The National Jewish Population Map

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Joshua Comenetz, PopulationMapping.com (Joshua.Comenetz@gmail.com)

Summary

I used the data files in the North American Jewish Data Bank (NADJB), along with U.S. Census Bureau American Community Survey (ACS) data and geographic information systems software to create a current, county-level map of the American Jewish population. This is the most complete American Jewish map ever produced, and a complement to the Data Bank's annual *Jewish Population in the United States* (JPUS) report.

Previous Maps

U.S. Jewish population maps have appeared in several atlases of religion (de Lange's *Atlas of the Jewish World*, Halvorson and Newman's *Atlas of American Religion*, Friesel's *Atlas of Modern Jewish History,* and others) and online (e.g., the Association of Religion Data Archives site), but all of these are either outdated, incomplete, or both. In particular, previous maps create the impression that Jews live in a relatively small fraction of U.S. counties, because they typically are based on only one source (e.g., an *American Jewish Year Book* table). Census data show that ethnic groups of similar size nationally to the Jewish population are far more widely distributed than Jews appear to be. Jews may well be more spatially clustered than average, but this is impossible to assess without a complete national map[1].

The National Map

The ideal would be to attach a current and accurate Jewish population estimate to each of the more than 3,000 counties in the U.S. However, no survey provides these data nationwide or for a consistent date. Therefore, the map incorporates the following:

- The latest Jewish population estimates for those counties covered by community surveys contained in the Data Bank, as reported in JPUS 2011 or individual survey reports
- The latest Jewish population estimates for areas not covered by community surveys, but included in JPUS 2011. These estimates are based on local informants, tables complied by Jeffrey Scheckner (then at United Jewish Communities in New York) in the 1990s, or other sources, in particular the Institute for Southern Jewish Life's (Jackson, MS) online community encyclopedia

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[1] The National Map suggests that Jews reside in a larger fraction of U.S. counties than other sources indicate, but this is likely still an underestimate. A handful of studies support this. For example, the Western North Carolina 2010 study indicates that Jews live in all of the roughly 20 rural counties in the study area.

- Indications of Jewish population derived from variables in the most recent ACS 5-year sample data (2006-2010 estimates) or based on the presence of synagogues in the 2001 Synagogue Census or the 2010 Religious Congregations and Membership Study (RCMS) (see list of sources)

The first two items above provide concrete population estimates of varying vintage, but geographic coverage is incomplete (there are no estimates for most small or rural U.S. counties; some estimates cover multiple counties). Like all U.S. government data sets, the ACS does not cover religion, but it does contain a variety of proxy variables that indicate the presence of Jews:

- Yiddish or Hebrew home language – extremely few non-Jews use these as their home languages. Therefore it is reasonable to assume that the Jewish population of a county cannot be less than the number of people reporting that they speak either of these
- Israeli ancestry, Israel as birthplace – on the assumption that most non-Jews who could identify themselves this way do not, because they identify as Arab or Palestinian. The Jewish population of a county is unlikely to be lower than the number of people in these categories
- Russian home language, Russian ancestry, Russia as birthplace – most but by no means all immigrants to the U.S. from Russia or the former Soviet Union have been Jewish. A sizable Russian-speaking or Russian-ancestry community very likely contains some Jews, but one cannot assume that every county with any Russians also has Jews

The current total estimates for the above are shown in the table below. The Russian language figure is much larger than the Russia birthplace number because many Russian speakers were born in other former Soviet republics. I only looked at Russia data for the current project. Many "Russian" first ancestry people actually descend from immigrants who arrived from what are now other independent countries, such as Ukraine.

