Choosing the Plant Palette for Revegetation
by Leah Gardner

“Plant palette” is a landscaping term to describe the list of species that will be included in a planting plan. While we may think of an artist when we think of a palette, it is important to realize that there is a science, as well as an art, to choosing the best species for a project.

**Baseline studies**
A complete species list should be compiled for the entire site by a trained botanist. If the site is already highly disturbed, it may be necessary to gather this information from a nearby reference site. The botanist will need to survey for sensitive species to satisfy CEQA, but every single species should be noted on this inclusive floristic list. If more than one habitat type occurs, plants should be listed separately or given codes to designate which type they occur in. This list will not only serve as the basis for species selection; it will also alert land managers to noxious weeds present that will need to be managed. Other baseline information taken during this plant survey should include the cover, density, and species richness values from which revegetation performance standards can be developed.

**The species selection process**
First, the complete list of species for the site should be broken into categories or given codes to designate characteristics of each plant. The first break out should be of native versus exotic plants. Next, plants should be noted as to whether they are annual or perennial (annuals only last one year while perennials come back year after year) and what their growth form type is (grass, herb, shrub, or tree).

Different types of plants will have differing rooting strategies. Some other qualities to look for are whether the plant is a nitrogen-fixer and how well a plant volunteers and grows without much care (what we refer to as early successional, pioneer plants, or “good colonizers”). By diversifying the species selection, the chances of success are greater, the diversity of the resulting site is higher, and the root systems of the selected species are less likely to complete.

Many other considerations can come into play and this is where the selection process becomes more of an art form. It helps to have a background in horticulture to know how easy a plant is to propagate, how well it naturally sets viable seed, how fast it grows, and how aesthetically pleasing it will be. There may be additional considerations such as planting to create visual barriers or to provide wildlife habitat for target species that will affect your plant selection and site design.

**General guidelines**
A large number of species should be used for your planting mixes, with the idea to “not put all your eggs in one basket.” If you are recreating more than one habitat type, separate lists and standards should be developed appropriate to each habitat. As a
guideline, a minimum of 30 percent of the native species from the list should be reintroduced to your site during revegetation and the minimum number should not go below 5. For example, if 30 natives grow on your site, your species list should include 10 of them. If only 7 native plants grow on your site, you should still include 5 of them. If there are other good species for revegetation that occur in your eco-region but are not specifically found on your site, they may be added to the list at the discretion of botanist, ecologist or other trained restoration professional such as a native plant nursery or seed company technician.

Include some grasses and some nitrogen-fixers. Grasses establish quickly from seed and their fibrous root systems hold the soil in place, combating erosion. Use mostly perennial grasses, but annuals, such as small fescue (*Vulpia microstachys*), can be included. Legumes such as clovers, lupines, and lotuses all add nitrogen to the soil.

Include some aesthetically pleasing plants. This is especially applicable if your site is visible from a road or if you want to create a more landscaped look at the entrance to your site. Many of our California natives make beautiful ornamental plants such as California poppy (*Eschscholzia californica*), California fuschia (*Epilobium canum*), California lilac (*Ceanothus*), Flannel bush (*Fremontedendron*), Redbud (*Cercis occidentalis*) and many others. Besides their visual appeal, blooming plants provide nectar for our native bees and butterflies.
Seek professional advice. Botanists, landscape architects, and native plant nurserymen have the depth of knowledge needed to achieve success with wildland revegetation. Seed companies that specialize in California natives for restoration projects also have the skills to help you develop appropriate seed mixes. Only these professionals know which species will do well from seed in your area and which will need to be grown out in a nursery setting and installed as container plants. Many of these contractors can even provide the seed collecting and plant propagation services for your mining operation.

Botanists here at OMR are also ready and willing to review your plant lists and give advice on the best species and rates/methods of application for your project. Our Special Publication 123: “Rehabilitation of Disturbed Lands in California” contains great reference materials. Appendix A: Species Commonly Used in Rehabilitation by Bioregion, is a compendium of plant information suitable for revegetation listed by bioregion (or eco-region). The plants are broken down by annual grass, perennial grass, annual herb, perennial herb, shrub, and tree. The publication can be downloaded as a PDF file from our website at http://www.consrv.ca.gov/OMR/reclamation/sp123.pdf We also plan to add a searchable plant database to our website in the near future.

Happy planting!