

Presenter



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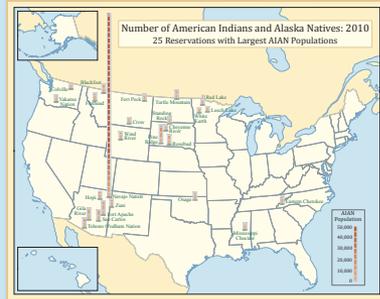
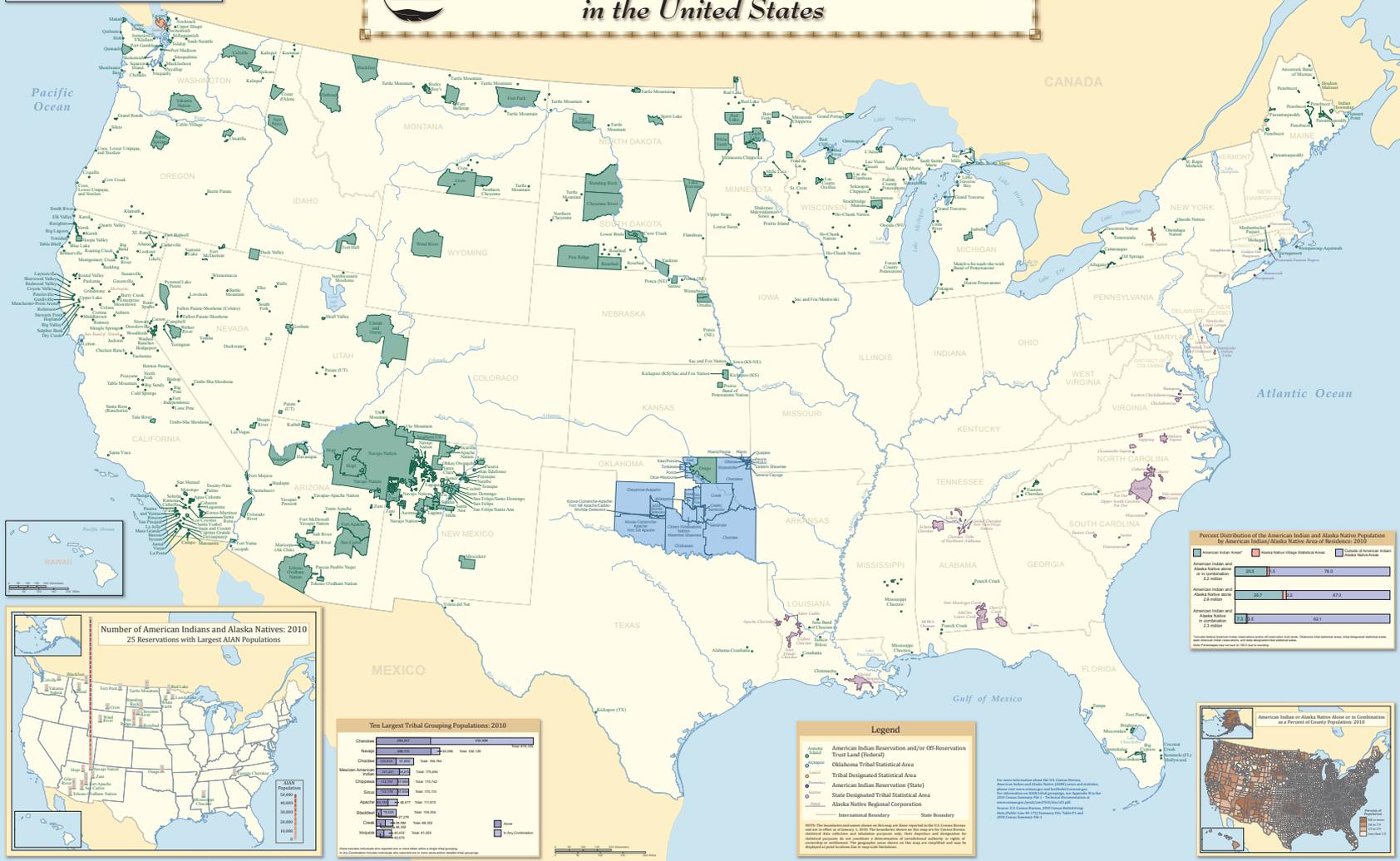
Impact of Climate Change on Traditional Foods, Food Access, Food Security

JULY 2017

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American Indians and Alaska Natives in the United States



Ten Largest Tribal Grouping Populations: 2010

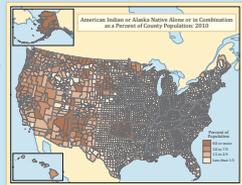
Tribal Grouping	2010 Population	% of Total AIAN Population
Cherokee	349,727	16.1%
Navajo	308,646	14.2%
Chickasaw	282,741	13.1%
Muscogean American	268,147	12.5%
Chippewa	267,532	12.5%
Sisseton	267,173	12.5%
Apache	266,825	12.5%
Blackfoot	266,825	12.5%
Crow	266,825	12.5%
Ho-Chunk	266,825	12.5%

Percent Distribution of the American Indian and Alaska Native Population by American Indian/Alaska Native Area of Residence: 2010

Area Type	Population	% of Total AIAN Population
American Indian or Alaska Native Area	255,121	76.0
American Indian or Alaska Native Area of a Reservation	22,100	6.7
American Indian or Alaska Native Area of a Reservation	307,121	92.7
American Indian or Alaska Native Area of a Reservation	22,100	6.7

Legend

- American Indian Reservation and/or Off-Reservation Trust Land (Federal)
- Alaska Native Village Statistical Area
- Tribe Designated Statistical Area
- American Indian Reservations (State)
- State Designated Tribal Statistical Area
- State Native Regional Corporation
- National Boundary
- State Boundary