ACS variable	2006-2010 estimate	As a percent of Jews
Yiddish language	150,000	2%
Hebrew language	210,000	3%
Israeli first ancestry	120,000	2%
Israel birthplace	130,000	2%
Russian language	830,000	13%
Russian first ancestry	2,150,000	33%
Russia birthplace	390,000	6%

ACS Data

After experimenting with different thresholds and looking at the resulting map patterns, counties were designated as having Jewish population if the ACS showed even one speaker of Hebrew or Yiddish, or one person born in Israel or with Israeli first ancestry, or at least 100 Russian speakers, Russian born people, or people with Russian first ancestry. The ACS, like the former long-form census question, allows people to state either one or two ancestries. Only first or sole responses of Israeli or Russian were counted for mapping, because there is no way to assess the Jewish significance of multiple ancestry responses. For small values, the margin of error in the

ACS is large, often exceeding the data values themselves. This means that ACS-derived estimates are more useful for indicating the presence of Jews in rural areas than gauging Jewish population size.

On the other hand, many counties with only a handful of Jews must be missed by the ACS because the sample happens not to include anyone speaking Hebrew or Yiddish, of Israeli birth or ancestry, or underestimates the number of people with Russian connections. This could be tested by comparing current ACS data to the 2000 census long form results—also a sample, but a larger one—to see if many more counties have indications of Jewish population in the latter.

There is a good linear relationship between ACS variables and the National Map estimates (BermanEst column in the data table)—R^2 values of about 0.9 when comparing Russian or Israeli first ancestry numbers and the National Map estimates. The data are not entirely independent because some National Map estimates came from the division of multi-county estimates into values for individual counties, based in part on looking at the relative levels of ACS indicators in each county. However, predicting the Jewish population of counties with very few Jews using that linear relationship works poorly because the relationship is weaker in counties with fewer Jews. Also, people counted by the largest ACS variables—those relating to Russia—are not guaranteed to be Jewish, and the likelihood of their being Jewish varies regionally. For example, Alaska, North Dakota, and the Pacific Northwest were destinations for non-Jewish Russian immigration in the past, so Russian counts are not always indicative of the size of the Jewish population.

County Estimates

Each county in the national map was assigned one of the following:
- A Jewish population estimate derived either from a community survey or the JPUS 2011 report. Where there was only a multi-county estimate available, the estimate was divided among counties based on zip code estimates in community surveys if available; or using ACS data, with more weight to counties with more people in the categories listed above; and/or based on and online sources, including Google Maps searches for Jewish institutions such as synagogues and Jewish schools
- A minimum Jewish population estimate based on Yiddish, Hebrew, or Israeli ACS data, or a placeholder estimate of 49 if there were at least 100 people with Russian identity, since there is no way to know what fraction of Russians are Jewish. Similarly, for counties that have synagogues but no available Jewish population estimate, a placeholder estimate of 101 was used. Placeholder estimates show the presence of Jews in an area but other sources are needed to provide concrete population estimates
- A zero value – no evidence of Jewish residents found

Procedure for Deriving County Map Estimates

The outline below indicates how Jewish population estimates were obtained for each county (BermanEst column in the data table).

1. Estimate available in JPUS 2011 main table
   a. If for one county, use estimate. If JPUS has separate estimates for multiple places within one county, sum them
   b. If for more than one county, check for community study in Data Bank and online
      i. If community study has county data, use that
      ii. If it has zip code data that can approximate counties, calculate county estimates, even if incomplete (e.g., only some zips have data), then go to 1c
      iii. If no county or usable zip data, go to 1c
   c. If no or partial county or zip data, do a search for "Jewish" in Google Maps. Typically shows that Jewish institutions, if any, are clustered in one county of a multi-county set. Also look at ACS data on language, ancestry, and foreign birthplace to get sense of proportion of Jews in each county
2. No estimate in JPUS 2011 main table
   a. First look for estimate in JPUS Other Places (fewer than 100 Jews) table
      i. If clearly for one county, use estimate. Many of these are small towns located in the middle of counties
      ii. If located on border of counties, follow 1c procedure
      iii. If says "few" Jews, estimate Jewish population at 5; "few families," estimate of 10; or other logical estimate
   b. No JPUS data, but synagogue found in 2001 Synagogue Census, RCMS 2010, or in online search, use estimate of 101
   c. ACS data shows any value greater than 0 for Yiddish plus Hebrew language, Israeli first ancestry, or Israeli birthplace, use largest of these three for estimate (see more detail below)
   d. ACS data show value of 100 or more for Russian language, first ancestry, or birthplace, use estimate of 49
   e. No JPUS, ACS, or synagogue information, mapped Jewish population is zero

