



RURAL CLIMATE POLICY PRIORITIES

Solutions from the Ground

The intent of this working document is to describe climate change concerns specific to rural communities in the United States and identify policy approaches that are supportive of on-the-ground solutions. It reflects ideas and input from Rural Climate Network member organizations and other rural organizations, leaders and experts in the U.S. This is a starting point; additional input, perspectives and policy solutions are welcomed, as are questions, inquiries and endorsements. For more information about this document or the Rural Climate Network, email Tara Ritter at tritter@iatp.org.

For an electronic copy of these policy priorities, visit:
www.ruralclimatenetwork.org/policy-priorities.

ENDORSED BY:

- American Sustainable Business Council
- California Climate and Agriculture Network
- CEI Maine
- Center for Rural Strategies
- Environmental and Energy Study Institute
- Farm Aid
- Forest Guild
- Green Dot Project
- Healthy Community Food Systems
- Institute for Agriculture and Trade Policy
- League of Rural Voters
- Main Street Project
- Minnesota Interfaith Power and Light
- National Network of Forest Practitioners
- Northwest Atlantic Marine Alliance
- Ohio Ecological Food and Farm Association
- Permaculture Research Institute Cold Climate
- Pesticide Action Network North America
- Rural Advancement Foundation International - USA
- Rural Advantage
- Sustainable Farming Association of Minnesota
- Sustainable Northwest
- Valencia Soil and Water Conservation District

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PREAMBLE

Rural communities are on the front lines of climate change. Effectively responding to this challenge requires political and on-the-ground responses, and rural communities and resources are critical to both. Policy leaders need to engage rural communities in solutions to climate change, and rural leaders need to be more actively involved in climate policy development and implementation to ensure it meets the needs of all communities.

Rural America encompasses 18 percent of the population but approximately 84 percent of the geography, including most of the natural resources essential for survival and under threat from climate change. Within the rural landscape are also many of the climate solutions we need, including renewable energy resources, forests, farms and rangelands that can capture carbon when managed appropriately, and most importantly, the people and ingenuity required for successfully transitioning to a low carbon economy.

To succeed, climate policy must reflect rural residents' concerns and the solutions they see to the problems their communities face. On average, rural communities are more food and energy insecure and earn less than their urban counterparts. They are also more vulnerable to many expected climate impacts, including energy volatility, extreme weather and infrastructure issues. This is especially true among the poorest rural areas, including many tribal communities and reservations, communities in the Southern Delta and Appalachia, and other areas where long-standing racial and economic inequities exacerbate the already significant divides between rural and urban areas. Policy responses to climate change need to acknowledge and address these inequities so that all rural community members can benefit from a new era of sustainable, just and climate friendly rural development.

To achieve these cross-cutting and transformative outcomes, U.S. climate policy needs to be based upon the following principles:

Resilient

Climate change is the largest systemic crisis our country has faced and its impacts are increasingly unpredictable. To handle such disruption, policy solutions need to focus on increasing the resiliency of our communities, economy, and the natural systems they depend on. We must prioritize climate responses that minimize emissions and community risk. Climate

policy and action must also increase the ability of the nation's farms, towns, people and rural tribal communities to retain their fundamental structure, function, and identity while adapting to a changing climate.

Equitable

Climate policy must be equitable and ensure that all members of society are supported and strengthened. Policies must be constructed and delivered in ways that recognize historical and ongoing discrimination, and work to reduce—not increase—current and long-standing economic, racial, cultural, gender and other forms of inequity.

Diverse, Democratic and Locally Determined

Rural America is diverse in terrains, cultures, people and knowledge. There is no one-size-fits-all climate solution for all rural communities. Therefore, recognition, respect and support of the diversity of rural America must be at the forefront of climate policies. Policies should encompass diverse solutions, utilize locally produced ideas, and respect the unique characteristics, culture and knowledge of each rural community. Local democratic institutions should be accountable to their communities and empowered to deal with local issues and concerns. Local and community ownership of renewable energy and other key resources should be prioritized based on the benefits that accrue to rural economies.

Transformative and Long Term

Renewable and sustainable rural economies will ensure stable food supplies and ample natural resources for the entire country. However, many rural communities will need support in transitioning to sustainable economies. Such shifts are transformative and ultimately result in greater economic diversification and community resiliency, but are often more risky and expensive up front. Climate policy must support approaches that are economically, socially and environmentally sustainable in the long-term, and provide assistance and risk mitigation in making that transition, especially for the most vulnerable and disadvantaged rural communities and residents.



