

Population Counts on American Indian Reservations and Alaska Native Villages with and without the Application of Differential Privacy

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Roadmap of Talk

Overview of American Indian and Alaska Native Data

National Data

Congressional Districts

California

Alaska

Native Hawaiian Homesteads

Additional Maps

Recommendations

Sources of American Indian, Alaska Native and Native Hawaiian Data

1. US Census Data
2. Other Administrative Data
 - 2.1 IHS
 - 2.2 Veterans Admin
 - 2.3 HMDA
3. How are these data used?
 - 3.1 Population Counts for Governance
 - 3.2 Demographic and Health Research
 - 3.3 Funding Mechanisms

Application of Differential Privacy on AIANNH Geographic Units

1. 2010 US Decennial Demonstration Data
 - 1.1 Privacy Loss Budget allocated to "on-spine" geographies
 - 1.2 "Off-spine" geographies were not allocated any privacy loss budget
 - 1.3 Not clear on how this will affect counts in these communities

2. Next slides provide information for reservations and villages
 - 2.1 Appears that there is a consistent undercount
 - 2.2 This in addition to the well-known undercounts already in place for these populations of about 5%

Sources of Data

Data for analysis from three sources:

1. IPUMS National Historical Geographic Information System
2. Cornell Institute for Economic and Social Research, CISER
3. US Census Bureau 2010 Demonstration Data Products

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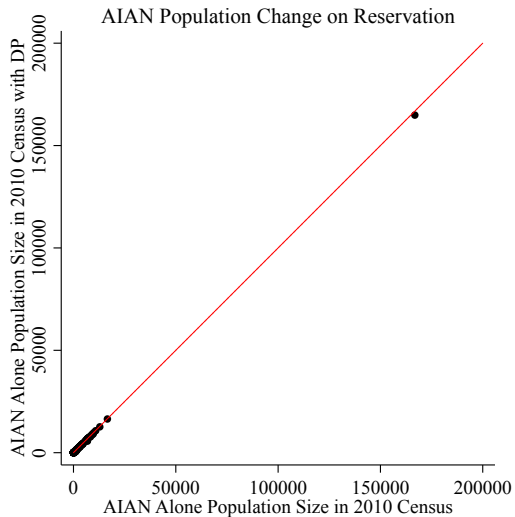
Alaska

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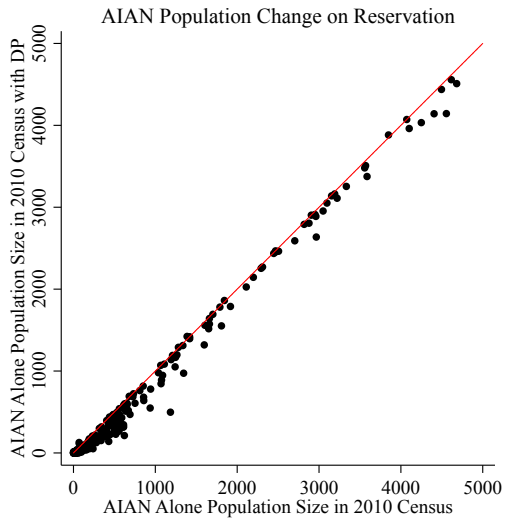
Additional Maps

