

>>											
>> Name											
>> -----											
	Sexual	Shade	Fire	Seed	Disperal	Dist	Vegetative	Sprout	Age	Post-Fire	
	Longevity	Maturity	Tol.	Tol.	Effective	Maximum	Reprod	Prob	Min	Max	Regen
acerrubr	150	10	4	1	100	1000	0.5	10	140	none	
chamthyo	400	12	3	3	183	1000	0.5	5	100	resprout	
nyssylv	200	15	4	2	30	1000	0.75	0	100	none	
pinuechi	200	20	1	3	60	500	0.75	5	25	resprout	
pinurigi	200	5	1	4	60	250	0.75	5	60	resprout	
queralba	300	40	3	3	30	3000	0.5	5	40	resprout	
quercocc	120	20	2	1	30	500	0.5	5	75	resprout	
querfalc	150	25	3	2	30	500	0.75	5	25	resprout	
querprin	200	20	3	3	30	500	0.75	5	60	resprout	
quervelu	250	20	3	2	30	3000	0.4	5	25	resprout	
liqustyr	350	25	2	2	60	180	0.75	5	50	resprout	
sassalbi	150	10	2	2	30	3000	0.75	5	115	resprout	
querilic	50	5	1	1	30	500	0.75	5	50	resprout	
quermari	150	5	1	1	30	500	0.75	5	150	resprout	

LandisData "Century Succession"

Timestep 5

SeedingAlgorithm WardSeedDispersal

InitialCommunities "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/fhmem\_ic.txt"

InitialCommunitiesMap "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/fhmem\_ic100\_signed32.img"

ClimateFile "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/ClimateInputsA2.txt"

CalibrateMode no

SpinupMortalityFraction 0.002

WaterDecayFunction Linear <<Linear or Ratio

ANPPMapNames century/ag\_npp-{timestep}.gis  
ANPPMapFrequency 5  
ANEEMapNames century/nee-{timestep}.gis  
ANEEMapFrequency 5

AvailableLightBiomass

>> Available Relative Biomass

>> Light by Ecoregions

>> Class

>> -----

	uplow	upmed	uphigh	wetlow	wetmed	wethigh	plains
1	30%	30%	30%	30%	30%	30%	30%
2	35%	35%	35%	35%	35%	35%	35%
3	55%	55%	55%	55%	55%	55%	55%
4	80%	80%	80%	80%	80%	80%	85%
5	100%	100%	100%	100%	100%	100%	100%

LightEstablishmentTable

>> Spp Shade Probability

>> Class by Actual Shade

>> -----

	0	1	2	3	4	5
1	1.0	0.5	0.25	0.0	0.0	0.0
2	1.0	1.0	0.5	0.25	0.0	0.0
3	1.0	1.0	1.0	0.5	0.25	0.0
4	1.0	1.0	1.0	1.0	0.5	0.25
5	0.1	0.5	1.0	1.0	1.0	1.0

SpeciesParameters

>>Species Leaf Woody Mortality Curve Leaf

```

>> Long DecayR Shape Parameter Lignin%
>>-----
>> Species Funct N GDD GDD Min Max Leaf Epi- Leaf FRoot Wood CRoot Leaf FRoot
Wood CRoot Litt
>> ional Toler Min Max Jan Drought Long cormic Lign% Lign% Lign% Lign% CN CN
CN CN CN
>> Type ance Temp re-
>> 1=no3=very sprout
>> 4=Nfixer
acerrubr 1 N 1260 6600 -18 0.23 1.0 N 0.199 0.255 0.255 0.255 25 45 90 90 45
chamthyo 5 N 1940 3169 -30 0.35 4.0 N 0.199 0.2 0.35 0.35 37 50 380 170 42
liqustyr 1 N 2660 5993 -1 0.30 1.0 N 0.331 0.255 0.255 0.255 25 45 90 90 45
nyssylv 1 N 1910 6960 -2 0.301 1.0 N 0.172 0.255 0.255 0.255 25 45 90 90 45
pinuechi 2 N 2660 5076 -1 0.423 1.25 N 0.255 0.2 0.35 0.35 50 50 380 170 100
pinurigi 2 N 1940 3100 -7 0.307 1.25 Y 0.255 0.2 0.35 0.35 50 50 380 170 100
queralba 4 N 1200 5537 -14 0.33 1.0 N 0.367 0.23 0.23 0.23 24 48 500 333 55
quercocc 3 N 2037 4571 -7 0.286 1.0 N 0.262 0.23 0.23 0.23 24 48 500 333 55
quercalc 3 N 2660 5993 2 0.423 1.0 N 0.293 0.23 0.23 0.23 24 48 500 333 55
querilic 4 N 2660 5993 2 0.423 1.0 N 0.293 0.23 0.23 0.23 24 48 500 333 55
querprin 3 N 1910 4110 -7 0.285 1.0 N 0.251 0.23 0.23 0.23 24 48 500 333 55
quervelu 3 N 1500 5076 -14 0.3 1.0 N 0.293 0.23 0.23 0.23 24 48 500 333 55
quermari 3 N 2493 5537 -1 0.422 1.0 N 0.293 0.23 0.23 0.23 24 48 500 333 55
sassalbi 1 N 1910 6960 -2 0.30 1.0 N 0.336 0.255 0.255 0.255 25 45 90 90 55