The following entries appear in the BermanComments column in the data table, according to which part of the outline above provided the Jewish population estimate for each county.
- 1a, 1bi – *one co*
- 1bii – *Xest*, where X is number of counties in the group
- 1c – *Xguess*, where X is number of counties in the group
- 2ai, 2aiii – *one co*
- 2aii – *Xguess*
- 2b – *Synagogue, no Jewish est*
- 2c – *HYI_HY, HYI_IA1,* or *HYI_IB*
- 2d – *Russian*
- 2e – *zero*

- In some cases, JPUS contains estimates for several places in one county, or parts of a county are within multiple estimate areas. If several places are entirely in one county, the BermanEst field will contain the sum of these and the Comment will be "one co." In other cases, the Comment will indicate partial values as follows: "partXguess" = estimate is the sum of a one co estimate and a 1c value; "partXguess, partXguess" = estimate is the sum of two 1c values

Additional Notes for Above Outline

2b. Jewish estimate zero, but county has synagogue according to either 2001 Synagogue Census or RCMS 2010. In these cases, an arbitrary Jewish population of 101 was assigned to the county, and the BermanComments field says "Synagogue, no Jewish est." In some counties, the sum of Yiddish, Hebrew, and Israelis in the ACS exceeded that figure, but never by a large margin considering the error bands around ACS figures. Figures for these 41 counties can be improved by looking at synagogue membership counts.

RCMS 2010 Jewish population data are incomplete (see next section), but Jewish congregation counts look more accurate. The overall impression is that RCMS misses some Jewish congregations but helps capture the direction of change between the 2001 Synagogue Census[2] and 2010. Counties whose Jewish population has not changed or has even increased modestly may show fewer congregations in RCMS (e.g., Nassau, NY) compared to the synagogue census. Counties with Jewish declines show large drops in congregations (e.g., Philadelphia, PA). Counties with large Jewish increases show more congregations in RCMS than the synagogue census (e.g., areas with ultra-Orthodox clusters such as Ocean, NJ, and Rockland, NY).

2c. Jewish estimate is zero, county has no synagogue, but ACS shows Yiddish or Hebrew speakers or Israelis. For Jewish estimate, used the largest of: sum of Yiddish and Hebrew speakers, Israeli first ancestry, or Israeli born, and the BermanComments field says HYI_YH, HYI_IA1, or HYI_IB, respectively. The actual Jewish population is very likely larger (although the high ACS margin of error makes it impossible to evaluate this without information from other sources), but this at least records the presence of Jews in these counties.

2d. Jewish estimate is zero, county has no synagogue, no Yiddish or Hebrew speakers or Israelis in the ACS, but Russian speakers, Russian born people, or people with Russian first ancestry in the ACS. It is not appropriate to assume all these people are Jews, because many non-Jewish Russians have immigrated to the U.S. A large fraction of all counties, including many small, rural ones distant from known Jewish population, have at least one person with Russian identity. It is impossible to know whether a handful of Russians in a small, rural county includes any Jews. Even larger Russian populations may include no or few Jews, in areas where non-Jewish Russian migration was high in the past, such as Alaska, the Pacific Northwest, or North Dakota. Therefore, a cutoff of 100 was used. This has the effect of limiting the set of counties to ones much more likely to actually have Jews, e.g., outer suburban counties. An arbitrary Jewish population of 49 was assigned to these counties, and the BermanComments field says "Russian."

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[2] The 2001 Synagogue Census is the most complete, accurate, and geographically-detailed of its kind. A handful of minor geographical errors were corrected during review of the data and transfer to mapping software.

