

2d04: Fuel Group Consideration for Engine Resource Size-up

The Grass Group

Grass is found in most areas, but is more dominant in desert and range areas. It can become prevalent after a prescribed fire in forested areas.



- Grass has a moderate to high spread and low to moderate flame length.
- Grass reacts very quickly to water and additives.
- Grass doesn't require as much mop-up as the other three fuel groups.
- Grass has a short duration of heat and flame.
- Engine types 3-7 are most effective for grass fires in a direct mobile attack.

The Shrub Group

Shrubs are found throughout most geographical areas. Some dangerous shrub fuels are palmetto/gallberry in the Southeast, sagebrush in the Great Basin, and chaparral in the Southwest and West.



- Shrubs have a moderate to high rate of spread and moderate to high flame length.
- Shrubs reaction to water and additives is moderate to high depending on fireline intensity.
- Mop-up time is low to moderate with shrubs.
- Shrubs have a short duration of heat and flame.
- Engine types 3-7 are most effective with shrubs, especially with water tender support.
- A direct mobile attack is effective for shrubs depending on fireline intensity.

The Timber Litter Group

Timber litter is most dominant in mountainous topography, especially in the Northwest.



- Timber litter has a low to moderate rate of spread and low to high flame length.
- Water and additives effectively reduce the rate of spread.
- Timber litter usually requires more mop-up than the grass and shrub fuel groups. Mop-up time can be considerable with deep timber litter.
- Timber litter has a longer duration of heat and flames than the grass and shrub groups, especially if the litter is deep.
- Engine types 3-7 are most effective for timber litter, especially with water tender support.
- Direct mobile attack with engines may be effective with timber litter depending on the fireline intensity and terrain. Indirect attack and burnout operations are also effective.

The Logging Slash Group

Logging slash is debris left after logging, pruning, thinning, or shrub cutting. It may include logs, chunks, bark, branches, stumps, and broken understory trees or shrubs.



- Logging slash has a low to high rate of spread and low to very high flame lengths.
- Water and additives may react slowest in this fuel group.
- Logging slash requires the most mop-up of the four fuel groups.
- Logging slash has a long duration of heat and flame.
- Engine types 3-7 are most effective for logging slash, especially with water tender support.
- Both indirect/direct attack can be effective for logging slash.
- Direct attack with engines is usually not possible because of fuel loading.