# Sundown Towns at Tract Level

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## Key Data Columns

* **GISJOIN**: A tract identifier which can be used to join this data set with other tract level datasets
* **GEOID**: A tract identifier which can be used to join this data set with other tract level datasets
* **full\_nm**: A sundown town which this tract intersects with
* **prcnt\_s:** This variable stores the fraction of the tract’s area which is contained in the sundown town with the name full\_nm. For example, if prcnt\_s is 0.2, then 20% of the area of the tract is within the sundown town with the name full\_nm.
* **ppltn\_s**: This variable stores an estimate of the fraction of the tract’s 2020 population which lives in the sundown town’s area. For example, if ppltn\_s is 0.2, then we estimate that 20% of the tract’s population lives in the sundown town with the name full\_nm.

## Other Data Columns

* **Other Tract Identifiers**: STATEFP, TRACTCE, NAME, COUNTYF
* **Other Sundown Town Identifiers:** name\_1, state, id (keys into Loewen’s website data set)
* **Other Sundown Town Information**
  + plc\_typ - is this sundown town a local government, a county subdivision, a county, or an uncertain area (most often neighborhoods and unincorporated areas). Information from the 2020 Census
  + type - the same information as plc\_typ reported from Loewen’s site.
  + confrmd - an indicator of how certain it is that this place was a sundown town according to Loewen’s reports
  + sign - an indicator of whether there was a sign in the town declaring that it was a sundown town
  + ordinnc - an indicator of whether there was an official ordinance making the town a sundown town
  + showcas - is always either 0 or 1. I am not totally sure what it represents. Vast majority of values are 0.
  + org\_lng - original longitude where sundown town was marked on Loewen’s site
  + orig\_lt - original latitude where sundown town was marked on Loewen’s site

rlctd\_ - whether I moved the sundown town to a new place while cleaning (some of them were mis-geocoded)

## Sources and Years

* Population at block group level, NHGIS reported 2020 Census
* Census tract boundaries, NHGIS reported 2020 Census
* Sundown town boundaries, James Loewen Sundown Towns database
  + This data was cleaned and is significantly different from the original source. Cleaned data is available at: [geospatial-legacy-redlining/sundown\_towns\_areas\_simplified.geojson at main · GeoDaCenter/geospatial-legacy-redlining (github.com)](https://github.com/GeoDaCenter/geospatial-legacy-redlining/blob/main/public/geojson/sundown_towns_areas_simplified.geojson)

## Data Processing

* All of the data processing was done in R in a file available at [geospatial-legacy-redlining/ID\_Sundown\_Tracts.R at main · GeoDaCenter/geospatial-legacy-redlining (github.com)](https://github.com/GeoDaCenter/geospatial-legacy-redlining/blob/main/public/geojson/sundown_towns_tract_level/ID_Sundown_Tracts.R)
* To calculate prcnt\_s and ppltn\_s, I create a dataframe with a row for each intersection of tracts and sundown towns. This means if a tract intersects multiple sundown towns, there are multiple rows which represent that tract (one for each sundown town it intersects).
  + E.g. For example, there is a tract within both Naperville, IL (a sundown town at the town level) and DuPage County, IL (a sundown town at the county level). There are two rows for this tract in the dataframe, one concerning its intersection with Naperville and the other concerning its intersection with DuPage County. Each row only considers one tract and one sundown town at a time.
* Using this dataframe, I calculate prcnt\_s for each row by dividing the area of overlap between the tract and the sundown town by the total area of the tract.
* Still using this dataframe, I calculate ppltn\_s with a more complicated process. First, for each row, I check which block groups within the tract intersect the sundown town. I then calculate ppltn\_s by dividing the population of the block groups within the tract which do intersect the sundown town by the population of block groups within the tract which do not intersect the tract. So when ppltn\_s is 0.3, what that actually means is that 30% of the population within the tract in 2020 lived within a block group that intersected the sundown town which has the name full\_nm in the row.

## Limitations

* ppltn\_s is an overestimate of the actual proportion of the 2020 population which lived in a former sundown town. This is because 100% of the population of a block group is considered “living in a sundown town” if any of the block group is in a sundown town. Since sundown towns tend to be population centers, it is likely true that most of the population of a block group does actually live in the sundown town, as opposed to the area outside of it (especially in rural areas).

## Organizational and Data Source Links

[NHGIS Data Finder](https://data2.nhgis.org/main) - Source of Census Data

[Sundown Towns by State - History and Social Justice (tougaloo.edu)](https://justice.tougaloo.edu/sundown-towns/using-the-sundown-towns-database/state-map/) - Source of Sundown Towns data

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