```

#### FunctionalGroupParameters

```

>> Name Index PPDF1 PPDF2 PPDF3 PPDF4 FCFRAC BTOLAI KLAI MAXLAI PPRPTS2 PPRPTS3
Wood Month Age Leaf
>> T-Mean T-Max T-shape T-shape leaf DecayR Wood Mort Drop
>> Mort Shape Month
HWOOD 1 22.0 40.0 0.75 10.0 0.5 0.01 3500 20 1.0 0.8 1.00 0.002 10 9
PINE 2 22.0 40.0 1.0 4.0 0.60 0.00823 1000 10 0.5 0.5 1.00 0.002 15 10
SOAKS 3 25.0 45.0 0.75 10.0 0.60 0.01 3000 20 0.5 0.5 1.00 0.002 10 10
NOAKS 4 22.0 40.0 0.75 10.0 0.60 0.007 4000 20 0.5 0.5 1.00 0.002 10 10
CEDAR 5 24.0 36.0 1.0 3.0 0.5 0.007 2500 15 0.5 0.8 1.00 0.002 10 9

```

#### InitialEcoregionParameters

```

>> SOM1 SOM1 SOM1 SOM1 SOM2 SOM2 SOM3 SOM3 Minrl
>> C N C N C N C N N
>> surf surf soil soil

```

```

uplow 76.65 2.56 76.65 7.98 3212 53.53 277.4 15.41 3.0
upmed 78.28 2.80 94.76 9.97 3625.6 75.53 313.12 18.42 3.0
uphigh 76 2.71 87.4 9.10 3344 66.88 296.4 17.44 3.0
wetlow 138.84 4.63 122.82 12.79 4592.4 85.04 453.9 22.70 3.0
wetmed 130.68 4.36 148.5 15.63 5108.4 121.63 540.54 30.03 3.0
wethigh 61.87 1.93 61.87 6.44 2367.2 44.66 209.82 10.49 3.0
plains 53.25 1.52 60.35 6.49 1988 47.33 142.0 35.50 3.0

```

#### EcoregionParameters

```

>> Soil Percent Percent Field Wilt StormF BaseF Drain Atmos Atmos Lat- Decay Decay Decay
Decay Denitrif
>> Depth Clay Sand Cap Point Fract Fract N N itude Rate Rate Rate Rate

```

```
>>  cm  frac  frac                                slope  inter    Surf  SOM1  SOM2  SOM3
uplow 100  0.045 0.894 0.104 0.035 0.4  0.1  0.75  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.2
upmed 100  0.102 0.76  0.143 0.066 0.4  0.1  0.75  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.2
uphigh 100 0.082 0.784 0.14  0.059 0.4  0.1  0.75  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.2
wetlow 100  0.048 0.889 0.118 0.043 0.35 0.07 0.5  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.4
wetmed 100  0.109 0.727 0.167 0.081 0.35 0.07 0.5  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.4
wethigh 100 0.042 0.895 0.128 0.053 0.35 0.07 0.5  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.4
plains 100  0.095 0.768 0.136 0.061 0.4  0.1  0.75  0.025 0.05  40.0  0.4  0.1  0.05  0.0001 0.2
```

#### FireReductionParameters

```
>>  Severity    Wood  Litter
>>  Fire        Reduct Reduct
    1          0.0  0.5
    2          0.05 0.75
    3          0.2  1.0
    4          0.5  1.0
    5          0.8  1.0
```

MonthlyMaxNPP <<PRDX(3) from Century 4.0 (g Biomass / m2)

>> Species Ecoregions

>> -----

	uplow	upmed	uphigh	wetlow	wetmed	wethigh	plains
acerrubr	225	225	225	125	125	125	55
chamthyo	90	90	90	90	90	90	55
liqustyr	225	225	225	125	125	125	55
nyssylv	225	225	225	125	125	125	55
pinuechi	90	90	90	90	90	90	55
pinurigi	90	90	90	90	90	90	55
queralba	250	250	250	140	140	140	55
quercocc	225	225	225	125	125	125	55
quercalc	225	225	225	125	125	125	55
querilic	225	225	225	125	125	125	55
quermari	225	225	225	125	125	125	55
querprin	250	250	250	125	125	125	55
quervelu	250	250	250	125	125	125	55
sassalbi	225	225	225	125	125	125	55