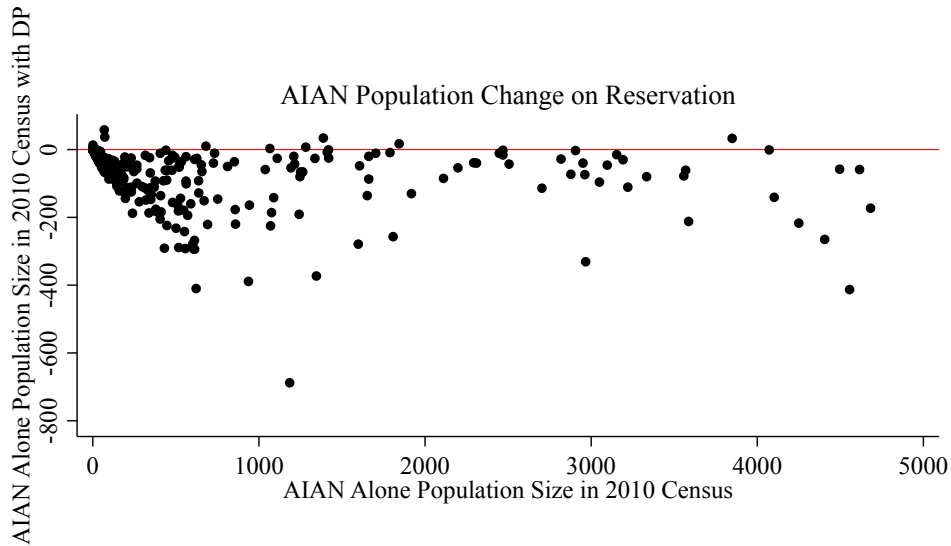
Recommendations

All Reservations including Navajo

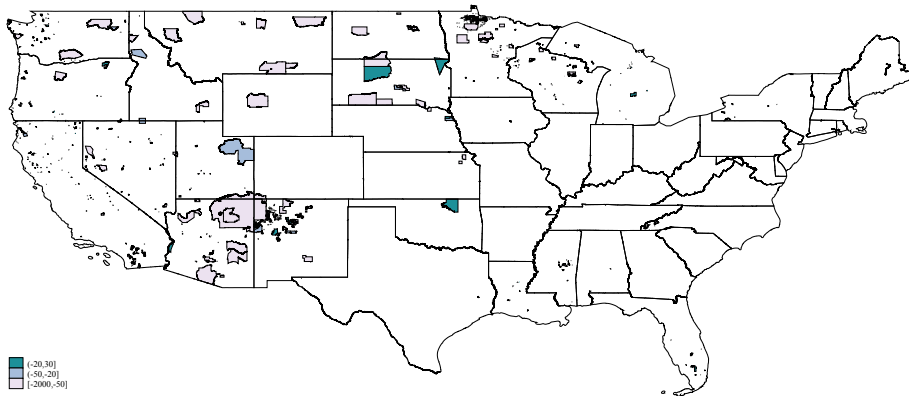


Reservations excluding populations > 5000

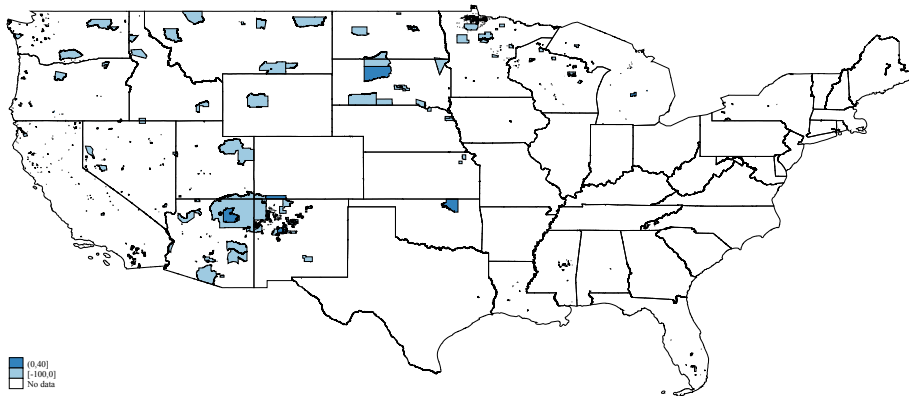




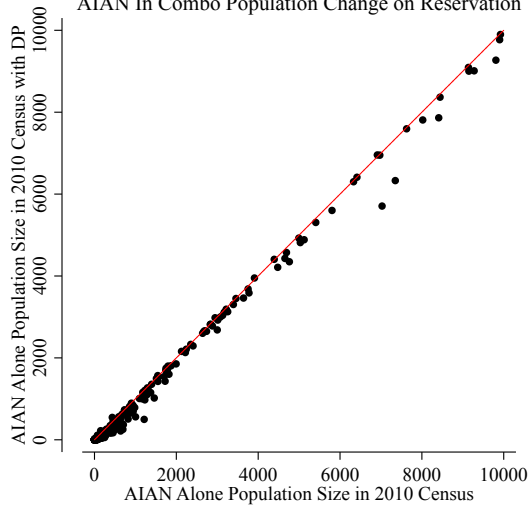
Count Difference in Population on Reservations