Who we are & Where we Live

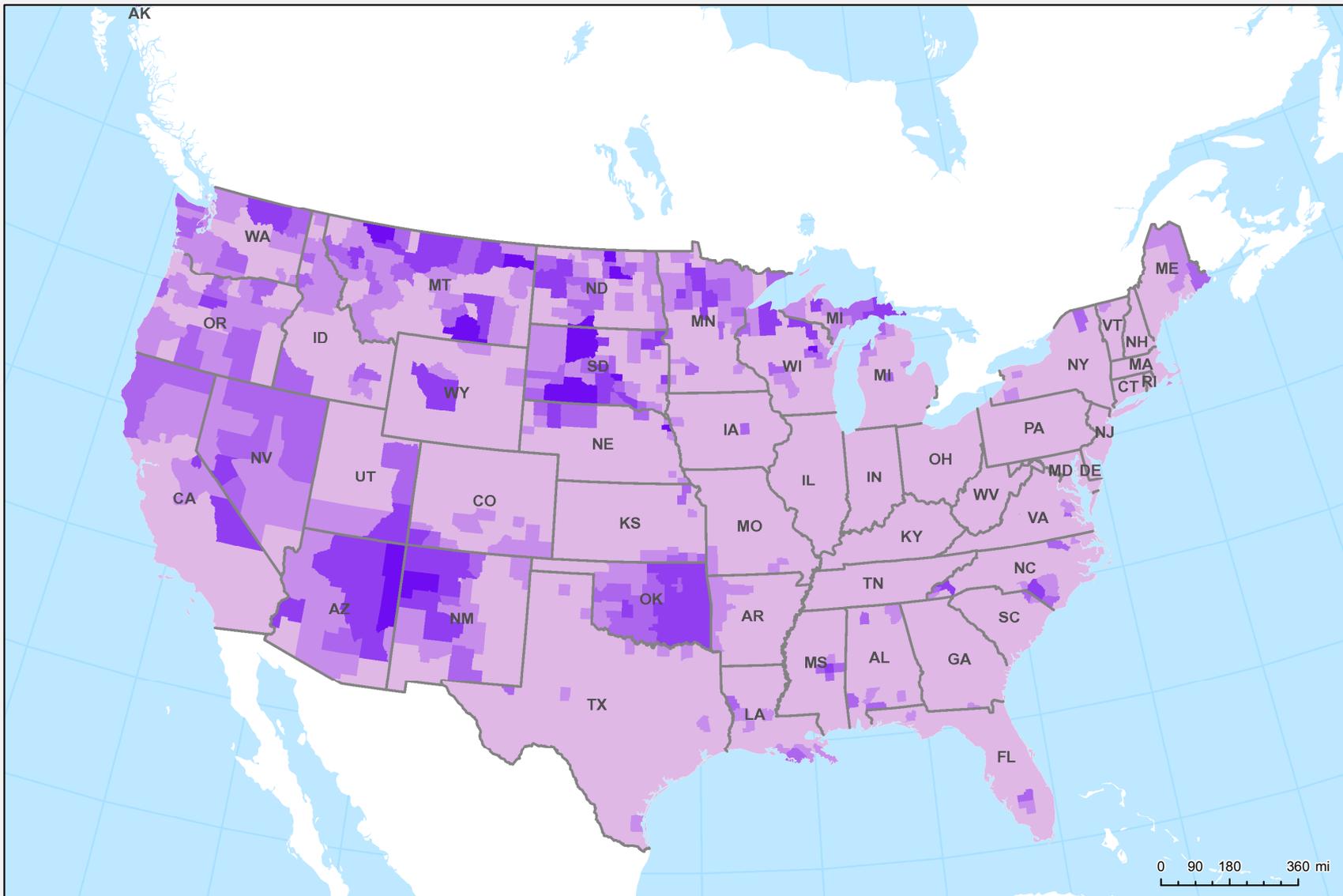
5.2 million American Indians and Alaska Natives registered in the U.S. Census

Approximately 1.1 million live on or near reservations or Native lands, located mostly in the Northwest, Southwest, Great Plains, and Alaska.

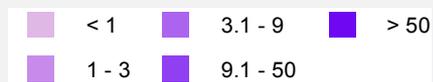
Tribal lands include approximately 56 million acres (about 3% of U.S. lands) in the 48 contiguous states and 44 million acres (about 42% of Alaska's land base) held by Alaska Native corporations.

Most reservations are small and often remote or isolated, with a few larger exceptions such as the Navajo Reservation in Arizona, Utah, and New Mexico, which has 175,000 residents.

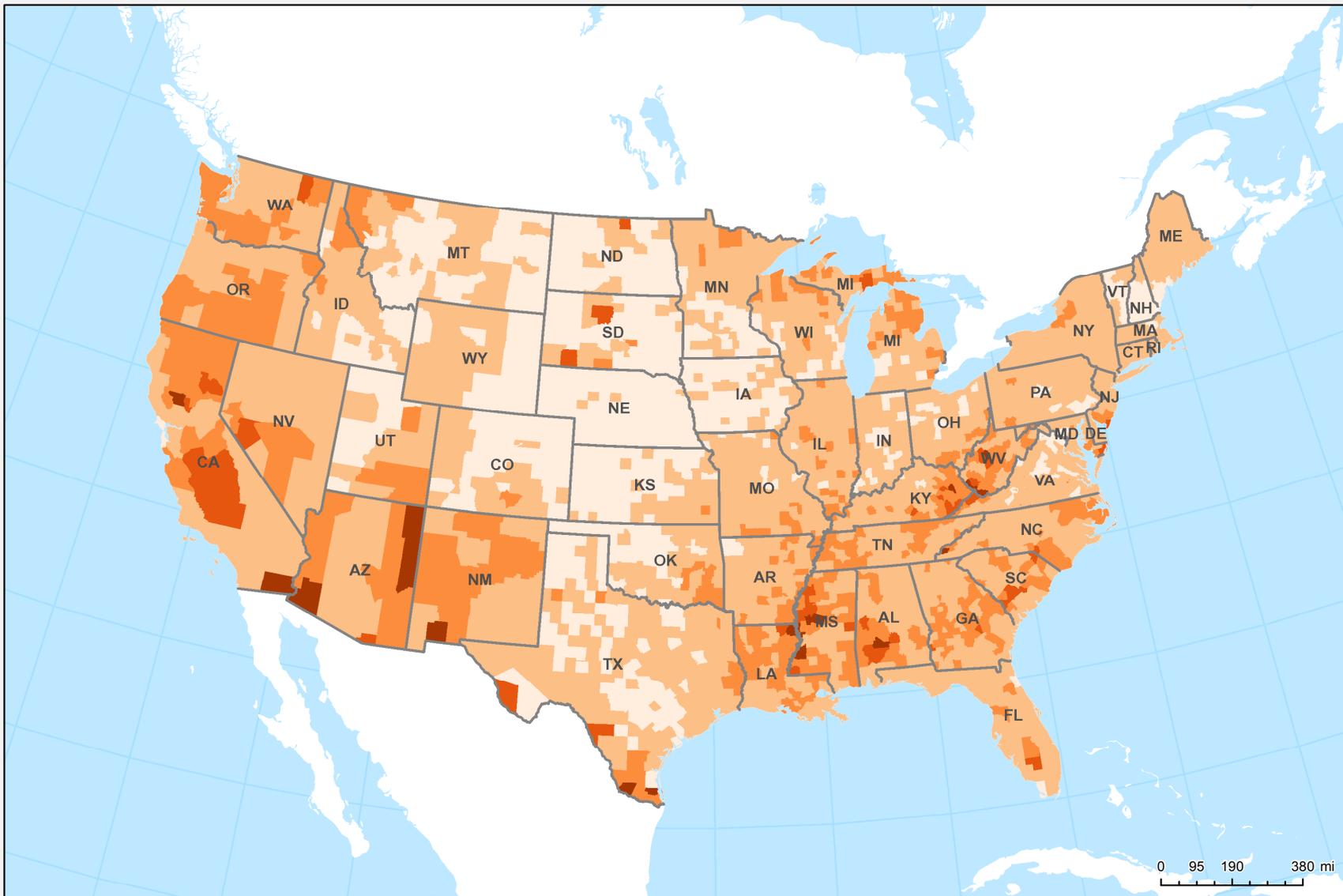
25% of all Native peoples use one or more federal feeding programs; in some communities that % can reach as high as 60-80%; subsistence is vital to food security