MaxBiomass << (g Biomass / m2)

>> Species Ecoregions

>> -----

	uplow	upmed	uphigh	wetlow	wetmed	wethigh	plains
acerrubr	10000	10000	10000	9500	9500	9500	5000
chamthyo	15000	15000	15000	20000	20000	20000	7000
liqustyr	8500	8500	8500	10000	10000	10000	4250
nyssylv	8500	8500	8500	9500	9500	9500	4250
pinuechi	10000	10000	10000	8000	8000	8000	5000
pinurigi	10000	10000	10000	8000	8000	8000	5000
queralba	10000	10000	10000	9500	9500	9500	5000
quercocc	10000	10000	10000	9000	9000	9000	5000

querfalc	10000	10000	10000	8500	8500	8500	5000
querilic	10000	10000	10000	9500	9500	9500	5000
quermari	10000	10000	10000	9500	9500	9500	5000
querprin	10000	10000	10000	9500	9500	9500	5000
quervelu	10000	10000	10000	9500	9500	9500	5000
sassalbi	7000	7000	7000	9500	9500	9500	3500

AgeOnlyDisturbances:BiomassParameters "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/age-only-disturbances.txt"

>>\*\*\*\*\*

ClimateChange

>>Year    Parameter File

>>-----

5	AGB_ClimateChange5.txt
10	AGB_ClimateChange10.txt
15	AGB_ClimateChange15.txt
20	AGB_ClimateChange20.txt
25	AGB_ClimateChange25.txt
30	AGB_ClimateChange30.txt
35	AGB_ClimateChange35.txt
40	AGB_ClimateChange40.txt
45	AGB_ClimateChange45.txt
50	AGB_ClimateChange50.txt
55	AGB_ClimateChange55.txt
60	AGB_ClimateChange60.txt
65	AGB_ClimateChange65.txt
70	AGB_ClimateChange70.txt
75	AGB_ClimateChange75.txt
80	AGB_ClimateChange80.txt
85	AGB_ClimateChange85.txt
90	AGB_ClimateChange90.txt
95	AGB_ClimateChange95.txt
100	AGB_ClimateChange100.txt

LandisData "Dynamic Fire System"

Timestep 5

>> EventSizeType size\_based <<or 'duration\_based'  
EventSizeType duration\_based <<or 'size\_based'

BuildUpIndex yes <<yes or no; Y or N

>>WeatherRandomizer 0 << optional (0-4)

>> Fire Sizes - Mu and Sigma are size based

>>EcoEco Mu Sigma MaxDur Spring Spring Spring Summer Summer Summer Fall Fall Fall  
DefaultOpen NumberOf  
>>Code Num ation FRCLow FMCHigh HiProp FRCLow FMCHigh HiProp FRCLow FMCHigh  
HiProp FuelTypeIndex Fires  
0 Inactive 1 1 1 120 103 0 120 100 0 120 120 0 6 0.0  
1 LowLow 37 113 1500 120 103 0.146 120 100 0.72 120 120 0.37 6 100.0  
2 LowMid 37 55 2500 120 103 0.161 120 100 0.54 120 120 0.67 6 30.0  
3 LowHigh 37 30 5000 120 103 0 120 100 0.45 120 120 1 6 14.0  
4 MidLow 37 150 1500 120 103 0.152 120 100 0.62 120 120 0.35 6 440.0  
5 MidMid 37 70 2500 120 103 0.163 120 100 0.58 120 120 0.39 6 90.0  
6 MidHigh 37 23 5000 120 103 0 120 100 0 120 120 1 6 15.0  
7 HighLow 37 124 1500 120 103 0.13 120 100 0.7 120 120 0.31 6 300.0  
8 HighMid 37 70 1500 120 103 0.159 120 100 0.66 120 120 0.28 6 125.0

InitialFireEcoregionsMap "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/fhmem\_fe100.gis"

DynamicEcoregionTable  
>>Year

GroundSlopeFile "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/fhmem\_slp100.gis"

UphillSlopeAzimuthMap "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/fhmem\_upaz100.gis"

SeasonTable  
>>Name Leaf Proportion Percent Daylength  
>> Status Fire Curing Proportion  
>> -----  
Spring LeafOff 0.59 0 1.0  
Summer LeafOn 0.3 50 1.0  
Fall LeafOff 0.11 100 1.0

InitialWeatherDatabase "I:/research/samba/scheller\_lab/Lucash/Century-version-3/FHEM\_input\_files/ClimateChange\_Fire/hadcm3\_a2\_2000-2004.csv"

