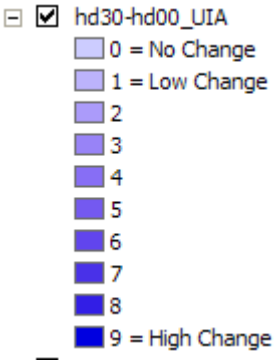
Appendix H – Colorado Statewide Forest Resource Assessment

Urban Influence Areas

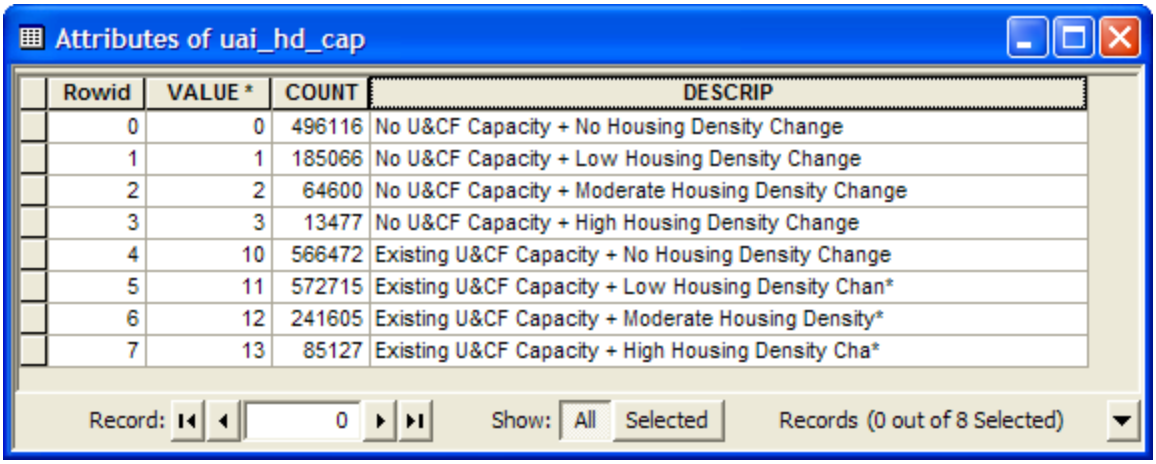
Overview: The purpose of the urban influence areas dataset is to show the extent of the urban and community forestry areas and important to a large majority of Coloradans.

Methods: Process steps for the creation of the Urban and Community Forestry Layer

1. Start with Night Lights data and clip to Colorado Boundary. This dataset is referred to as the Urban Influence Areas (UIA)
2. Within the UIA, create the areas of high-development pressure in the next 20 years.
    a. Use data from Dave Theobald – bhcs_FOTH20080612; downloaded from Theobald's FTP site.
    b. Subtract bhc2000 from bhc2030 (bhc2030-bhc2000) to get raster hd30-hd00. This is the area of housing density change. 0 = no change and 9 = high change.
    c. Reproject hd30-hd00 from native Albers to UTM NAD83 zone 13 (hd30-hd00_utm).
    d. Mask (hd30-hd00_utm) with the UIA dataset to only include housing density change in the UIA. Values from 0 = no housing density change through 9 = high housing density change. The NoData values represent public or protected lands.



    e. Reclass hd30-hd00_UIA as follows:
        i. 0 = 0
        ii. 1-3 = 1 (low)
        iii. 4-6 = 2 (medium)
        iv. 7-9 = (high)
    f. Output is uia_rc
3. Within UIA, classify areas of capacity defined as communities with paid professional forestry staff (WebDET activity code = 11020).
    a. Create a new shapefile called UrbanInfluenceAreas_withCapacity.shp.
    b. Add fields: capacity number 0 = no capacity and 10 = yes capacity, capacity_T text no = no capacity and yes = yes capacity.
    c. Select polygons that intersect capacity as defined above and add attributes for 1/yes and 0/no.
4. Convert UrbanInfluenceAreas_withCapactiy.shp to raster based on Capacity field (output = uai_cap).
5. Add uai_rc and uai_cap rasters to get uai_hd_cap final output grid. Values as below:



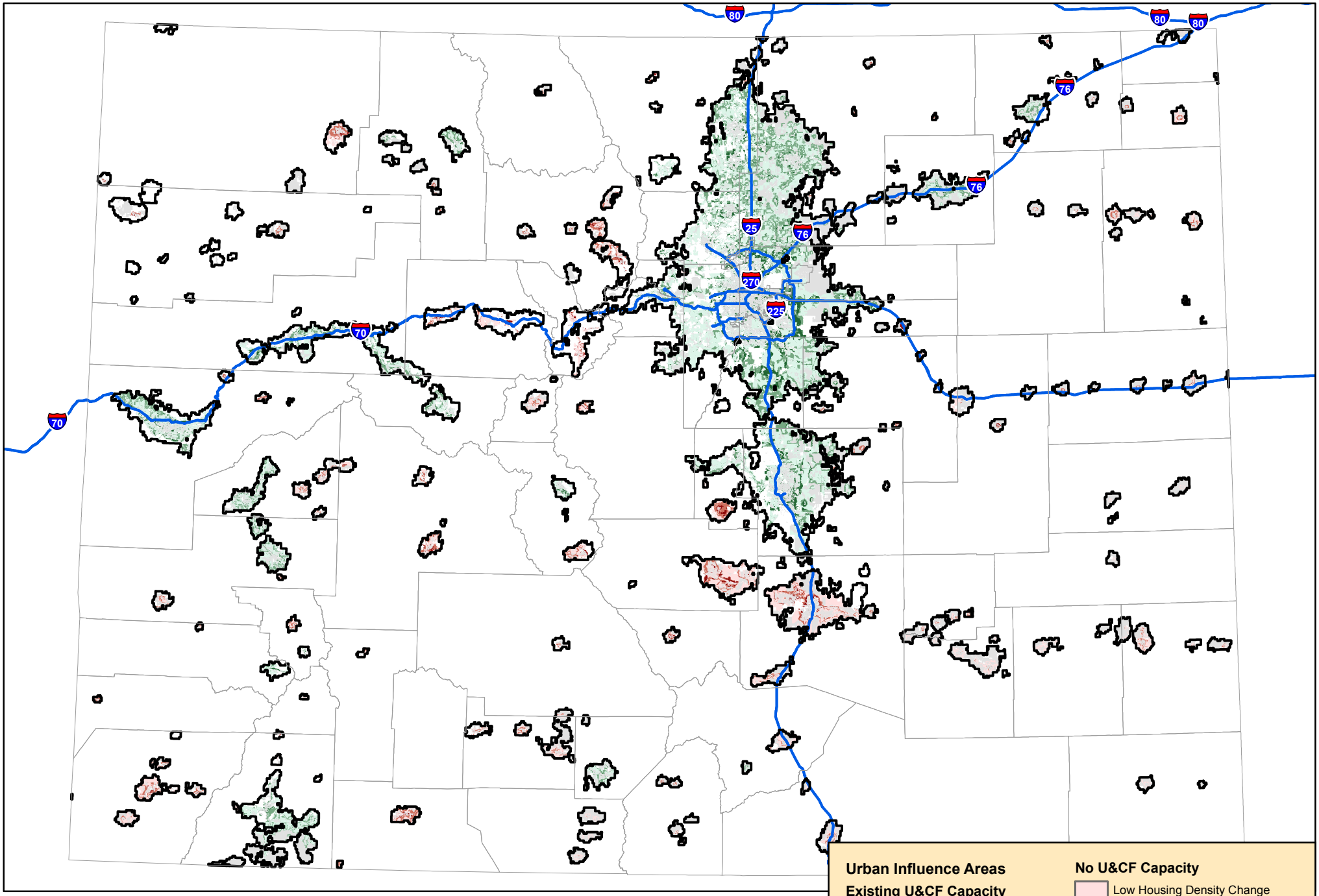
A layer file also was created for the final output grid.

Data Sources:

1. Night Lights dataset - USGS
2. Housing density and projected housing density from Dave Theobald - http://www.nrel.colostate.edu/ftp/theobald/
3. Capacity of urban areas from CSFS WebDET geodatabase.

References:

None



Urban Influence Areas - Community Capacity (Staff) and Housing Density Change