Percent Difference in Population on Reservations



AIAN In Combo Population Change on Reservation



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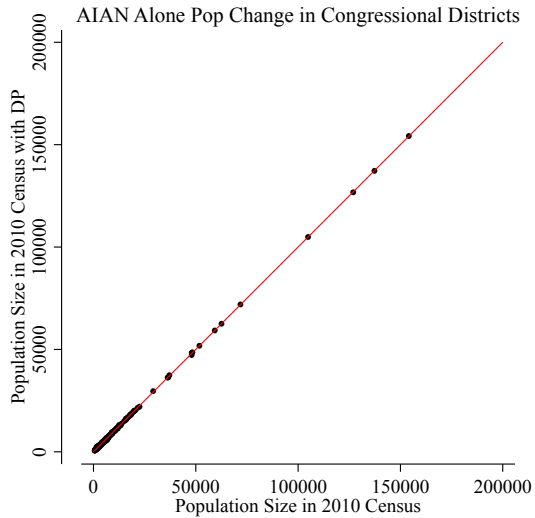
California

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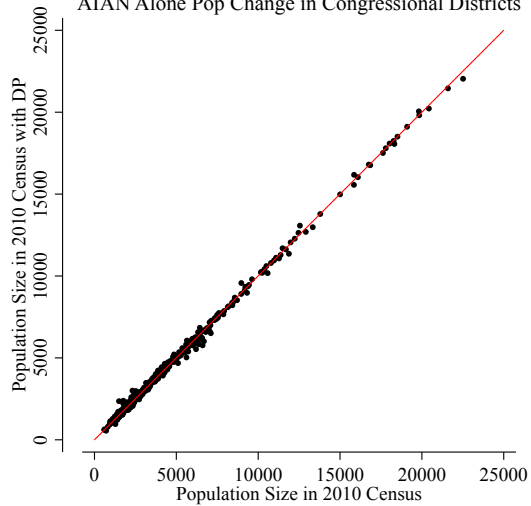
Native Hawaiian Homesteads

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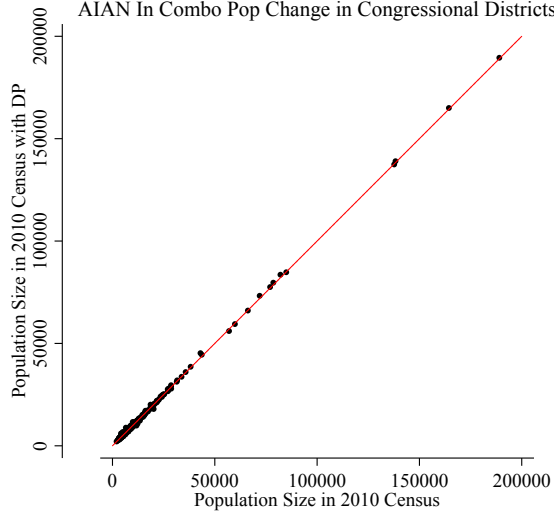
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AIAN Alone Pop Change in Congressional Districts