AGRICULTURE || GOAL STATEMENT

Agriculture, as a sector dependent on weather and covering just over half of the U.S. land base, is already impacted by climate change. We support climate change policy that encourages diversity and resiliency of farms and supports fair farmer incomes while withstanding extreme weather. Agriculture has the ability to contribute to the climate solution by sequestering carbon in soil, which is beneficial for both adaptation and mitigation. Therefore, we support appropriate policy mechanisms that reward farmers for implementing regenerative farming systems and carbon sequestering practices such as crop rotations, perennial crop and grazing approaches, riparian plantings and other agroforestry practices, composting and utilizing cover crops. We also support regional food systems, which encourage crop diversity and regionally-appropriate farming practices, more farmers on the land, and fair prices for farmers and fair treatment of farm laborers.

AGRICULTURE || CHALLENGES

Soils

Soil degradation is a leading factor in climate change. It is estimated that the world's cultivated soils have lost as much as 50 percent to 70 percent of their original carbon stock. Loss of soil carbon reduces nutrient availability, overall crop productivity and resilience to drought, flooding and other weather extremes. Reduced soil carbon also impacts landscape hydrology and can lead to increased stream bank erosion, impaired water quality and loss of aquatic habitat and fisheries.

Crops

Temperature and precipitation are two of the largest determining factors of crop yields. When crops are exposed to the increasing temperatures that climate change brings, overall yields will decline. Many regions are already seeing increases in heat extremes, extended heat waves and intense precipitation events leading to yield reduction, soil erosion and increased flooding. Early frosts and droughts are also already occurring as part of a changing climate. These challenges are exacerbated by declining public

investments into traditional seed breeding programs, which could ensure diverse and resilient germplasm so that farmers have varieties adaptable to their varying regions and climates. Traditional seed breeding and on-farm research is jeopardized by the corporate control over our seed supply.

Weeds, disease, and pests

Many weeds, insect pests and plant diseases that thrive in warmer weather are gaining hold in regions previously too cool to support their growth. Monoculture cropping systems, which dominate production agriculture in the U.S., are particularly at risk. Increased temperatures will also bring increased animal disease and parasites, as well as weather-related stress for livestock. This will likely result in greater costs for disease control, cooling, heating and higher levels of livestock mortality. As grain yields are also likely to decline, and most animal feed is made from grain, climate change is expected to result in increased feed costs.

Infrastructure

More extreme weather events will increase wear and tear on community infrastructure, such as roads, bridges and water systems that farmers and rural communities depend upon. As farming is also increasingly technologically focused, poor broadband connections in rural communities will put farmers at a disadvantage.

Farmers and farm labor

As climate change makes crop yields increasingly unreliable, markets become more volatile and farmer incomes become variable, with costs often exceeding prices. Just as the livelihoods of farmers and ranchers are vulnerable to climate change, so are the livelihoods of farmworkers and their families. As climate change worsens and crop failures and seasonal changes increase, so will farmworker job security and their ability to provide housing and basic needs for themselves and their families. In addition, extreme heat is a threat to outdoor workers and will impact farmers, ranchers and farmworkers significantly.

AGRICULTURE || RECOMMENDATIONS

- Support regenerative farming systems that ensure fair incomes for farmers and increase crop diversity, perennial groundcover, rotational grazing systems, and other natural approaches to increase soil health and soil organic matter.
- Significantly decrease or eliminate the use of synthetic fertilizers to reduce associated greenhouse gas emissions and environmental pollution.
- Encourage collaborative, participatory and farmer-led research on diverse crop and livestock production systems and the most appropriate crops to grow given regional soil types, markets, water and nutrient needs.
- Invest in historical plant and seed breeding methods to ensure diverse and resilient germplasm that is accessible to everyone.
- Promote energy conservation; increased energy and water use efficiency; and on-farm solar, wind and other renewable energy production as ways to lower agricultural greenhouse gas emissions.
- Support livable incomes and safe work conditions for farmers and farmworkers.



CONSERVATION || GOAL STATEMENT

Rural areas contain most of the nation's open land and remaining wild areas, often interspersed with agriculture, forestry and other productive areas. We support climate policy that protects biodiversity, wildlife habitat, and natural spaces in both working and non-working landscapes. We also encourage work with the conservation community on climate education and action to build collaborative opportunities for continued conservation efforts in the face of climate change. Conservation policy that recognizes and supports the unique relationships that many Native American communities have with nature is of particular importance.

