**Layout of data layers within Threats Tool**

**HABITAT IS SUMMARIZED FOR 6 BIOFUEL PRODUCTION SCENARIOS – Default is Baseline (X)**

**Both area (hectares) and percent is represented. Use area when displaying individual data layers. Use percentage when calculating cumulative threats.**

tblLCScen\_**X**.txt Business as usual (Baseline)

tblLCScen\_**A**.txt Harvest of conventional pine & hardwood forest (Biomass)

tblLCScen\_**B**.txt Biomass & conversion of marginal agriculture to biofuels

tblLCScen\_**C**.txt Biomass & conversion of marginal ag & forest to biofuels

tblLCScen\_**D**.txt Baseline & conversion of marginal agriculture to biofuels

tblLCScen\_**E**.txt Baseline & conversion of marginal ag & forest to biofuels

**Decadal Data Sets**

**Category**

Data Layer Name Units table/variable (Scenario X example)

**Forest Habitat**

Forest Land Cover 2010 % forest w/in huc12 tblLCScen\_X\_pct.txt/frst10pct

Forest Land Cover 2020 % forest w/in huc12 tblLCScen\_X\_pct.txt/frst20pct

Forest Land Cover 2030 % forest w/in huc12 tblLCScen\_X\_pct.txt/frst30pct

Forest Land Cover 2040 % forest w/in huc12 tblLCScen\_X\_pct.txt/frst40pct

Forest Land Cover 2050 % forest w/in huc12 tblLCScen\_X\_pct.txt/frst50pct

Forest Land Cover 2010 ha forest w/in huc12 tblLCScen\_X\_ha.txt/frst10ha

Forest Land Cover 2020 ha forest w/in huc12 tblLCScen\_X\_ha.txt/frst20ha

Forest Land Cover 2030 ha forest w/in huc12 tblLCScen\_X\_ha.txt/frst30ha

Forest Land Cover 2040 ha forest w/in huc12 tblLCScen\_X\_ha.txt/frst40ha

Forest Land Cover 2050 ha forest w/in huc12 tblLCScen\_X\_ha.txt/frst50ha

**Wet Forest Habitat**

Wet Forest Land Cover 2010 % wet forest w/in huc12 tblLCScen\_X\_pct.txt/ftwt10pct

Wet Forest Land Cover 2020 % wet forest w/in huc12 tblLCScen\_X\_pct.txt/ftwt20pct

Wet Forest Land Cover 2030 % wet forest w/in huc12 tblLCScen\_X\_pct.txt/ftwt30pct

Wet Forest Land Cover 2040 % wet forest w/in huc12 tblLCScen\_X\_pct.txt/ftwt40pct

Wet Forest Land Cover 2050 % wet forest w/in huc12 tblLCScen\_X\_pct.txt/ftwt50pct

Wet Forest Land Cover 2010 ha wet forest w/in huc12 tblLCScen\_X\_ha.txt/ftwt10ha

Wet Forest Land Cover 2020 ha wet forest w/in huc12 tblLCScen\_X\_ha.txt/ftwt20ha

Wet Forest Land Cover 2030 ha wet forest w/in huc12 tblLCScen\_X\_ha.txt/ftwt30ha

Wet Forest Land Cover 2040 ha wet forest w/in huc12 tblLCScen\_X\_ha.txt/ftwt40ha

Wet Forest Land Cover 2050 ha wet forest w/in huc12 tblLCScen\_X\_ha.txt/ftwt50ha

**Wet Herbaceous Habitat**

Wet Herbaceous Land Cover 2010 % wet herbaceous w/in huc12 tblLCScen\_X\_pct.txt/hbwt10pct

Wet Herbaceous Land Cover 2020 % wet herbaceous w/in huc12 tblLCScen\_X\_pct.txt/hbwt20pct

Wet Herbaceous Land Cover 2030 % wet herbaceous w/in huc12 tblLCScen\_X\_pct.txt/hbwt30pct

Wet Herbaceous Land Cover 2040 % wet herbaceous w/in huc12 tblLCScen\_X\_pct.txt/hbwt40pct

Wet Herbaceous Land Cover 2050 % wet herbaceous w/in huc12 tblLCScen\_X\_pct.txt/hbwt50pct

Wet Herbaceous Land Cover 2010 ha wet herbaceous w/in huc12 tblLCScen\_X\_ha.txt/hbwt10ha