AIAN In Combo Pop Change in Congressional Districts



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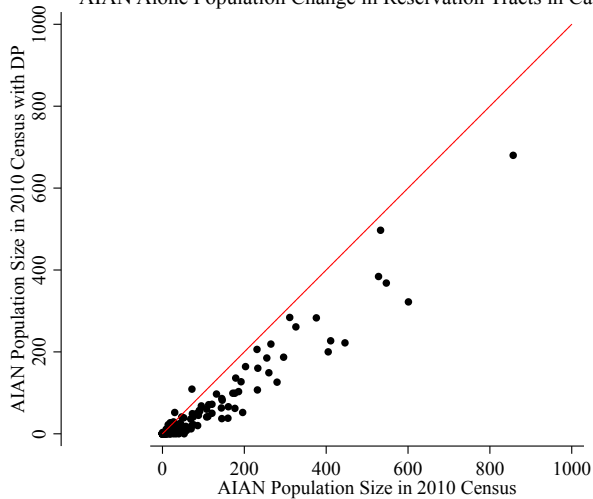
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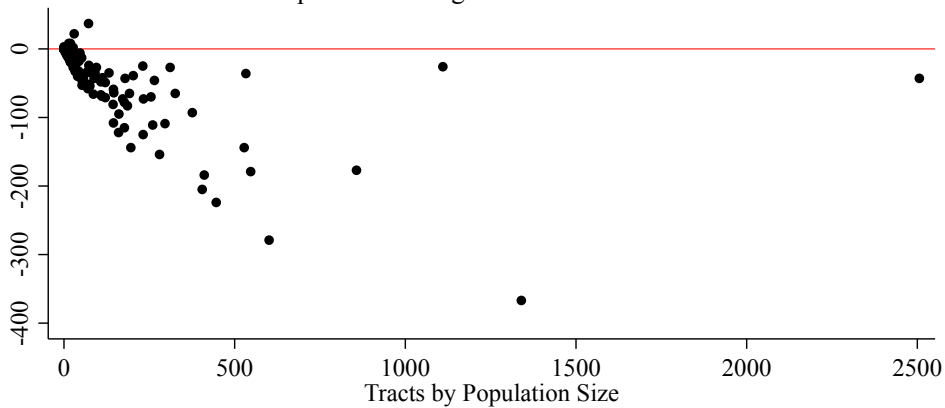
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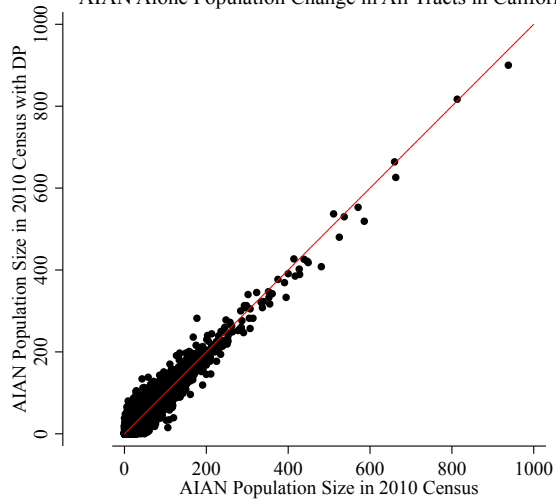
AIAN Alone Population Change in Reservation Tracts in California



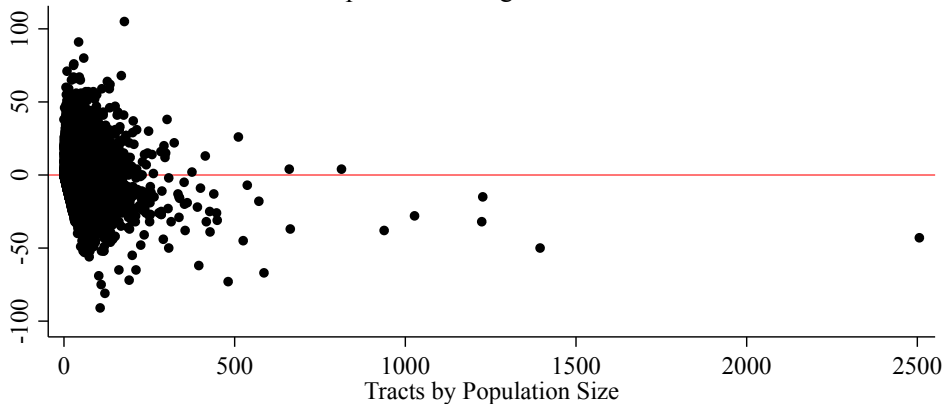
AIAN Alone Population Change in Reservation Tracts in California



AIAN Alone Population Change in All Tracts in California



AIAN Alone Population Change in All Tracts in California



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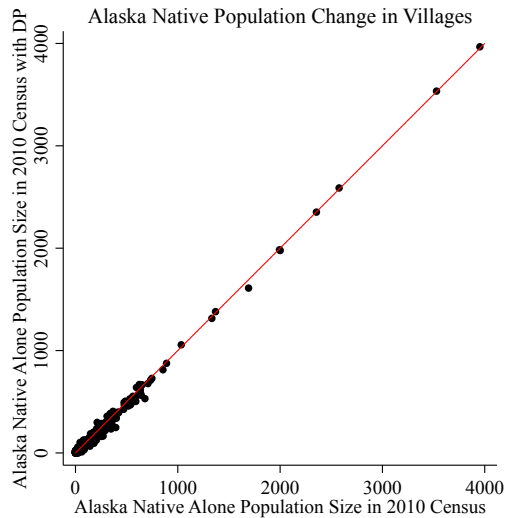
Alaska