CONSERVATION || CHALLENGES

Ecological effects

Climate change is shifting the ecology of wilderness areas, refuges, forests, rivers, lakes and other natural areas. Species of flora and fauna that rely on certain ecosystems to survive will be threatened as ecosystem conditions change. These habitat changes are irreversible, and in many cases will require a reconfiguration of conservation mandates that were created for pre-climate change conditions. Climate change will include effects such as warming streams to the point that they cannot support certain fish species, and turning tundra to shrub land. Such dramatic changes will require new types of conservation policies and approaches. In addition, many species of plants and animals will go extinct, decreasing biodiversity and disrupting ecosystem balance.

Land use

Conservation and traditional community rights have long been usurped or reduced by private development interests. Tourism, recreation, agriculture and energy production all contribute to local economies but are often in direct conflict with conservation goals and the rights of Native Americans and land-grant communities. Coordination between farmers, federal and state agencies, conservation biologists, energy developers, private land

holders, local municipalities, tribal communities, and other communities that depend upon and provide stewardship of the land is critical in determining how diverse wildlife and ecosystems can be protected and enhanced while adapting to and mitigating the effects of climate change.

CONSERVATION || RECOMMENDATIONS

- Rethink conservation planning practices to reflect changes in ecosystems due to climate shifts. Plans should focus on adaptive capacity, specific threats to particular ecosystems, monitoring for information and preparing for new environments.
- Support strong and consistent conservation efforts across both public and private lands, including working landscapes.
- Increase public climate education to build support for increased conservation efforts.
- Work with tribes to maintain and strengthen the integrity of culturally important sites and the treaty rights that provide access to hunting, fishing, ricing, and other traditional activities.
- Ensure that tribes and land-grant communities retain property rights in the face of land use changes.



EDUCATION || GOAL STATEMENT

Over 40 percent of all schools in the U.S. are in rural areas and about 30% of all U.S. students attend rural schools. We support climate policy that values rural schools and students by considering longer travel distances and increased infrastructure maintenance costs as well as the challenges of an increasing number of school closings and late starts. Investing in school transportation options and appropriate programming including ESL, long distance education and climate curriculum will set up rural schools and students to thrive in the face of climate change.

EDUCATION || CHALLENGES

Roads and infrastructure

Climate change is expected to increase the severity and frequency of storms, which will increase the instability of already challenging bus systems and building maintenance costs. Students and teachers tend to live further away from schools in rural areas, making obstructed roads an even larger obstacle than they are in urban areas, where alternate forms of transportation are more readily available. Communities with inadequate broadband connections cannot offer online classes or distance learning as an option when extreme weather events hinder transportation to schools. In addition, rural school buildings may need weatherization and energy efficiency improvements to support comfortable learning environments as the climate changes.

School closings

Weather days - when schools have days with late starts, early closes, or no school at all - may increase as climate change worsens. This will put pressure on schools' ability to educate students and prepare students for the increasing number of standardized tests. As weather days increase, there will be less face-to-face time in the classroom, limiting the amount of curriculum teachers can fit into their courses.

Demographics

Rural high school completion rates vary widely across regions. The bottom quarter of rural counties for high school completion include two thirds of all persistent poverty counties in the nation. In addition, two thirds of the counties with the lowest high school completion rates are in the South, including many rural Appalachian counties. Lower education rates are correlated with persistent poverty, and worsening poverty and population losses result in declining local tax bases. This adversely impacts school funding and leaves many rural counties ill-prepared to adapt to climate impacts. Furthermore, some rural populations are increasing as immigrant workers move into the communities for economic opportunities driven by land use changes. Their children are enrolling in rural schools, helping rural schools maintain a student body, but changing the services that schools need to offer, such as ESL programs.

Lack of rural-focused climate change curriculum

Because rural schools have lower student enrollment than urban schools, there are fewer teachers. Therefore, rural teachers often teach multiple subjects throughout the day. This puts pressure on them to develop curriculum for multiple courses that meets Department of Education standards. Agricultural Education courses provide opportunities for experiential learning and leadership training, but these programs are in short supply across the country. These problems with teacher capacity and course offerings result in lost opportunities to engage students in subjects such as environmental science and alternative energy systems that will help develop solutions to local and global climate challenges.

