properties of herbicide formulation.

**Suspension** - A system consisting of very finely divided solid particles dispersed in a solid, liquid, or gas.

**Synergism** - Cooperative action of different chemicals or organisms such that the total effect is greater than the sum of the independent effects.

**Synthetic Variety** - Advanced generation progenies of a number of clones or lines (or of hybrids among them) obtained by open-pollination.

**Testcross** - A cross of a double or multiple heterozygote to the corresponding multiple recessive to test for homozygosity or linkage.

**Tested Seed -** (1) Seeds or plants which have been through additional testing on more than one generation which will include testing on multiple sites with replicated plots to verify performance and heritability of desirable traits. The material has proven genetic superiority or possesses distinctive traits for which heritability is stable as defined by the certifying agency. (2) One of the classes of pre-varietal releases recognized by AOSCA.

**Tetraploid** - An organism having four basic sets of chromosomes.

**Topcross Progeny** - Progeny from outcrossed seed of selections, clones or lines crossed with a single variety or line that serves as a common pollen parent.

**Translocated Herbicide** - An herbicide that is distributed throughout the plant from the point of entry. Syn. Systemic herbicide.

**Trend** - The direction of change in ecological status or resource value rating observed over time. Trend in ecological status should be described as toward, or away from the potential natural community, or as not apparent. Trend in a resource value rating for a specific use should be described as up, down or not apparent. Trends in resource value ratings for several uses on the same site at a given time may be in different directions, and there is no necessary correlation between trends in resource value ratings and trend in ecological status. Some agencies use trend only in the context of ecological status. Syn. range condition trend. See and “apparent trend”.

**Type** - A group of varieties so nearly similar that the individual varieties cannot be clearly differentiated except under special conditions. For further information, refer to the Federal Seed Act Rules and Regulations.

**Use Groups** - The artificial grouping for the comparative testing of plant materials having similar uses.

**Variety** - (1a) The botanical nomenclature division consisting of more or less recognizable entities within species that are not genetically isolated from each other, below the level of subspecies, and is indicated by the abbreviation “var.” in the scientific name (see “botanical variety”); (1b) The rank of taxa below subspecies but above forma; a plant which retains most of the characteristics of the species, but differs in some way such as flower or leaf color, size of mature plant, etc. A variety is added to the specific binomial and preceded by "var.", such as *saxatilis* in the epithet *Juniperus communis* var. *saxatilis*. (2) Term used in some national and international legislation to denominate one clearly distinguishable taxon from another; equivalent to “cultivar”. (Note: the Plant Materials Program does not recognize the terms “variety” and “cultivar” as equivalent.)

**Vegetation Type** - A kind of existing plant community with distinguishable characteristics described in terms of the present vegetation that dominates the aspect or physiognomy of the area. Syn. Type.

**Warm-Season Plant** - A plant that completes most of its growth during the warm part of the year, generally late in spring and in summer. Commonly a C-4 plant photosynthetic pathway.

**Wetland Communities** - Plant communities that occur on sites with soils typically saturated with or covered with water most of the growing season.