Differences between National Map and JPUS

While JPUS 2011 is the foundation for the National Map, the latter does not exactly track the former. The National Map has been enhanced by the ACS as described above, and several other sources. In contrast to the synagogue counts, RCMS 2010 data were not useful here. Jewish estimates appear for relatively few counties (far fewer than those shown on the National Map), the estimates are sometimes very different from those in JPUS or oddly precise, and the total estimate of "Jewish adherents" is only 2.26 million compared to the 6.59 million in JPUS. The National Map sum is slightly different— 6.74 million—for several reasons:
- Results from several recent studies not in JPUS 2011 are included, notably New York 2011, which shows an increase of 126,000 from the previous study[3]
- In a few cases, two JPUS estimates appear to cover duplicate geography. Duplicates have been subtracted
- As described above, ACS-based estimates have been added for many small town, rural, or urban fringe counties. It could be that Jews in these areas should be subtracted from neighboring counties in JPUS, because the JPUS estimates really refer to a greater geographic area than is suggested in JPUS
- A number of small town estimates have also been added from the Institute for Southern Jewish Life's online encyclopedia. In a handful of cases, information came from the author's personal knowledge (southern Maryland; Levy County, FL)
- Rounding errors

Future Improvements

Counties with zero values may not lack Jewish residents, and numerical estimates can always be improved. The challenge is to find evidence. This initial version of the National Map can become more accurate via the following:
- **Request to users:** if you have information about Jews in "zero" counties, or better data for non-zero counties, please contact me at **Joshua.Comenetz@gmail.com**. For mapping, one of the best potential sources is mailing lists for synagogues or Jewish organizations that provide addresses; these often show people living in small town or rural areas. The map could be periodically updated with informant data and the results of new community studies
- **Inclusion of more studies not in the Data Bank,** such as Reisman's 1995 Alaska study (Brandeis University)
- **Using ACS or census data** on migration from other former Soviet republics that sent many Jews to the U.S., such as Belarus, Moldova, and Ukraine. Also, the 2000 census long form includes roughly the same variables as the ACS but with a larger sample size
- **Information from mailing or marketing lists.** Any large national Jewish marketing or mailing list, any regional Jewish federation list, and many synagogue membership directories will likely show people living "off the map"
- **Synagogue membership counts:** this information exists for the main Jewish movements in the U.S., such as the Union for Reform Judaism. Will help in estimating the Jewish

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[3] The author is a member of the team conducting this study.

population of counties with synagogues but no Jewish data in JPUS (e.g., in southern Maryland[4]), and also for comparing with JPUS or ACS-based estimates. For example, if synagogue membership is higher than either of the latter, the latter are probably out of date

- **Ensuring that anusim (crypto-Jews)** and other groups that may not be counted in JPUS or community surveys are represented, at least by location if numerical data are not available. The Institute for Jewish and Community Research (San Francisco) maintains ties to these communities
- **Checking unusual data values:** for example, ACS data on Hebrew language alone exceed the JPUS estimates for Horry County, SC (Myrtle Beach) and Garland County, AR (Hot Springs). Either these are ACS errors, or the JPUS estimates do not reflect recent growth
- **Adding Canada and Mexico.** Unlike the U.S., both have census religion questions and therefore census data on Jewish population. Would fit with the mission of the *North American* Jewish Data Bank

Data Sources

Sources are listed in order of importance for mapping. The primary source for Jewish population estimates was the NADJB. U.S. Census Bureau resources were used in small town and rural areas. A handful of recent Jewish demographic surveys were available on federation websites but not yet in the NADJB. The 2001 Synagogue Census was used primarily for validation—checking that areas with synagogues had Jewish population estimates. The RCMS was used for comparison. Google Maps and internet searches were used to identify the locations of synagogues and other Jewish communal institutions within county boundaries.

1. North American Jewish Data Bank: *jewishdatabank.org*

1a. National reports
- Ira Sheskin and Arnold Dashefsky. Jewish Population in the United States, 2011
- Ira Sheskin and Arnold Dashefsky. Jewish Population in the United States, 2010
- Jim Schwartz, Jeffrey Scheckner, and Lawrence Kotler-Berkowitz. Census of U.S. Synagogues, 2001. In 2002 *American Jewish Year Book*

1b. Entire collection of Jewish community studies—in particular:
- Akron 1999
- Atlanta 2006
- Baltimore 2010
- Boston 2005
- Chicago 2010
- Cleveland 2004, 2011
- Columbus 2001

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[4] There are four synagogues in Calvert, Charles, and St. Mary's Counties, MD, but no Jewish estimates in JPUS 2011.