EDUCATION || RECOMMENDATIONS

- Provide incentives for teachers in rural areas to increase teacher retention.
- Increase transportation support in rural areas to build, maintain and repair roads and ensure quick recovery from emergency situations.
- Strengthen broadband connections in rural areas to enable online and distance education, especially when transportation to school is challenged by extreme weather events.
- Ensure that rural schools, especially those in persistent poverty counties, have the capacity and resources to respond to the shifting demographics of their student body.
- Adjust school funding formulas to reflect the needs of rural and low-income schools.
- Support the development and rapid uptake of rural-appropriate climate science and agricultural education curriculum to put students at the forefront of addressing climate resiliency in their communities.



ENERGY || GOAL STATEMENT

Not only do rural areas use more energy per capita, but they also bear most of the costs and risks associated with fossil fuel and renewable energy production. We support policy that encourages transitions to energy efficient, renewable energy economies in rural communities. Transitioning to renewable energy will provide local jobs that are long-term, provide more healthful working conditions and bolster local economies. In addition to locally appropriate renewable fuels and power production and transmission, we also encourage policies that support energy efficiency measures in rural communities, where residents tend to have higher energy costs despite lower average incomes. By investing in efficient buildings and increasing access to affordable and renewable energy sources, rural communities will benefit from increased local economic opportunities and decreased energy poverty.

ENERGY || CHALLENGES

Energy Conservation

Buildings and vehicles in rural communities are less efficient on average than their urban counterparts. Also, farms and ranches have specialized and often higher energy needs than other businesses. Longer transportation distances, low availability of affordable energy sources and older building stock contribute to higher consumer energy prices in rural communities, which is compounded by lower average household incomes. There is a need for a strong focus on improving the energy efficiency of the rural built environment.

Heating and Cooling

Heating and cooling makes up 40 percent of building energy use on average. Increased extreme weather events and rising temperatures due to climate change will cause heating and cooling demands to rise, increasing energy demand and straining the aging electricity grid. Rural households have options to shift away from traditional heating and cooling systems towards renewable systems. Solar PV and thermal systems, geothermal

heat pumps and other more efficient systems can reduce energy costs and greenhouse gas emissions, but may be costly up front.

Electricity: Generation and Distribution

Rural communities must have reliable energy access in the face of climate change impacts. Both new and existing energy and transmission systems will need to be resilient to withstand climate change impacts, as well as provide consistent, reliable and affordable power. New energy infrastructure, including renewable energy, should be proposed and supported based on verifiable public need, not by profit-based interests. Community distributed, on-site and small-scale renewable energy production provide some of the best opportunities for rural communities and residents to have reliable and affordable energy access.

Transportation and Transportation Fuels

Rural communities consume more fuel (gasoline and diesel) per capita than urban areas. Dependence on fossil fuels contributes to economic uncertainty and energy poverty. Vehicle miles travelled and fuel consumption can be reduced through better land use planning; more transit access systems; energy efficient cars, trucks and farm equipment; and use of renewable fuels and technologies to reduce rural communities' dependence on oil. Furthermore, rural America hosts most of the U.S. biofuels industry and must carefully balance this production with local infrastructure and community needs and concerns. Regionally appropriate crops, water and nutrient management, and plant efficiencies must be prioritized in order to meet greenhouse gas goals while supporting community vitality.

Energy Extraction and Refining

Rural and Native American communities bear the majority of social and environmental costs associated with energy extraction, including unconventional oil and gas drilling (fracking), coal and uranium extraction, oil and gas refining, pipeline siting, rail cars, gravel and sand mining and other aspects of energy extraction. Land use, infrastructure siting, water quality and quantity, air quality, seismic activity, human health and strained social services are all concerns related to the extraction and refining process. Policies must prioritize the needs and choices of local communities concerning both the permitting and siting of energy production and extraction.

ENERGY || RECOMMENDATIONS

- Build and retrofit infrastructure that is more resilient to climate change impacts like storms, floods, heat waves and power outages.
- Provide incentives for clean energy infrastructure and community-based energy projects, prioritizing localized renewable energy production.
- Support energy efficiency to lower greenhouse gas emissions and reduce the cost of use for both buildings and vehicles.
- Support programs that help rural residents, farms, ranches, rural small businesses, and rural electric cooperatives boost their use of renewable energy and increase energy efficiency.
- Provide assistance for rural communities with extraction-based economies during the transition to clean energy.