% American Indian or Alaska Native, 2010



Date: 4/3/2017 Source: USDA Economic Research Service, ESRI. For more information:
<http://www.ers.usda.gov/data-products/food-access-research-atlas/documentation.aspx>

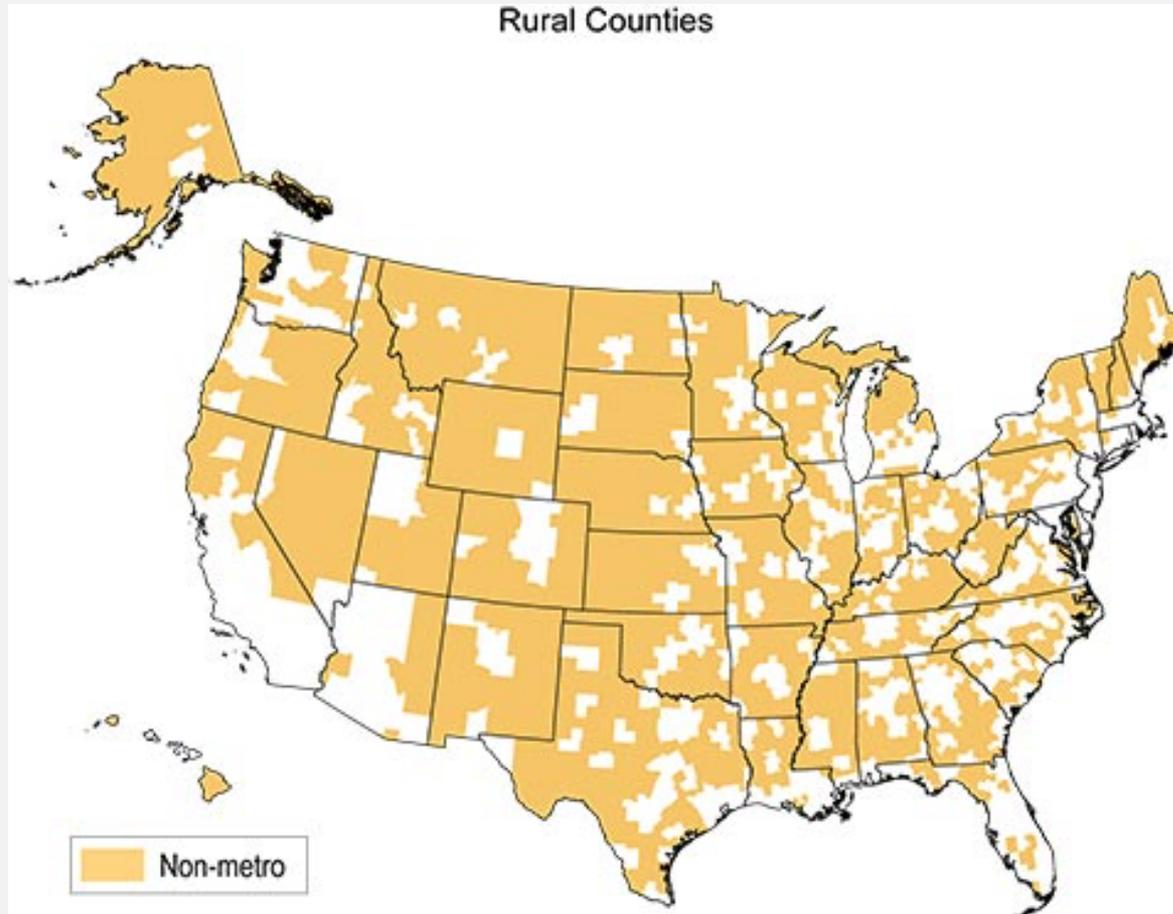


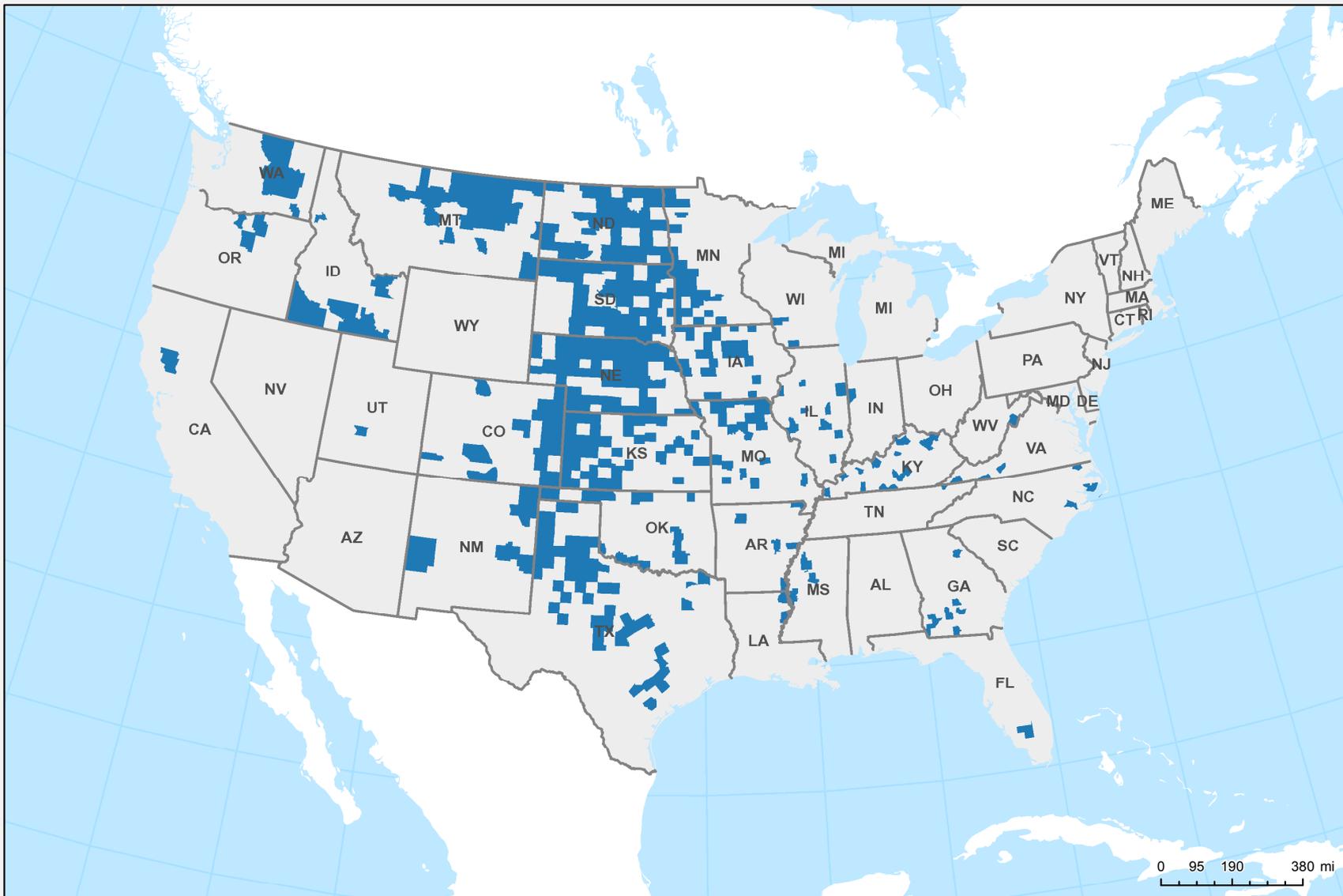
Unemployment rate, 2015



Date: 4/3/2017 Source: USDA Economic Research Service, ESRI. For more information:
<http://ers.usda.gov/data-products/atlas-of-rural-and-small-town-america.aspx>