Wet Herbaceous Land Cover 2020 ha wet herbaceous w/in huc12 tblLCScen\_X\_ha.txt/hbwt20ha

Wet Herbaceous Land Cover 2030 ha wet herbaceous w/in huc12 tblLCScen\_X\_ha.txt/hbwt30ha

Wet Herbaceous Land Cover 2040 ha wet herbaceous w/in huc12 tblLCScen\_X\_ha.txt/hbwt40ha

Wet Herbaceous Land Cover 2050 ha wet herbaceous w/in huc12 tblLCScen\_X\_ha.txt/hbwt50ha

**Open Habitat**

Open Land Cover 2010 % open w/in huc12 tblLCScen\_X\_pct.txt/open10pct

Open Land Cover 2020 % open w/in huc12 tblLCScen\_X\_pct.txt/open20pct

Open Land Cover 2030 % open w/in huc12 tblLCScen\_X\_pct.txt/open30pct

Open Land Cover 2040 % open w/in huc12 tblLCScen\_X\_pct.txt/open40pct

Open Land Cover 2050 % open w/in huc12 tblLCScen\_X\_pct.txt/open50pct

Open Land Cover 2010 ha open w/in huc12 tblLCScen\_X\_ha.txt/open10ha

Open Land Cover 2020 ha open w/in huc12 tblLCScen\_X\_ha.txt/open20ha

Open Land Cover 2030 ha open w/in huc12 tblLCScen\_X\_ha.txt/open30ha

Open Land Cover 2040 ha open w/in huc12 tblLCScen\_X\_ha.txt/open40ha

Open Land Cover 2050 ha open w/in huc12 tblLCScen\_X\_ha.txt/open50ha

**Scrub/Shrub Habitat**

Scrub/Shrub Land Cover 2010 % scrub/shrub w/in huc12 tblLCScen\_X\_pct.txt/shrb10pct

Scrub/Shrub Land Cover 2020 % scrub/shrub w/in huc12 tblLCScen\_X\_pct.txt/shrb20pct

Scrub/Shrub Land Cover 2030 % scrub/shrub w/in huc12 tblLCScen\_X\_pct.txt/shrb30pct

Scrub/Shrub Land Cover 2040 % scrub/shrub w/in huc12 tblLCScen\_X\_pct.txt/shrb40pct

Scrub/Shrub Land Cover 2050 % scrub/shrub w/in huc12 tblLCScen\_X\_pct.txt/shrb50pct

Scrub/Shrub Land Cover 2010 ha scrub/shrub w/in huc12 tblLCScen\_X\_ha.txt/shrb10ha

Scrub/Shrub Land Cover 2020 ha scrub/shrub w/in huc12 tblLCScen\_X\_ha.txt/shrb20ha

Scrub/Shrub Land Cover 2030 ha scrub/shrub w/in huc12 tblLCScen\_X\_ha.txt/shrb30ha

Scrub/Shrub Land Cover 2040 ha scrub/shrub w/in huc12 tblLCScen\_X\_ha.txt/shrb40ha

Scrub/Shrub Land Cover 2050 ha scrub/shrub w/in huc12 tblLCScen\_X\_ha.txt/shrb50ha

**Urban Growth**

Urban Land Cover 2010 % urban w/in huc12 tblUrban\_pct.txt/urb10pct

Urban Land Cover 2020 % urban w/in huc12 tblUrban\_pct.txt/urb10pct

Urban Land Cover 2030 % urban w/in huc12 tblUrban\_pct.txt/urb10pct

Urban Land Cover 2040 % urban w/in huc12 tblUrban\_pct.txt/urb10pct

Urban Land Cover 2050 % urban w/in huc12 tblUrban\_pct.txt/urb10pct

Urban Land Cover 2010 ha urban w/in huc12 tblUrban\_ha.txt/urb10ha

Urban Land Cover 2020 ha urban w/in huc12 tblUrban\_ha.txt/urb20ha

Urban Land Cover 2030 ha urban w/in huc12 tblUrban\_ha.txt/urb30ha

Urban Land Cover 2040 ha urban w/in huc12 tblUrban\_ha.txt/urb40ha

Urban Land Cover 2050 ha urban w/in huc12 tblUrban\_ha.txt/urb50ha

**Fire Suppression**

Fire Suppression 2010 urban density w/in 5 mile radius tblUrban\_den.txt/urb10den