FISHERIES || GOAL STATEMENT

Climate change and ocean acidification pose unprecedented challenges to fishermen, to tribal communities dependent on the water, and to government agencies that manage fishery resources. In light of these challenges, we support climate policy that addresses the root causes of climate change, fisheries science that is responsive to a changing and more variable environment, and fisheries management choices that promote adaptation, diversity and resilience among American fishing fleets.

FISHERIES || CHALLENGES

Shifting fish stocks

As water temperatures rise, wild fish stocks are expected to shift northward, shift into deeper waters or experience a general increase or decrease in biomass. In a given locale, fishermen may lose access to traditional fish stocks and/or gain access to new stocks as fish move out of or into their area. Some boats may be able to respond to distributional shifts by following fish further north or offshore; others may choose to move their boats to other ports or switch to different fisheries. This may mean purchasing new permits or fishing quota from other fishermen. For tribal fishermen and women, this poses a challenge because treaty rights often restrict gathering within set boundaries.

Maintaining or rebuilding fish stocks to historically-defined optimal levels by controlling fishing efforts may become impossible as the necessary environmental conditions no longer exist. Additionally, catch quotas for many inshore species are allocated to states on a historical basis. Therefore, as fish stocks shift northward, fishermen in northern states may not be allowed to harvest these stocks. Additional challenges include consolidation of fishing fleets, low ex-vessel prices and high fuel costs, and the increasing expense of complying with regulatory requirements designed to reverse overfishing.

Ocean acidification

Lowered seawater pH can have negative impacts on shellfish and shell-forming varieties of phytoplankton and zooplankton (the organisms that

form the base of the marine food web). Ocean acidification is caused globally by increased CO₂ emissions and locally by nutrient and organic carbon inputs and natural upwelling patterns. Ocean acidification can catalyze massive die-offs of larval and juvenile shellfish. Tribal subsistence and commercial shellfish gathering are also at risk from ocean acidification.

FISHERIES || RECOMMENDATIONS

- Increase research on the effects of climate change and ocean acidification on fisheries, including collaborative research that involves fishermen in data collection and observation.
- Incorporate climatic variables into models used to set catch rates.
- Reduce land-based causes of ocean acidification, such as nutrient inputs, and support methods to remediate these inputs, such as protection and restoration of sea grass and seaweed beds.
- Support tribal innovations to promote resiliency of shellfish populations and fisheries of tribal importance.
- Educate consumers about climate impacts on fisheries and the opportunity to change their seafood choices to support that industry as it is in transition.
- Promote regulatory flexibility that enables managers and fishermen to quickly respond to both declines and increases in fish stocks.



FORESTRY

FORESTRY || GOAL STATEMENT

In the United States, forests occupy approximately one third of the country's total land area. We support climate policy that contributes to the resilience of forest ecosystems and supports their ability to respond to disturbances such as pest outbreaks, fires, human development and drought. This can be achieved by restoring the natural role of fire in healthy forests; managing wildfires for resource benefit; restoring forests appropriately; protecting traditional livestock grazing rights; working with tribes on innovative and collaborative solutions; and supporting woody biomass production that is regionally appropriate, locally controlled, and benefits communities with forest-based economies.

FORESTRY || CHALLENGES

Shifting habitats

Warming temperatures and other climate-related changes will alter growing conditions and could shift the geographic ranges of some tree species, causing suitable habitats of some trees to move northward or to higher altitudes. Shifts in species distributions will change the makeup of vegetative communities overall and may lead to greater expansion of both native and non-native invasive species capable of capturing sites quickly. For communities with forestry-based economies, adapting to changing forest composition and the need to manage and harvest new tree species will present difficulties.

Pests and invasive species

Warmer temperatures create hospitable environments for invasive species and insects. These disturbances can reduce forest productivity and change the distribution of tree species. Insect outbreaks often defoliate, weaken and kill trees. Rising temperatures may enable some insects to lengthen their breeding season and increase their ability to build populations to destructive levels more quickly while also expanding their range. Invasive plant species can displace important native vegetation because invasive species often lack predators and are generally more tolerant to a wider range of environmental conditions than native plants.

Wildfires

Warm temperatures and drought conditions can increase the extent, intensity and frequency of wildfires. Increased fire risks will be most pronounced in arid forests of the western United States; however, increased risks will occur anywhere fire-prone forests occur, and there is no region of the country which can be assumed to be safe from greater fire risk as a result of climate change. Warmer spring and summer temperatures coupled with decreases in water availability will result in more hazardous fuels from woody materials in forests and increase the risk and intensity of wildfires. This not only harms forests, but causes a public health hazard for surrounding communities.