Rural Counties

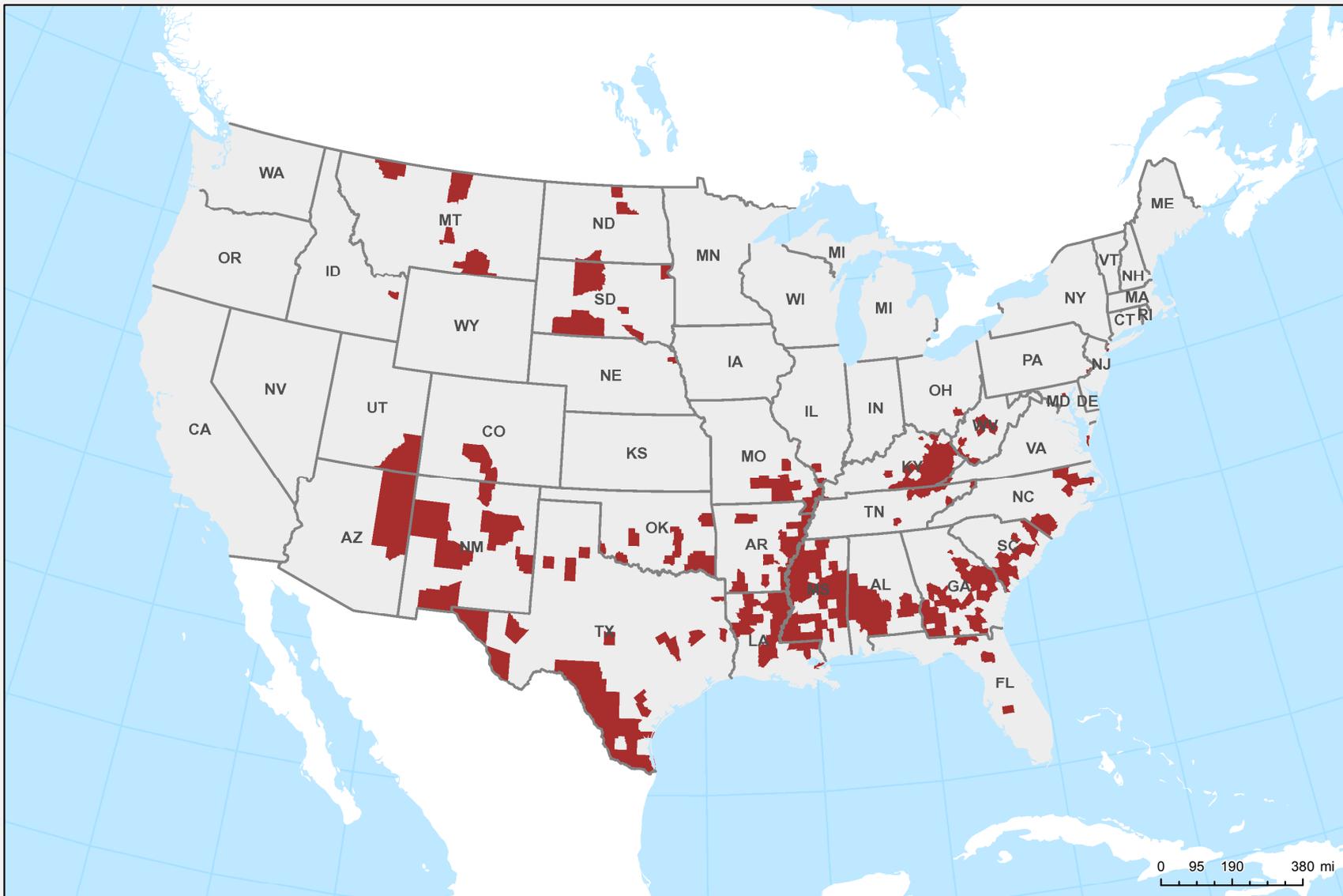




Farming-dependent counties, 2015 edition

 Farming-dependent

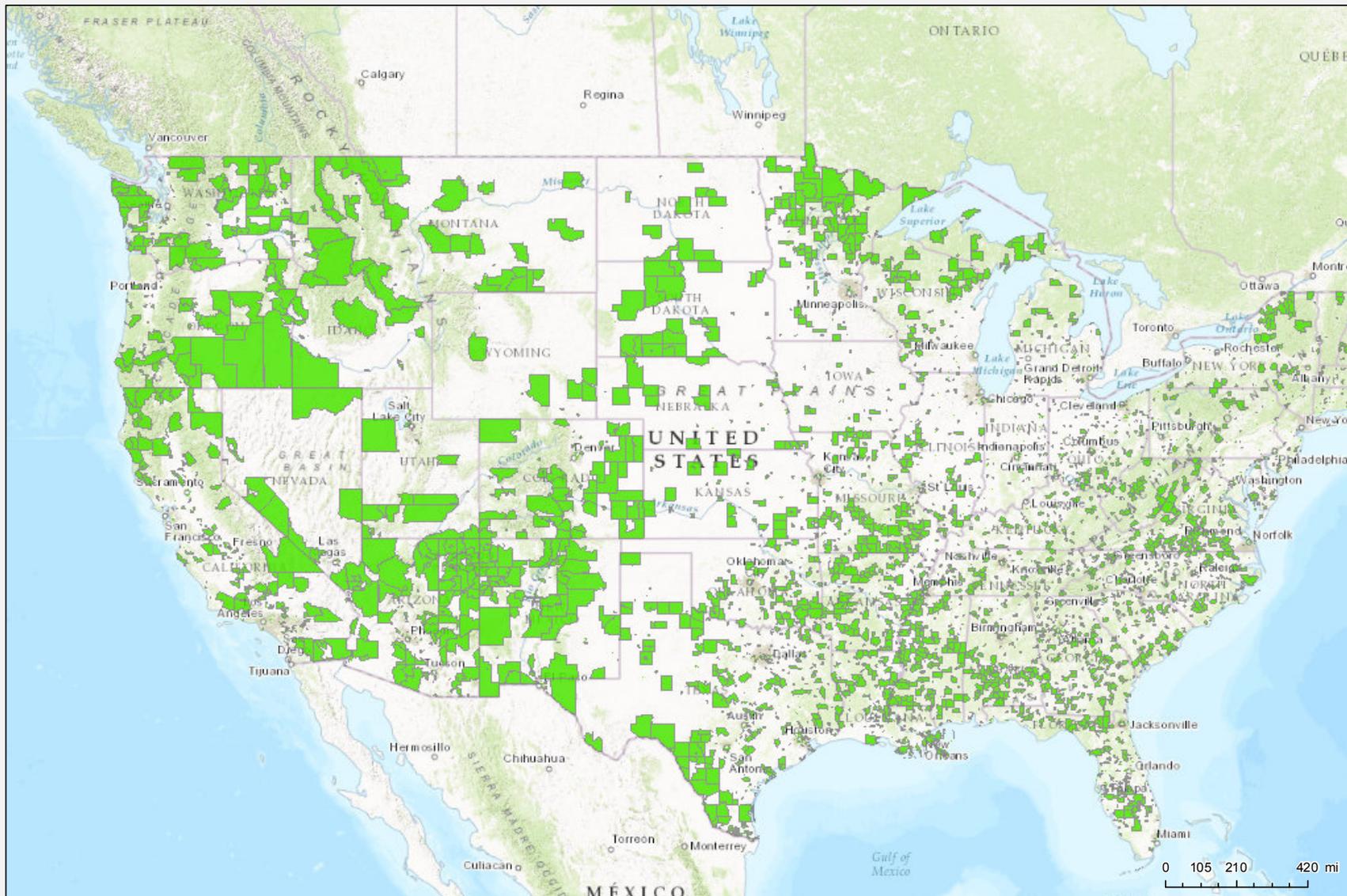
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Persistent poverty counties, 2015 edition

