NC SMP Technote 2 – October 29th, 2008 – rev.01

Typical Total Available Fuel Loading for General Fuel Types

General Burning Limitations

In most, if not all, prescribed fire situations the available tons of fuel that will be consumed will be less than total tons of fuel present on the site. Soil moisture and other factors all have an effect on the fuel and will influence how much vegetation will be consumed by the fire.

The following are typical North Carolina fuel types and total fuel present on the site. The total fuel loading ranges are based on results of actual sample where consumption was measured.

A) Litter – Fire Behavior Fuels Models 8, 9, & 10

Pine Litter (FM 8 or 9) —over-story composed of loblolly, shortleaf, slash, or longleaf pine. Amount of litter will vary with the age of the stand, degree of crown closure, species and age of rough.

Loading Range	Total Available Tons/Acre
Low	3
Medium	6
High	12

Hardwood Litter (FM 8 or 9)—over-story usually composed of oak–hickory with a mixture of other hardwoods. Amount of litter will vary with the age of the stand, degree of crown closure, species, and age of rough.

Loading Range	Total Available Tons/Acre
Low	3
Medium	5
High	7

Pine/Hardwood Litter (FM 8, 9, or 10)—overstory composed of both pines and hardwoods. Amount of litter will vary with age of the stand, degree of crown closure, species and age of rough.

Loading Range	Total Available Tons/Acre
Low	4
Medium	6
High	8

B) Grass - Fire Behavior Fuels Models 1, 2, & 3

Short Grass (FM 1 or 2) – Wiregrass - usually associated with a longleaf pine–scrub oak over-story. Some forested areas that are fairly "open" will have a mixture of wiregrass and broom sedge.

Loading Range	Total Available Tons/Acre
Low	2
Medium	5
High	7

Tall Grass (FM 3) – Saw grass, marsh grass, broom sedge – grasses up to 3 feet tall. Light brush may be present but the primary carrier of fire is grass.

Loading Range	Total Available Tons/Acre
Low	3
Medium	6
High	8

C) Slash - Fire Behavior Fuels Models 11, 12, & 13

Slash Light (FM 10 or 11) – Partial cuts or thinning operations in hardwood and pines. Typical stands can include untreated light clear cuts that are normally burned and planted.

Loading Range	Total Available Tons/Acre
Low	5
Medium	10
High	20

Moderate Slash (FM 12) – The fuels are normally drum chopped prior to burning. The fuel is evenly distributed and the majority of the fuel will normally be consumed during burning.

Loading Range	Total Available Tons/Acre
Low	10
Medium	20
High	40

Heavy Slash (FM 13)– These fuels are large trees or heavy brush that cannot be drum chopped and are pushed down using a KG or V-blade prior to burning. Fire intensity and loading are dependent on length of drying time prior to ignition.

Loading Range	Total Available Tons/Acre
Low	30
Medium	40
High	60

D) Brush

Low Brush (FM 5) – brush up to 2 feet tall. Typical brush occurs on 1-3 year old cutovers and small brush on untended fields.

Loading Range	Total Available Tons/Acre
Low	4
Medium	7
High	10

Medium Brush (FM 7 or 6) – brush 2 to 4 feet tall. Examples are species of bays, galberry and wax myrtle. Low pocosins are also represented in this fuel type.

Loading Range	Total Available Tons/Acre
Low	6
Medium	8
High	15

High Brush (FM 4 or 7) – brush over 4 feet tall. Fuel types include the high pocosin, laurel "slicks", and species found in the Carolina bays.

Loading Range	Total Available Tons/Acre
Low	10
Medium	20
High	30

As research studies and surveys provide more accurate information concerning tonnage or fuel availability, these guidelines will be updated. There are several Photo series that assist one in assessing fuel tonnages. The Fuel Classification and Characterization System (FCCS) is a software tool available to estimate the total amount of fuel present on a site. The results from FCCS can then be used as input into the CONSUME model to estimate the amount of fuel that will be consumed based upon the fuel moisture. The First Order Fire Effects Model (FOFEM) is another software tool that provides estimates of fuel consumption.