Watershed health

The majority of freshwater used in the U.S. originates in forests. A warming climate will make our most precious natural resource ever scarcer. Watershed health and productivity is directly related to forest health. A degraded watershed is not only less resilient to disturbances like wildfire, but may also produce less water.

FORESTRY || RECOMMENDATIONS

- Continually shift wildfire management policy away from full suppression and towards managing wildfires for resource benefit, prescribed fire and forest restoration.
- Work with tribes and tribal communities to implement partnerships in managing forest lands.
- Uphold traditional livestock grazing rights to manage vegetation, protect soil and water, and protect the stability of communities that depend on range resources.
- Reform federal wildfire suppression budget structures so that wildfire response activities are treated like other natural disasters.
- Provide federal agencies with the tools and resources needed to successfully manage wildfires while investing in the health of forests and other lands.
- Where ecologically appropriate, encourage research and implementation of locally-controlled woody biomass and agroforestry practices.



HEALTH || GOAL STATEMENT

Public health planning and tracking are crucial to protecting the health of rural communities from the impacts of climate change. We support policies that enable local, state and national public health agencies to address climate change impacts in rural communities as part of their core scope of work. We support climate policy that bolsters broadband access that is necessary for hospitals and healthcare infrastructure to thrive, supports the appropriation of funding to offer medical care and health services to rural residents in their own communities, and provides support for recruiting and retaining skilled staff. We support the involvement of public health and health care professionals in climate mitigation and adaptation planning to ensure that climate policies consider the health of rural communities.

HEALTH || CHALLENGES

Public Health

Climate change brings a slew of public health challenges that will impact rural communities. As food prices rise due to water and agricultural challenges, diets could become less healthy, especially among low income households. Extreme weather may make outdoor recreation and accessing exercise facilities more difficult, potentially leading to more sedentary lifestyles. Abnormal and extreme heat can increase heat illness (particularly among outdoor workers, the very young and the elderly), which can significantly reduce productivity and safety for outdoor workers. Climate change will also increase smog, ozone and particulate matter, which could worsen asthma, respiratory diseases and cardiovascular disease. In addition, most energy production happens in rural areas, so rural residents and many Native American communities are disproportionately impacted by the pollution coming from coal plants, fracking and mining operations. Furthermore, climate and precipitation changes impact the reproduction, development, and population dynamics of many organisms, and therefore could increase mosquito-, soil-, water-, and food-borne disease.

Health Care Infrastructure

Rural healthcare providers often face low margins and capital limitations, which limits their ability to invest in infrastructure and equipment. Increased storms and extreme weather events can cause flood damage or failing electricity, which many rural healthcare providers are unequipped to address. Furthermore, the distribution of rural populations make disaster and medical relief services more difficult because ambulances may need to travel longer distances. Assisted living centers, nursing homes and long-term care facilities face similar challenges. Health care systems are significant energy users and can themselves contribute to climate change if not designed to conserve energy, use renewable energy and reduce other forms of waste and environmental impacts.

Mental Health

As climate change impacts worsen, rural areas will face increased mental health challenges. In addition to pre-existing conditions and a disproportionately high representation of veterans in rural areas, climate change may increase levels of anxiety and depression. Severe drought and floods can result in financial impacts for communities who depend on natural resources for their livelihoods, which exacerbates stress and mental health problems. Accessible mental health services will be central to the survival of communities impacted by climate change, as will building community cohesion and resilience.

HEALTH || RECOMMENDATIONS

- Provide opportunities to educate and train the public health workforce to ensure the capacity of local health departments to plan for, track and respond to the health effects of climate change.
- Construct efficient and resilient rural healthcare facilities where many services are located in the same place.
- Bolster emergency response systems to fare better in extreme weather events.
- Increase access to broadband to make registration easier for health care, tele-health services, digital medical records and connection with other rural health providers.
- Focus on comprehensive healthcare that includes access to preventative care and mental health services.
- Promote insurance policies that cover local health care and do not require travel to urban centers.



INFRASTRUCTURE || GOAL STATEMENT

Rural communities need roads, water management systems, buildings and communications and energy infrastructure that match their needs. We envision new investments, design and planning that will result in more resilient systems for rural communities. We support local ownership and control of public infrastructure to empower rural communities to make decisions that benefit their unique citizens and economies.