Persistent poverty, 2013

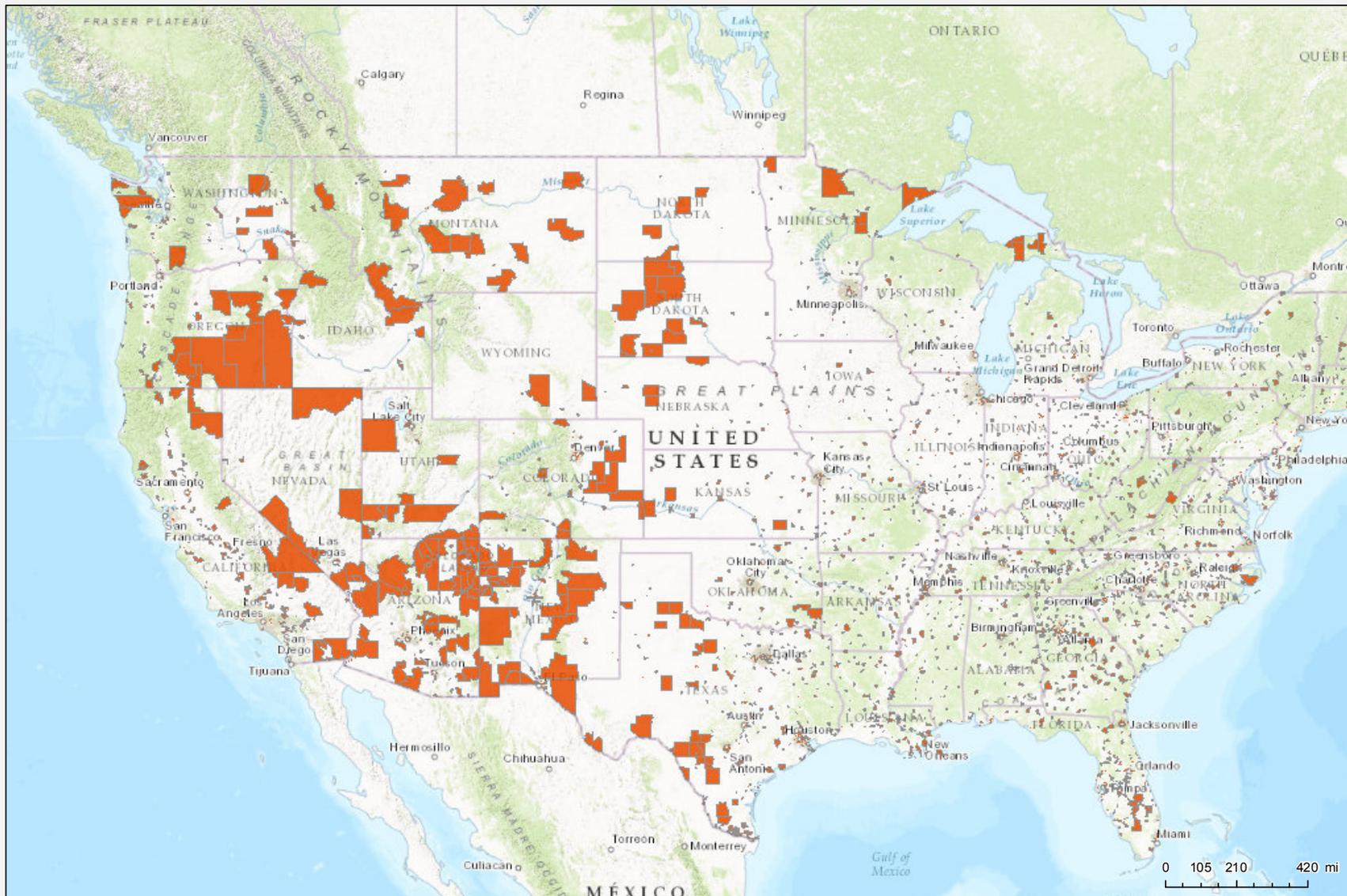
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Low income & low food access: 1/10 Miles