DynamicWeatherTable

```

5  "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2005-2009.csv"
10 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2010-2014.csv"
15 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2015-2019.csv"
20 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2020-2024.csv"
25 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2025-2029.csv"
30 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2030-2034.csv"
35 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2035-2039.csv"
40 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2040-2044.csv"
45 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2045-2049.csv"
50 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2050-2054.csv"
55 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2055-2059.csv"
60 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2060-2064.csv"
65 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2065-2069.csv"
70 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2070-2074.csv"
75 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2075-2079.csv"
80 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2080-2084.csv"
85 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2085-2089.csv"
90 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2090-2094.csv"
95 "I:/research/samba/scheller_lab/Lucash/Century-version-
3/FHEM_input_files/ClimateChange_Fire/hadcm3_a2_2095-2099.csv"

```

#### FuelTypeTable

```

>> Num Base      Surface Ign  a    b    c    q    BUI    maxBE  CBH    Fuel Type
>>  Type          Type  Prob
1   Conifer      C3    0.25  89    0.0011 0.797 0.9    75    1.067  2    <<SH3
2   Deciduous    D1    0.25  89    0.00036 0.525 0.9    75    1.067  2    <<SH4
3   Conifer      C3    0.25  89    0.01797 0.993 0.9    75    1.067  2    <<SH6
4   Conifer      C3    0.25  37    0.10646 2.105 0.9    75    1.067  2    <<SH8
5   Conifer      C3    0.25  90    0.06671 1.554 0.9    75    1.067  1    <<SH9pine-plains
6   Open         O1b   0.25  89    0.00569 0.614 0.9    75    1.067  0    <<GR3
7   Deciduous    D1    0.25  14    0.12376 2.827 0.9    75    1.067  2    <<TL6
8   Deciduous    D1    0.25  89    0.00044 0.715 0.9    75    1.067  2    <<TL7
9   Conifer      C4    0.25  90    0.06671 1.554 0.9    75    1.067  1    <<SH9young-uplandscrub

```

SeverityCalibrationFactor 10.0

>>Cohort Age	FireSeverity-
>>% of longevity	FireTolerance
>> -----	
1%	-4
5%	-3
10%	-2
15%	-1
30%	0
60%	1
75%	2
95%	3
100%	4

MapNames fire-output/severity- {timestep}.gis

LogFile fire-output/log.csv

SummaryLogFile fire-output/summary-log.csv



LandisData "Dynamic Leaf Biomass Fuels"

Timestep 5

>> Fuel  
>> Species Coefficient  
>>-----  
pinurigi 0.85

>> Optional Percent Hardwood Value (%)  
HardwoodMaximum 5

DeadFirMaxAge 0

FuelTypes

>> Fuel Type	BaseFuel	AgeRange	Species					
>>-----								
1 Conifer 0 to 400	chamthyo	acerrubr	pinurigi	-queralba	-pinuechi			<<
Conifer Wetland - SH3								
2 Conifer 0 to 400	acerrubr	liqustyr	nysssyly	sassalbi	queralba	quercocc	-pinurigi	
<< Hardwood Wetland - SH4								
4 Conifer 15 to 400	pinurigi	pinuechi	quermari	querilic	-acerrubr			<< Pine
Upland - SH8								
7 Conifer 15 to 400	quercocc	querprin	quervelu	queralba	sassalbi			<< Oak
Upland - TL6								
3 Conifer 15 to 400	querprin	quercocc	pinurigi					<< Mixed Upland
- SH6								
5 Conifer 0 to 400	pinurigi	querilic	quermari	queralba	quercocc	quercocc	querprin	
<< Pine Plains - SH9								
8 Conifer 0 to 400	acerrubr	nysssyly	chamthyo					<< Mixed Wetland - TL7
9 Conifer 0 to 15	pinurigi	querilic	quermari	queralba	quercocc	quercocc	querprin	
pinuechi	quervelu	sassalbi	acerrubr	liqustyr				<< Young Upland Scrub - SH9

EcoregionTable << Optional Table

>> FuelType	Ecoregion	<< you can list multiple ecoregions
1	wetlow wetmed wethigh	
2	wetlow wetmed wethigh	
3	uplow upmed uphigh	
4	uplow upmed uphigh	
5	plains	
7	uplow upmed uphigh	
8	wetlow wetmed wethigh	
9	uplow upmed uphigh	

DisturbanceConversionTable

>> FuelType	Duration	Prescription (more than one allowed)
>>-----		

MapFileNames DFBS-output/FuelType- {timestep}.gis

PctConiferFileName DFBS-output/PctConifer- {timestep}.gis

PctDeadFirFileName DFBS-output/PctDeadFir- {timestep}.gis