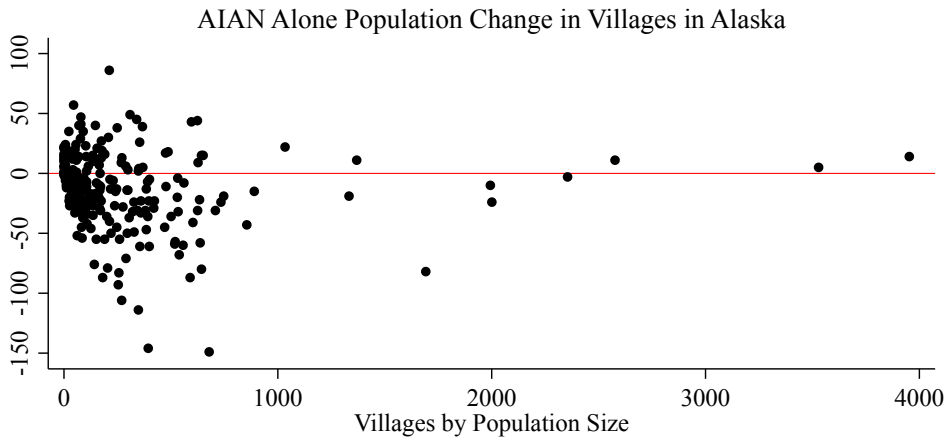
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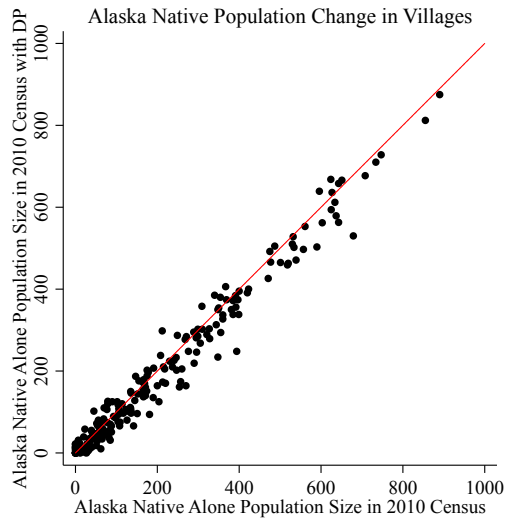
Recommendations