■ LI and LA at 1 and 10 miles 2015

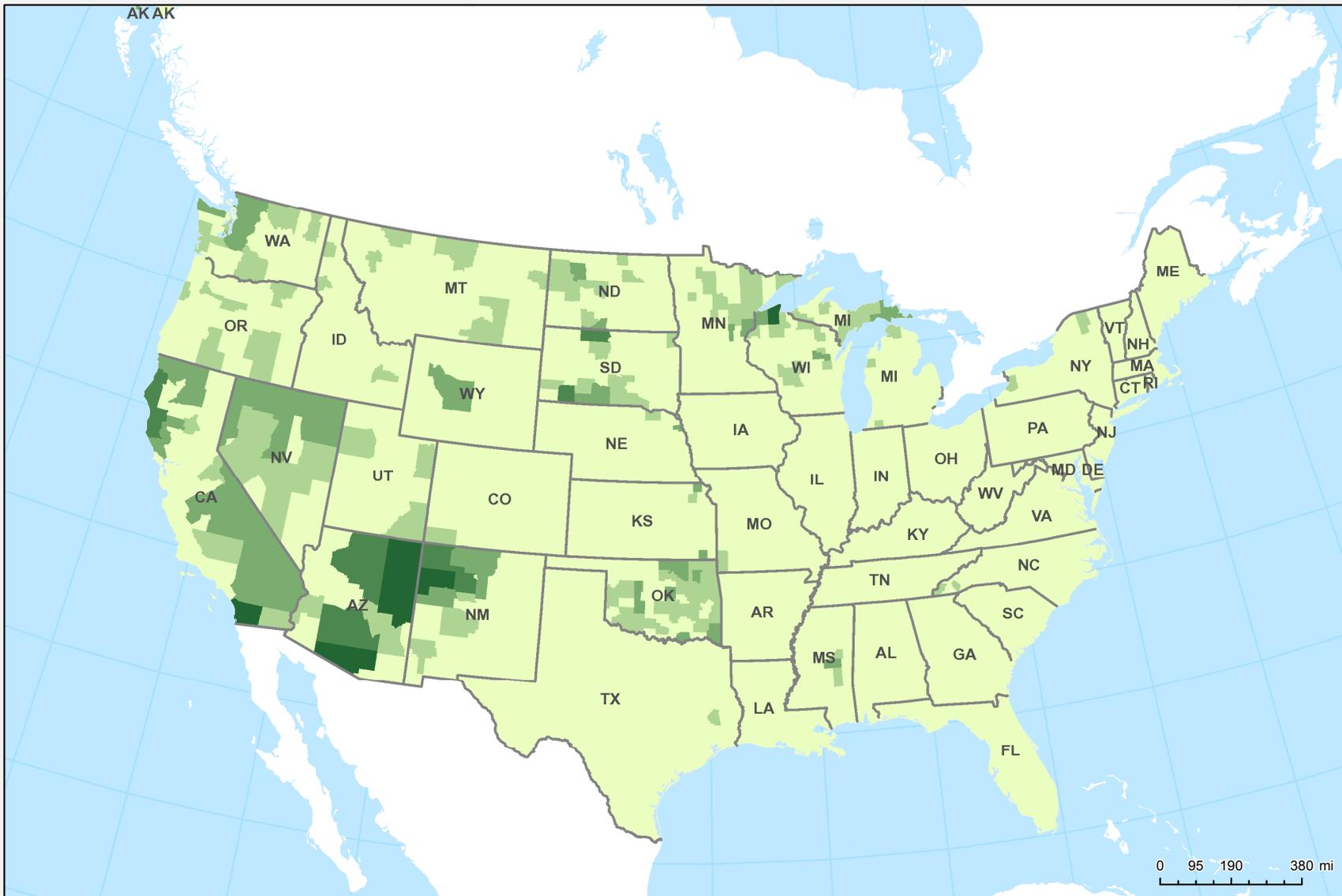
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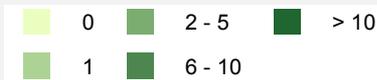
Food Access: Low Income & Low Access at 1/20

 LI and LA at 1 and 20 miles 2015

Date: 4/3/2017 Source: USDA Economic Research Service, ESRI. For more information:
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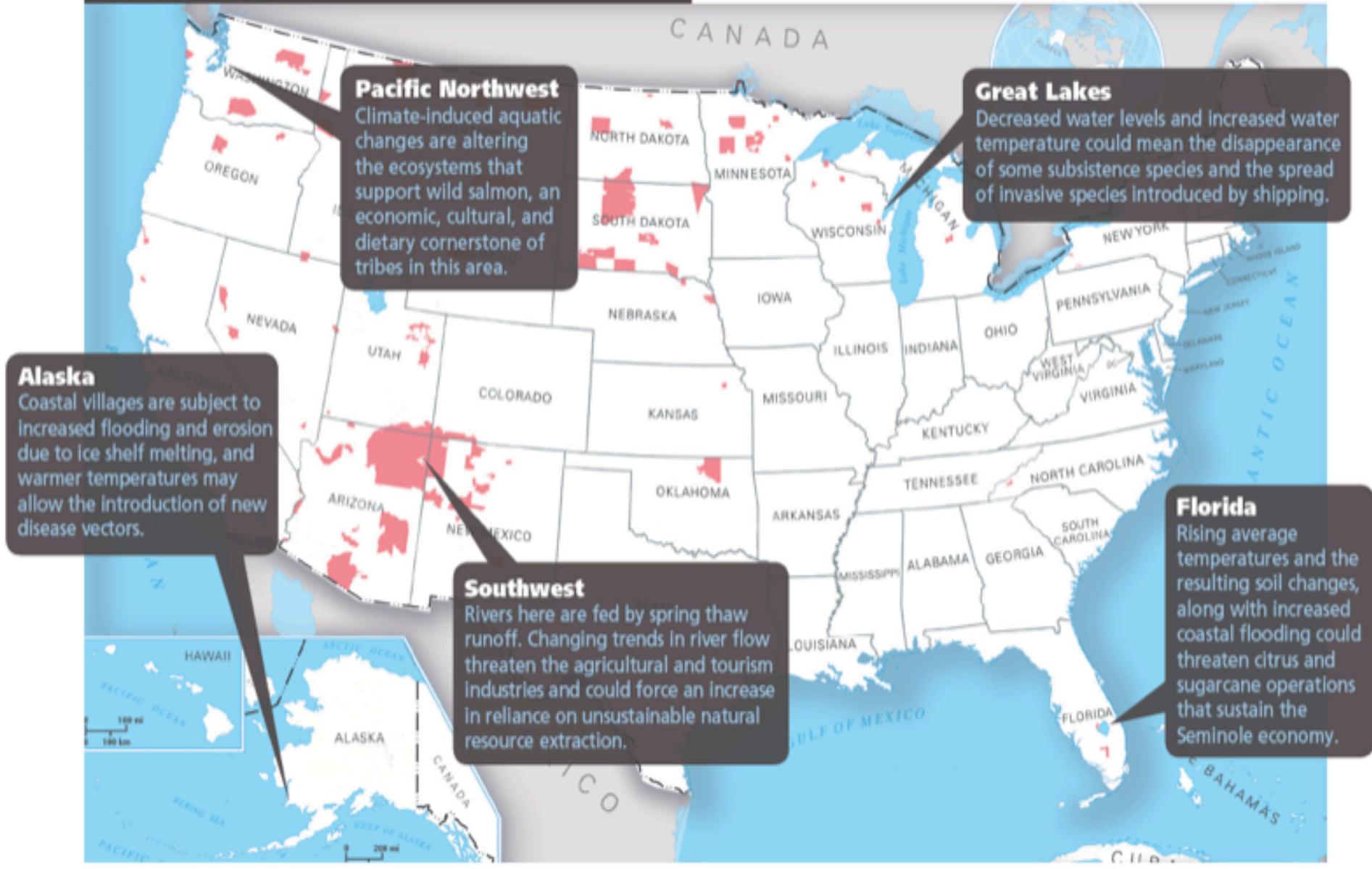


