Implementing RHESSysFire on a RHESSys watershed

1. Add the fire.def to the defs directory // see example—note, these are not final default values
   1. User-specified wind speed and wind direction empirical distributions. From the historical weather stream fit mean log wind speed and Von Mises bimodal distribution for wind direction (will include R-scripts to accomplish these).
   2. User-specified threshold wind speed for maximum fire behavior
   3. User-specified ncols/nrows for the grids
2. Add auxdata directory if none, and add these files (absent headers):
   1. auxdata/patchGrid.txt // A 30-m grid ascii grid representation of the patch structure, where each pixel is -9999 if outside of the watershed boundaries, pixel ID otherwise.
   2. auxdata/DemGrid.txt//A 30-m grid DEM encompassing the entire grid area.
3. Modify files in the worldfiles directory
   1. In the header (hdr) file, between num\_stratum\_default\_files and num\_base\_stations add:

1 num\_fire\_default\_files

../defs/fire.def fire\_default\_file

* 1. In the worldfile, for each patch after landuse\_default\_ID add:

1.0 fire\_default\_ID

* 1. In the worldfile, add x,y and z coordinates // may not be necessary if ascii grid files included above

1. Include the library in the directory from which rhessys is run (scripts or worldfiles)
2. In the scripts file, add ‘–firespread #’ after -b (and possibly -g, -c, etc). The # in ‘-firespread #’ should be replaced with the pixel resolution, typically 30.
3. In the run script include the line: export LD\_LIBRARY\_PATH=. # ensures that the library is found, at least on a Linux machine