Fire Suppression 2020 urban density w/in 5 mile radius tblUrban\_den.txt/urb20den

Fire Suppression 2030 urban density w/in 5 mile radius tblUrban\_den.txt/urb30den

Fire Suppression 2040 urban density w/in 5 mile radius tblUrban\_den.txt/urb40den

Fire Suppression 2050 urban density w/in 5 mile radius tblUrban\_den.txt/urb50den

**Static Data Sets**

**Category**

Data Layer Name Units table/variable

**Nutrient Loading**

Manure Application kg/ha/yr tblEA\_Pol.txt/MANU

Synthetic Nitrogen Fertilizer Application kg/ha/yr tblEA\_Pol.txt/FERT

**Annual Atmospheric Deposition**

Total Nitrogen Deposition kg/ha tblEA\_Pol.txt/TD\_N\_T

Total Sulfur Deposition kg/ha tblEA\_Pol.txt/TD\_S\_T

**Hydrologic Alteration**

Number of dams n tblEA\_h2o.txt/TD\_N\_T

**Impaired Waters**

Impaired: All km tblEA\_h2o.txt/TotImpLen

Impaired: Biota km tblEA\_h2o.txt/BioImpLen

Impaired: Metals km tblEA\_h2o.txt/MetImpLen

Impaired: Nutrients km tblEA\_h2o.txt/NutImpLen

Impaired: Habitat km tblEA\_h2o.txt/HabImpLen

Impaired: Temperature km tblEA\_h2o.txt/TempImpLen

Impaired: Pollution km tblEA\_h2o.txt/PollImpLen

Impaired: Other km tblEA\_h2o.txt/OtherLen

Fish Consumption Advisory km tblEA\_h2o.txt/FishImpLen

Total Length km tblEA\_h2o.txt/TotalLength

Stream density km/HUC12 tblEA\_h2o.txt/StreamDens

Total number of NID points in HUC12 n tblEA\_h2o.txt/NID

Total Water Storage mil.gal. MGal

**Field Definitions**

**Land Cover**

6 Biofuel Production Scenarios

tblLCScen\_X Baseline Business as usual (Baseline)

tblLCScen\_A Biomass\_40pct Harvest of conventional pine & hardwood forest (Biomass)

tblLCScen\_B Biomass\_&\_Marg\_Ag Biomass & conversion of marginal agriculture to biofuels

tblLCScen\_C BmsM\_Ag\_M\_For Biomass & conversion of marginal ag & forest to biofuels

tblLCScen\_D Base\_&\_Marg\_Ag Baseline & conversion of marginal agriculture to biofuels

tblLCScen\_E Bs\_M\_Ag\_M\_For Baseline & conversion of marginal ag & forest to biofuels

5 Habitat Types

frst Forest

ftwt Wet Forest

hbwt Wet Herbaceous

open Open

shrb Shrub

5 Decadal Time Steps

10 2010

20 2020

30 2030

40 2040

50 2050

Each Scenario has two tables for hectare and percentage data.