FDPIR Sites, 2012



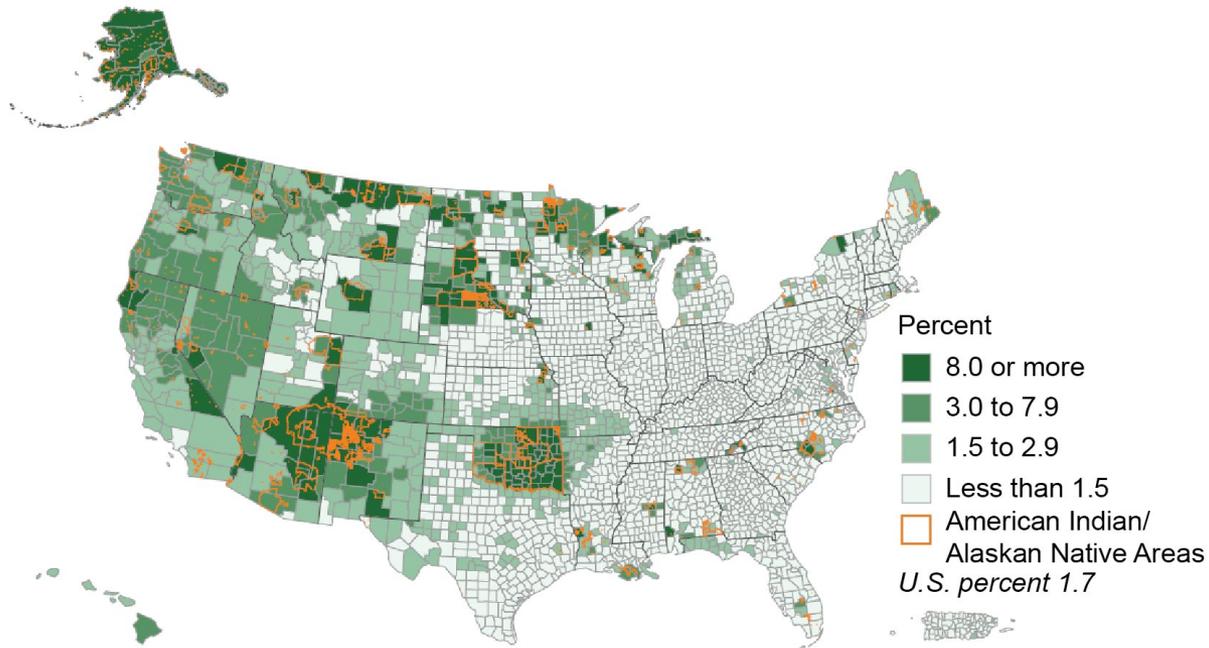
Date: 4/3/2017 Source: USDA Economic Research Service, ESRI. For more information:
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Climate Change Affects Tribes Nationwide

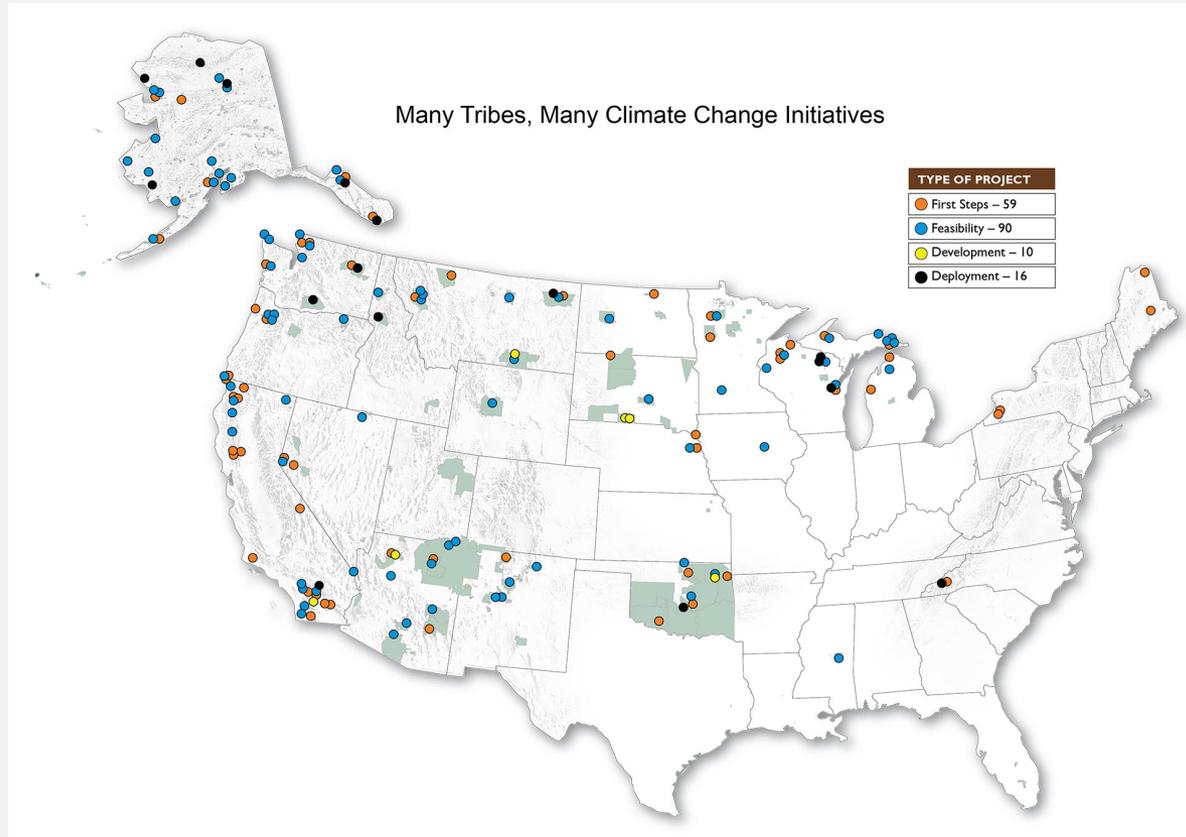


Locations

Indigenous Populations Extend Beyond Reservation Lands



Tribes & Climate Change Initiatives



Key Points

Forest Impacts

Fire Impacts

Food Impacts

Water Quality, Water Quantity

Declining Sea Ice & Thawing of Permafrost

Droughts

- Impact of droughts can be devastating on Tribal communities

Relocation of Communities is Already Occurring

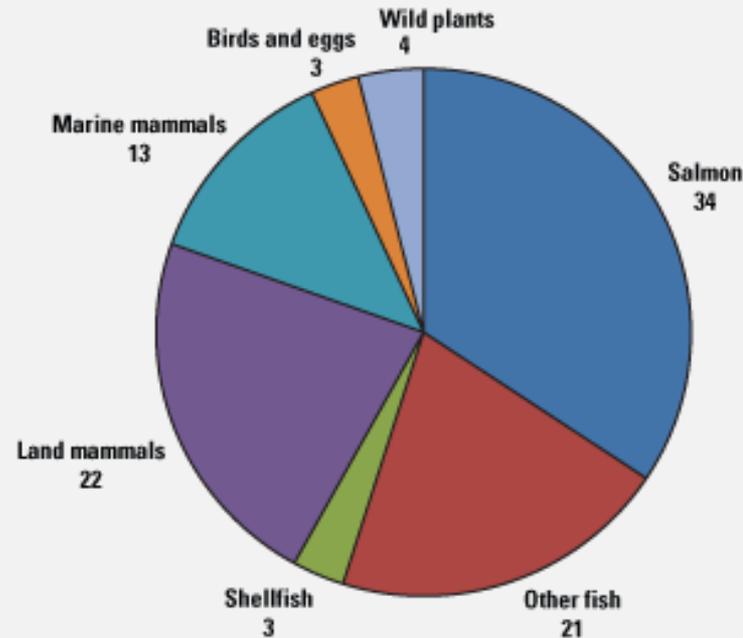
- While there is a general lack of coordination and sufficient policy authorities to instigate and complete relocation, the USDA has relocated communities under its Rural Development and other related authorities in environmental emergencies