- Dayton 1987
- Delaware 1995, 2006
- Denver 2007
- Harrisburg, PA 1994
- Hartford 2000
- Houston 1986, 2001
- Jacksonville, FL 2002
- Los Angeles 1997
- Manchester, NH 1983
- Nashville 2002
- New Haven 2010
- New Orleans 1984
- Oklahoma City 1982
- Orlando 1993
- Pittsburgh 2002
- Portland, OR 2010
- Quad Cities, IA/IL 1990
- Rhode Island 2002
- Richmond 1994, 2011
- Rochester 2010
- Sacramento 1993
- St. Louis 1995
- San Antonio 2007
- San Francisco 2004
- Seattle 2010
- Tidewater, VA 2001
- Tucson 2002
- Twin Cities, MN 2004
- Washington, DC 2003
- Western North Carolina 2010
- Youngstown 2002

2. Community study reports from federation websites—not yet in NADJB
- East Bay, CA 2011
- Milwaukee 2011
- New York 2011

3. Goldring-Woldenberg Institute for Southern Jewish Life: *www.isjl.org/history/archive*
- Online encyclopedia describing history and current Jewish communities in southern states, with a focus on small towns

4. U.S. Census Bureau: *factfinder2.census.gov*
- American Community Survey 5-year data for 2006-2010
- 2010 Census data
- 2011 Population Estimates
- Cartographic Boundary File (county map) available at: www.census.gov/geo/www/cob

5. Google Maps: *maps.google.com*

6. Association of Religion Data Archives/Association of Statisticians of American Religious Bodies: *www.thearda.com*
- 2010 Religious Congregations and Membership Study

Acknowledgements

Permission for Use of Data

The National Map is hereby provided for free distribution on the Data Bank website. The data and map files may be freely reused for any research or other non-profit purpose providing that the data source is acknowledged.

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Data Dictionary

The Error columns provide the 90% margin of error (MOE) around ACS estimates. For small values, these are often larger than the estimates themselves. Two examples:
- Alachua County, FL, had 713 Russian speakers and a MOE of 267. There is a 90% chance that the number of speakers was within 267 of 713, i.e. between 446 and 980.
- Berkeley County, WV, had 0 people born in Israel and a MOE of 119. There is a 90% chance that the number of Israel-born people was between -119 and 119—or 0 and 119 since populations cannot be negative. Realistically for the current data set, some ACS zeros are actually nonzero but they are unlikely to be as high as 119.

Data Table column	Explanation
CountyName	County and state names
BermanEst	Jewish population estimate for each county, 2011
BermanComments	Information about estimate (see text for details)
SynCensus01	Number of synagogues in 2001 Synagogue Census
SynRCMS10	Number of Jewish congregations in RCMS 2010
Yiddish	ACS 5-year 2006-2010 Yiddish speakers estimate (ages 5 and over)
Error1	Margin of error for above (90% confidence level)
Russian	ACS 5-year 2006-2010 Russian speakers estimate (ages 5 and over)
Error3	Margin of error for above (90% confidence level)
Hebrew	ACS 5-year 2006-2010 Hebrew speakers estimate (ages 5 and over)
Error4	Margin of error for above (90% confidence level)
RussiaBorn	ACS 5-year 2006-2010 Russian born estimate
Error5	Margin of error for above (90% confidence level)
IsraelBorn	ACS 5-year 2006-2010 Israeli born estimate
Error6	Margin of error for above (90% confidence level)
Israeli1	ACS 5-year 2006-2010 Israeli first ancestry estimate
Error7	Margin of error for above (90% confidence level)
Russian1	ACS 5-year 2006-2010 Russian first ancestry estimate
Error8	Margin of error for above (90% confidence level)
CensusPop10	2010 Census population count
FIPScode	County FIPS code (for joining with other tables in GIS software)
State	Two-letter state abbreviation