Villages excluding populations > 4000

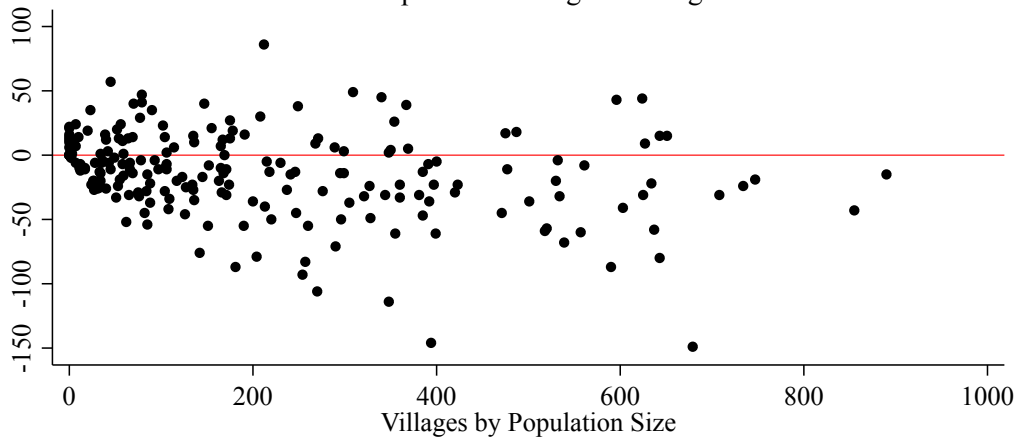




Villages excluding populations > 1000



AIAN Alone Population Change in Villages in Alaska



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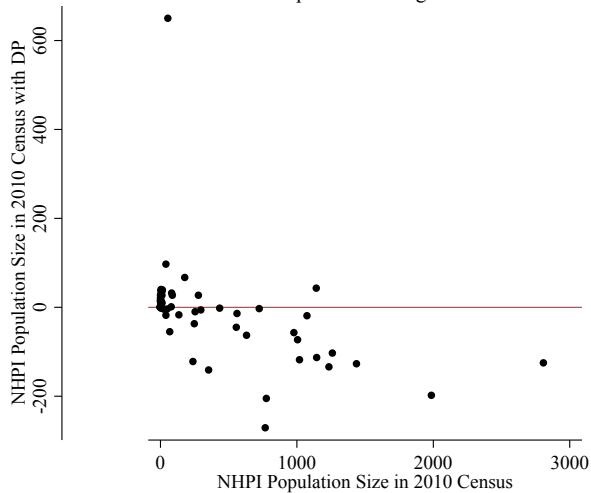
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NHPI In Combination Population Change on Hawaiian Homestead



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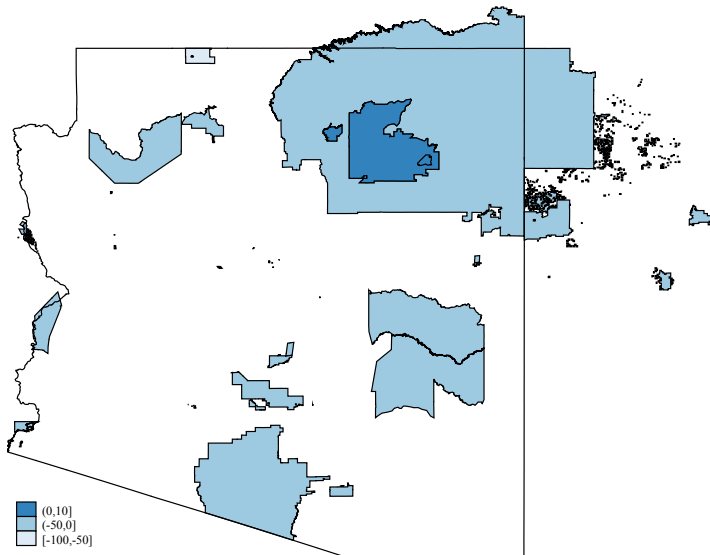
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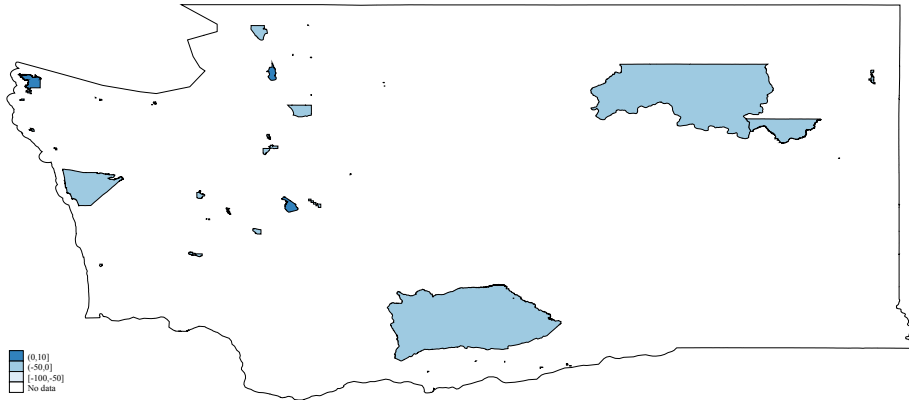
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Percent Difference in Population on AZ Reservations



Percent Difference in Population on WA Reservations



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Recommendations for Differential Privacy and Further Issues

1. Necessary to engage Tribal Governments on useful levels of privacy loss.
2. Unanswered question is what happens to the missing AIANNH population as we aggregate upwards; since the DP process should be neutral at the national level this implies different race/ethnicity assignment.
3. Research privacy loss budget must be allocated to the AIANNH population for future Congressional research reports.
4. Allocation of Privacy Loss Budget for US outlying areas such as Guam, American Samoa and Puerto Rico?

Thank you!

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