Land use changes & land cover changes

Effects on Communities and Ecosystems

Traditional/Subsistence Foods Harvested by Alaska residents (2010)

Composition of subsistence harvest (in percent)
by rural Alaska residents



Benefits of Seafood, Marine and Terrestrial Mammals

Higher nutritional value

Vitamins A, E, C

Omega-3 Fatty Acids

- Motor skills development in infants; brain and retinal development; maturing of the visual functions; general neurodevelopment importance

Energy

Monolipids

Protein

Iron and Zinc

What happens when Traditional Foods are Restricted

Health Risks Increase

- More exposure to saturated fat (cardiovascular disease)
- More exposure to carbohydrates (diabetes)

Loss of nutritional and health benefits

High cost of replacement foods (purchase, distribution, transportation, storage, etc.)

Social, economic and health consequences from subsistence food loss

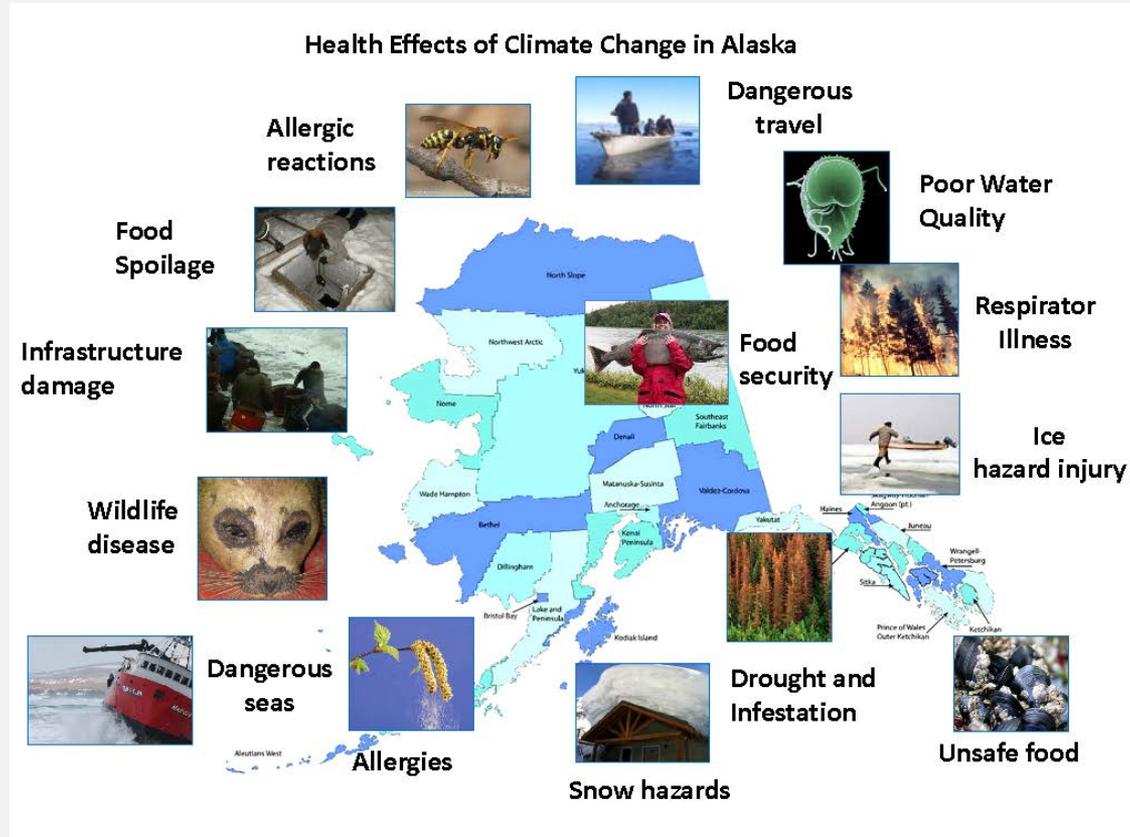
Negative health impacts of dietary and lifestyle changes

Loss of culture

Environmental Change

- Elevated concentrations of POPs in layers of ice 1950s thru 1980s
- Glacier melt stream is a major source of POPs to lakes in Alaska
- Melting of glaciers current source of DDT in local lakes
- Elevated levels of bioaccumulates in fish
- Decline in sea ice volumes
- Decrease in subsistence harvests; impacts on sea mammals; change in predators; changes in feeding areas; subsistence migration patterns shift
- Parts of Alaska 4+ degrees hotter in last 30 years
- Permafrost becoming impermanent
- Glaciers retreating 15 percent every decade
- Hunters/travelers falling through thin sea ice
- Spruce beetles decimating forest areas
- Iditarod moved north due to lack of snow

Health Effects of Climate Change in Alaska



Impacts

- Impact on traditional means of food safety
- Impact on healthy foods access
- Impact on food security for remote communities
- Increase in disease
- Changes in the ecosystem
- Negative impacts on the perpetuation of native culture
- Increased impact of local and outside sources of contaminants on the food and the people
- Continued rise and impact of sports and commercial fishing and hunting
- Human health impacts
- Abnormalities in Subsistence Foods

Policy

Federal Subsistence Board (Alaska)

Food and Nutrition Service (FDPIR program allows for purchase of traditional foods as part of the food package)

The science of nutrition and health guidelines do NOT acknowledge traditional and subsistence foods

Relocation of communities may be necessary in some cases but should be the last resort

Empowering self-governance and self-determination of Tribes

Financial resources necessary to ensure adaptation

Close attention to subsistence harvest timing

Community engagement & Contingency planning

Teach and explore new ranges of adaptability

Close attention to traditional diet

Policy

Engage subsistence hunters, fishermen and gatherers in new ways

Co-management involving Tribes & Resource Management planning

Enforcement limits on sport and commercial fishing

Expand and fully utilize traditional ecological knowledge and community-level monitoring

Tribal consultation

Dramatically change the protocol, policies, regulations, assumptions of all federal feeding programs to adapt to the needs of communities to continue access to foods



School of Law

Indigenous Food and Agriculture Initiative

The nation's first law school initiative focusing on Tribal food law and policy supporting food systems, agriculture and community sustainability

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