**tblLCScen\_X\_ha.txt**

**tblLCScen\_A\_ha.txt**

**tblLCScen\_B\_ha.txt**

**tblLCScen\_C\_ha.txt**

**tblLCScen\_D\_ha.txt**

**tblLCScen\_E\_ha.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

frst10ha Forest Hectares at Year 2010

frst20ha Forest Hectares at Year 2020

frst30ha Forest Hectares at Year 2030

frst40ha Forest Hectares at Year 2040

frst50ha Forest Hectares at Year 2050

ftwt10ha Wet Forest Hectares at Year 2010

ftwt20ha Wet Forest Hectares at Year 2020

ftwt30ha Wet Forest Hectares at Year 2030

ftwt40ha Wet Forest Hectares at Year 2040

ftwt50ha Wet Forest Hectares at Year 2050

hbwt10ha Wet Herbaceous Hectares at Year 2010

hbwt20ha Wet Herbaceous Hectares at Year 2020

hbwt30ha Wet Herbaceous Hectares at Year 2030

hbwt40ha Wet Herbaceous Hectares at Year 2040

hbwt50ha Wet Herbaceous Hectares at Year 2050

open10ha Open Hectares at Year 2010

open20ha Open Hectares at Year 2020

open30ha Open Hectares at Year 2030

open40ha Open Hectares at Year 2040

open50ha Open Hectares at Year 2050

shrb10ha Shrub Hectares at Year 2010

shrb20ha Shrub Hectares at Year 2020

shrb30ha Shrub Hectares at Year 2030

shrb40ha Shrub Hectares at Year 2040

shrb50ha Shrub Hectares at Year 2050

**tblLCScen\_X\_pct.txt**

**tblLCScen\_A\_pct.txt**

**tblLCScen\_B\_pct.txt**

**tblLCScen\_C\_pct.txt**

**tblLCScen\_D\_pct.txt**

**tblLCScen\_E\_pct.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

frst10pct Forest Percentage at Year 2010

frst20pct Forest Percentage at Year 2020

frst30pct Forest Percentage at Year 2030

frst40pct Forest Percentage at Year 2040

frst50pct Forest Percentage at Year 2050

ftwt10pct Wet Forest Percentage at Year 2010

ftwt20pct Wet Forest Percentage at Year 2020

ftwt30pct Wet Forest Percentage at Year 2030

ftwt40pct Wet Forest Percentage at Year 2040

ftwt50pct Wet Forest Percentage at Year 2050

hbwt10pct Wet Herbaceous Percentage at Year 2010

hbwt20pct Wet Herbaceous Percentage at Year 2020

hbwt30pct Wet Herbaceous Percentage at Year 2030

hbwt40pct Wet Herbaceous Percentage at Year 2040

hbwt50pct Wet Herbaceous Percentage at Year 2050

open10pct Open Percentage at Year 2010

open20pct Open Percentage at Year 2020

open30pct Open Percentage at Year 2030

open40pct Open Percentage at Year 2040

open50pct Open Percentage at Year 2050

shrb10pct Shrub Percentage at Year 2010

shrb20pct Shrub Percentage at Year 2020

shrb30pct Shrub Percentage at Year 2030

shrb40pct Shrub Percentage at Year 2040

shrb50pct Shrub Percentage at Year 2050

**Urban Growth**

5 Decadal Time Steps

10 2010

20 2020

30 2030

40 2040

50 2050

Two tables for hectare and percentage data.

**tblUrban\_ha.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

urb10ha Urban Hectares at Year 2010

urb20ha Urban Hectares at Year 2020

urb30ha Urban Hectares at Year 2030

urb40ha Urban Hectares at Year 2040

urb50ha Urban Hectares at Year 2050

**tblUrban\_pct.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

urb10pct Urban Percentage at Year 2010

urb20pct Urban Percentage at Year 2020

urb30pct Urban Percentage at Year 2030

urb40pct Urban Percentage at Year 2040

urb50pct Urban Percentage at Year 2050

**Fire Suppression**

5 Decadal Time Steps

10 2010

20 2020

30 2030

40 2040

50 2050

Data represents mean density of urban cells within huc12. Higher values have higher suppression of fire.

**tblUrban\_den.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

urb10den Fire Suppression 2010

urb20den Fire Suppression 2020

urb30den Fire Suppression 2030

urb40den Fire Suppression 2040

urb50den Fire Suppression 2050

**EnviroAtlas Pollution**

1 Time Step

**tblEA\_Pol.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

BNF Natural biological nitrogen fixation (kg/ha/yr)

CBNF Cultivated biological nitrogen fixation (kg/ha/yr)

MANU Manure application (kg/ha/yr)

FERT Fertilizer application (kg/ha/yr)

TD\_N\_T Total nitrogen deposition (kg/ha/yr)

TD\_S\_T Total sulfur deposition (kg/ha/yr)

**EnviroAtlas Water Quality**

1 Time Step

**tblEA\_h2o.txt**

Field name Field definition

HUC\_12 Hydrologic Unit Code 12

BioImpLen Impaired Biota (km)

MetImpLen Impaired due to metal contaminant (km)

NutImpLen Impaired due to nutrient loading (km)

FishImpLen Fish consumption advisory (km)

HabImpLen Impaired habitat (km)

TempImpLen Impaired temperature (km)

PollImpLen Impaired due to pollution (km)

OtherLen Impaired for other causes (km)

TotImpLen Impaired for any reason (km)

TotalLength Total length (km)

StreamDens Stream density (km/HUC12)

NID Total number of NID points in HUC12

MGal Total Water Storage in HUC12 by Millions of Gallons