



AN ESRI  
TECHNICAL PAPER

JUNE 2022

# Methodology statement: Vintage 2022 Esri Time Series Totals

380 New York Street  
Redlands, California 92373-8100 usa  
909 793 2853  
[info@esri.com](mailto:info@esri.com)  
[esri.com](http://esri.com)



Copyright © 2022 Esri  
All rights reserved.  
Printed in the United States of America.

The information contained in this document is the exclusive property of Esri. This work is protected under United States copyright law and other international copyright treaties and conventions. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, except as expressly permitted in writing by Esri. All requests should be sent to Attention: Contracts and Legal Services Manager, Esri, 380 New York Street, Redlands, CA 92373-8100 USA.

The information contained in this document is subject to change without notice.

Esri, the Esri globe logo, The Science of Where, Tapestry, ArcGIS, [esri.com](https://www.esri.com), and @esri.com are trademarks, service marks, or registered marks of Esri in the United States, the European Community, or certain other jurisdictions. Other companies and products or services mentioned herein may be trademarks, service marks, or registered marks of their respective mark owners.

## Table of contents

|                             |   |
|-----------------------------|---|
| Introduction .....          | 4 |
| Data sources and model..... | 4 |

# Methodology statement: Vintage 2022 Esri Time Series Totals

**Introduction** The year 2022 marks the fourth annual release of Esri's Time Series estimates for total population, households, and housing units, but this is the first release in the new Census 2020 geography. Esri's Time Series database contains data for every year between the previous decennial census and Esri's current estimates at all levels of geography down to the block group level. For 2022, the Time Series covers the time period from 2020 to 2022. This database provides users with valuable insight into the recent past to evaluate trends and patterns.

**Data sources and model** Esri's Time Series estimates are released annually alongside the current-year estimates of total population, households, and housing units. With each annual release, the entire Time Series is revised from July 1, 2020, through July 1 of the year prior to the current release of Esri's Updated Demographics. The revised Time Series estimates fill the void between Census 2020 and Updated Demographics, providing a historical view from the census year to the current year. Since the estimates for all years will be revised each year, the Time Series estimates are referred to by their vintage, using the current year to denote the vintage of the Time Series estimates. Therefore, the Vintage 2022 Time Series includes estimates for July 1, 2020, through July 1, 2022.

The decennial census is a snapshot of the population on April 1, 2020. Esri's Time Series begins with a July 1, 2020, point estimate. This July 1 estimate includes corrections made to the census counts by Esri to rectify inconsistencies caused by the Census Bureau's new data privacy methods.<sup>1</sup> The July 1, 2020, estimate not only gives Esri the opportunity to make improvements to census counts but also allows for a uniform year-over-year data series based on a standard point in time. Typical census errors include missed housing units, housing units counted where there are none, and group quarters that were misclassified or counted in the wrong location. Census privacy methods have introduced impossible or improbable statistics this decade, such as cases of households but no household population and extremely large average persons per household. Esri fixes these errors and omissions whenever possible to ensure that the Time Series database has a solid and stable base to build on.

Demographic change has traditionally been measured by comparing the previous decennial census to estimates from the current year of Esri Updated Demographics. Prior to the release of Time Series estimates, changes such as methodological improvements and the integration of new source data precluded comparison of estimates from the current year to previous years. With Time Series estimates, every attempt is made to build a consistent temporal dataset that can be used to evaluate

---

<sup>1</sup> <https://www.esri.com/arcgis-blog/products/esri-demographics/state-government/census-2020-realignment-by-esri/>

year-over-year change since the previous decennial census. Model inputs are backfilled when possible, and erratic change has been dampened throughout the database. In many cases where modeling proved consistent, the Time Series estimates will be unchanged from Esri's annual release of Updated Demographics.

Standard statistical and political geography changes are made throughout the decade. To conduct meaningful and accurate analysis, geographic areas must be stable. Time Series estimates use the most recent geographic boundaries for all years of data. This is particularly valuable for geographies that change on a regular basis, such as ZIP Codes, places, congressional districts, and core-based statistical areas.

#### **Esri's data development team**

Led by chief demographer Kyle R. Cassal, Esri's data development team has more than 40 years of experience in market intelligence. The team's economists, statisticians, demographers, geographers, and analysts produce independent small-area demographic and socioeconomic estimates and forecasts for the United States. The team develops exclusive demographic models and methodologies to create market-proven datasets, many of which are now industry benchmarks, such as Tapestry Segmentation, Consumer Spending, Market Potential, and annual Updated Demographics. Esri® demographics powers ArcGIS® through dynamic web maps, data enrichment, reports, and infographics.



Esri, the global market leader in geographic information system (GIS) software, offers the most powerful mapping and spatial analytics technology available.

Since 1969, Esri has helped customers unlock the full potential of data to improve operational and business results. Today, Esri software is deployed in more than 350,000 organizations including the world's largest cities, most national governments, 75 percent of Fortune 500 companies, and more than 7,000 colleges and universities. Esri engineers the most advanced solutions for digital transformation, the Internet of Things (IoT), and location analytics to inform the most authoritative maps in the world.

Visit us at [esri.com](http://esri.com).



#### Contact Esri

380 New York Street  
Redlands, California 92373-8100 USA

1 800 447 9778  
T 909 793 2853  
F 909 793 5953  
[info@esri.com](mailto:info@esri.com)  
[esri.com](http://esri.com)

Offices worldwide  
[esri.com/locations](http://esri.com/locations)

For more information, visit  
[esri.com/data/esri\\_data](http://esri.com/data/esri_data).