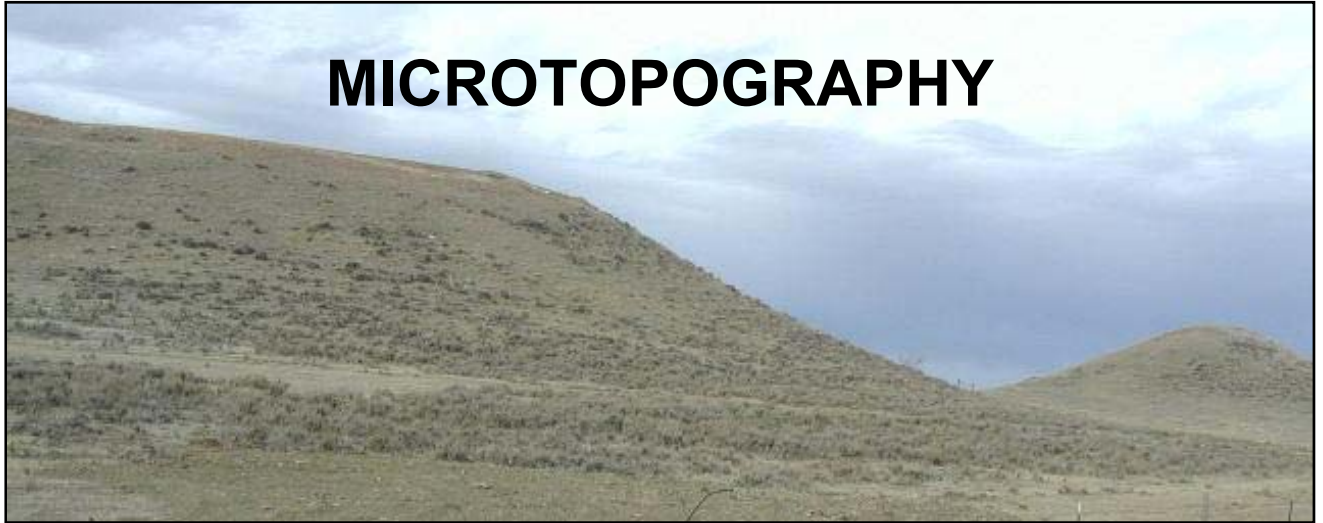


MICROTOPOGRAPHY



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Handbook of Western Reclamation Techniques

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Section 2: Microtopographic Construction

Applicability

Microtopographic construction creates specific landform features within the broader reclamation topography in order to provide and enhance topographic diversity and relief. Such finer landform features do not significantly alter the reclaimed topography, but add topographic relief to what otherwise could be a rather sterile landscape having uniform slopes and surfaces. Microtopographic features may be described as mounds, ridges, knobs, knolls, bowls, scarps, banks, rock piles, and rock outcrops, just to name a few.

Microtopographic features enhance the landscape of permanently reclaimed land and provide additional wildlife habitat and cover. Specific reclamation techniques such as use of site specific seed mixes and variable topsoil replacement depths can compliment microtopographic construction in promoting plant community diversity and desired species composition in the reclaimed environment.

Special Considerations

Microtopographic features should generally be configured and sized to accommodate topsoil replacement, and yet conform within accepted grade or contour tolerances of the reclaimed topography.

When incorporating microtopographic features into the overall reclaimed topography, local drainage conditions and patterns and the potential for erosion should be carefully considered. Site-specific erosion control measures may be necessary until vegetation is well established.

Techniques

Ideal construction would be to mimic native undisturbed landforms – those natural features that are erosionally stable and the result of centuries of wind and water erosion and climatic events. But economic considerations, equipment limitations, and unconsolidated soil conditions largely limit our capabilities to imitate Mother Nature's work.

With creativity and visualization, microtopographic features may be free-formed during final grading of rough topographic features. Or with advanced planning, construction of microtopography may occur concurrently with general grading or backfilling operations.

Strategic placement of truck loose dumps on level graded surfaces may be shaped into mounds, knolls, or ridges for permanent reclamation. In some instances, residual dumps or rough surfaces merely require some smoothing to provide topographic relief in upland or lowland locations.

Irregular topographic configurations present opportunities for construction of microtopographic features on slopes during final grading. With some amount of cut/fill earth movement, bowl shaped features and ridges can be created to enhance topographic relief on reclaimed slopes.

A most effective way to create or enhance microtopographic relief is the use of large rocks or boulders encountered during mining or other excavating activities. Placement of boulders on reclaimed land provides wildlife habitat and cover and effectively enhances the landscape of reclaimed land. The ways in which boulders may be placed or configured is limited only by the creative imagination.

Boulder placement along ridge crests, rock caps on knolls or mounds, in random rock piles, random singular placement, placement in linear windbreak configurations, rock outcrops on slopes, along

reconstructed stream banks, or within constructed reservoirs, are some of the possibilities. Construction of rock outcrops on final graded slopes is particularly effective in providing microtopographic diversity. Boulder features may be emplaced before or after topsoil replacement operations.

