

Fine-scale housing, population, and wildland-urban interface data developed for the 2020 Resources Planning Act (RPA) Assessment^{1,2} and related efforts. These data can be used for numerous applications by private and public land management and research constituents. Fine-grained data on population and housing (county and sub-county scales) over time provide trends for investigation and allow for projections of human populations. Tracking the spatial interface between humans and wildlands can help us understand fire dynamics and fire risk, wildlife and changes in species distributions, and communities surrounding managed lands. Datasets are available as GIS polygon features of U.S. Census blocks or counties.

DATA DESCRIPTION	UNITS	SPATIAL EXTENT	SPATIAL RESOLUTION	TEMPORAL DOMAIN	POTENTIAL USE*
<u>Current and Past</u>					
<u>Fine-scale housing</u> ^{†,3,4,5}	Housing units	Conterminous U.S.	Census blocks <i>geographies based on 2020 Census</i>	1990, 2000, 2010, 2020	National-level to Mid-level applications. Investigate spatial and temporal trends in housing development.
<u>Wildland-urban interface (WUI)</u> ^{3,4,5,6}	WUI classes	Conterminous U.S.	Census blocks <i>geographies based on 2020 Census</i>	1990, 2000, 2010, 2020	National-level to Mid-level applications. Can be used to investigate WUI extent and how it has changed over time including area, houses, and population. WUI definitions follow the Federal Register ⁷ in defining where housing is intermingled with (“intermix”) or adjacent to (“interface”) wildland vegetation. As of 2020, the WUI covered 9.4% of the conterminous U.S. and held 32% of all houses. WUI classes are based on combinations of housing types and wildland vegetation categories.
<u>Future Projections</u>					
Fine-scale housing projections [†] <i>Based on Woods & Poole</i> ⁸	Number of housing units	Conterminous U.S.	Census blocks <i>geographies based on 2000 partial block groups from Census</i>	2030-2060 <i>10-year timestep</i>	National-level to Broad-level applications. Investigate future housing development.
<u>Population</u> ⁹ <i>Available for each SSP</i> ¹⁰	Number of people	Conterminous U.S.	County	2015-2070 <i>5-year timestep</i>	National-level to Broad-level applications. Projected population levels at the county level by shared socioeconomic pathway (SSP) enable investigation of plausible future population scenarios and associated impacts to neighboring lands and resources. Each SSP corresponds with a different RPA scenario. Historical baseline data from 2010 are included. These data were incorporated into projections of other RPA datasets.

DATA DESCRIPTION	UNITS	SPATIAL EXTENT	SPATIAL RESOLUTION	TEMPORAL DOMAIN	POTENTIAL USE*
<u>Per capita personal income</u>⁹ <i>Available for each SSP¹⁰Error! Bookmark not defined.</i>	US Dollars in 2009 dollars	Conterminous U.S.	County	2015-2070 5-year timestep	National-level to Broad-level applications. Projected per capita personal income at the county level by shared socioeconomic pathway (SSP) enable investigation of plausible future income growth scenarios and associated impacts to neighboring lands and resources. Each SSP corresponds with a different RPA scenario. Historical baseline data from 2010 are included. These data were incorporated into projections of other RPA datasets.

* A description of FS business applications by spatial scales is available in Table 1-1 of the [Existing Vegetation Classification, Mapping, and Inventory Technical Guide, v2.0](#)

† Currently in development/under review

References and Footnotes:

- ¹ U.S. Department of Agriculture, Forest Service. 2023. Future of America's Forest and Rangelands: Forest Service 2020 Resources Planning Act Assessment. Gen. Tech. Rep. WO-102. Washington, DC. XXX p. <https://doi.org/10.2737/WO-GTR-102>
- ² The RPA website provides links to current and past RPA Assessments, as well as supporting data, technical reports, and webinars: <https://www.fs.usda.gov/research/inventory/rpaa>
- ³ Radeloff, Volker C.; Helmers, David P.; Mockrin, Miranda H.; Carlson, Amanda R.; Hawbaker, Todd J.; Martinuzzi, Sebastián. 2022. The 1990-2020 wildland-urban interface of the conterminous United States - geospatial data. 3rd Edition. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2015-0012-3>
- ⁴ Radeloff, Volker C.; Helmers, David P.; Kramer, H. Anu; Mockrin, Miranda H.; Alexandre, Patricia M.; Bar-Massada, Avi; Butsic, Van; Hawbaker, Todd J.; Martinuzzi, Sebastián; Syphard, Alexandra D.; Stewart, Susan I. 2018. Rapid growth of the US wildland-urban interface raises wildfire risk. Proceedings of the National Academy of Sciences. 115(13): 3314-3319. <https://doi.org/10.1073/pnas.1718850115>
- ⁵ Data are also available in the Enterprise Data Warehouse (EDW) with three map services (EDW/EDW_WUI_1990_01, EDW/EDW_WUI_2000_01, EDW/EDW_WUI_2010_01, and EDW/EDW_WUI_2020_01) available here: <https://apps.fs.usda.gov/arcx/rest/services/EDW>
- ⁶ Radeloff, V.C., R.B. Hammer, S.I Stewart, J.S. Fried, S.S. Holcomb, and J.F. McKeefry. 2005. The Wildland Urban Interface in the United States. Ecological Applications 15: 799-805. <https://www.fs.usda.gov/treesearch/pubs/14912>
- ⁷ Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk from Wildfire. A Notice by the Forest Service, the Indian Affairs Bureau, the Land Management Bureau, the Fish and Wildlife Service, and the National Park Service on 01/04/2001. 66 FR 751 <https://www.federalregister.gov/d/01-52>
- ⁸ Woods & Poole Economics, Inc. Washington, D.C. Copyright 2022. Woods & Poole does not guarantee the accuracy of this data. The use of this data and the conclusion drawn from it are solely the responsibility of [Licensee].
- ⁹ Wear, D.N., Prestemon, J.P. 2019. Spatiotemporal downscaling of global population and income scenarios for the United States. PLoS ONE 14(7): e0219242. <https://doi.org/10.1371/journal.pone.0219242> with data available at: Wear, David N.; Prestemon, Jeffrey P. 2019. Socioeconomic data for Forest Service 2020 RPA Assessment. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2019-0041>
- ¹⁰ Shared socioeconomic pathways (SSPs) were developed by the Intergovernmental Panel on Climate Change (IPCC) to provide scenarios of plausible alternative pathways of societal development, comprised of storylines that include quantitative data on population and economic trends and qualitative descriptions of other societal factors such as technology and governance. For information on those used by the 2020 RPA Assessment, see: Langner, Linda L.; Joyce, Linda A.; Wear, David N.; Prestemon, Jeffrey P.; Coulson, David; O'Dea, Claire B. 2020. Future scenarios: A technical document supporting the USDA Forest Service 2020 RPA Assessment. Gen. Tech. Rep. RMRS-GTR-412. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 34 p. <https://doi.org/10.2737/RMRS-GTR-412>