INFRASTRUCTURE || CHALLENGES

Water and Waste

Climate change impacts will increase the difficulty of ensuring clean and reliable water for all communities. Increased precipitation and flooding from storms challenges the capacity of water treatment facilities and water-carrying infrastructure such as plumbing, irrigation systems and stormwater drainage systems. Climate change may also decrease water availability as drought increases in severity and frequency, unrelieved by diminishing snowpack. Clean water supplies will be further endangered by warming temperatures, which make bodies of water more suitable for aquatic invasive species, including algae. Municipal solid waste collection and transportation will also face challenges because of climate change; increased temperatures and floods may require changes to landfills so that they do not overfill with gas or become saturated with water.

Transportation

Transportation infrastructure is critical to the livelihoods of rural Americans. Vital components of the national transportation system reside in or pass through rural areas including ports, airports, rail terminals, roads, canals, bridges and tunnels. Anticipated changes in precipitation, temperature and storm patterns will impact the reliability and capacity of these systems to operate as necessary. In addition to being affected by climate change, transportation systems are central contributors to climate change through the use of fossil fuels. Petroleum consumption accounts for 93% of the nation's transportation energy use. Rural communities are disproportionately impacted by transportation infrastructure challenges

because homes and businesses are spread further apart, and public transportation systems are lacking. In particular, seniors, low-income and disabled persons may be unable to reach necessary resources.

Broadband and Telephone

Over a quarter of rural U.S. residents do not have access to reliable, secure and fast broadband connections. Broadband is increasingly a necessity for successful businesses, hospitals, schools, transportation, personal connectivity and emergency response systems. However, unreliable or nonexistent broadband service in many rural communities makes it difficult to remain competitive in a fast moving economy and to meet community health and safety needs. Phone service and radio signals are also less reliable in rural communities, making emergency response systems ineffective. Emergency response systems will need to be more reliable as storms and temperatures become more severe, requiring improved broadband, phone and radio signals in rural areas.

Energy

Energy infrastructure—including transmission lines, oil refineries, pipelines and power plants—will be impacted by climate change. Storms are the most frequent cause of power outages, and climate change will bring increased and more extreme storms. Furthermore, intensified energy demands due to extreme temperatures will challenge the current energy infrastructure.

Buildings

Shifting climatic conditions, including temperature, humidity, air pollution and sea level rise each require new building materials and best practices to ensure resilient structures. Housing stock in rural communities, including many prefabricated homes built before 1950, are particularly susceptible to fire, wind and water damage. Much of the rural housing stock is aging, resulting in low energy efficiency and high utility costs that will be exacerbated by extreme weather. Rising costs for energy and heating/cooling will also be a problem without increased focus on weatherization, energy efficiency and renewables (including on-site production), especially in low-income communities. Housing shortages may occur as a result of immigration and migration, leading to longer commutes and lack of affordable and adequate housing.

INFRASTRUCTURE || RECOMMENDATIONS

- Protect and restore river basins, watersheds and ecosystems.
- Use green roofs, rain gardens, roadside plantings, porous pavement and rainwater harvesting systems to manage water supplies.
- Use building materials that are storm-ready and energy efficient.
- Continue research on storing and destroying municipal solid waste.
- Promote transportation infrastructure that anticipates changing environmental conditions and enables appropriate emergency response systems.
- Encourage energy development and transmission systems planning that prioritizes climate resilience, efficiency and local benefit.
- Provide support to tribes in maintaining infrastructure and disaster response planning in rural tribal communities.
- Ensure fast, secure, reliable broadband access for all Americans.



RECREATION AND TOURISM || GOAL STATEMENT

Many parts of rural America are highly valued for tourism and recreation opportunities, and climate change will impact these rural economic drivers. We support climate change policy that works to preserve the tourism and recreation opportunities present in rural communities while respecting natural and cultural boundaries and providing educational opportunities to learn about the changes underway.

RECREATION AND TOURISM || CHALLENGES

Severe weather events

In many rural areas with natural and recreational attractions, tourism is large part of the economy. Climate change brings more severe and unpredictable weather events, making it difficult for rural communities to predict tourism income from season to season. Snow-based activities like skiing and snowmobiling are dependent on adequate snowfall, water-based sports and activities are impacted by drought and floods, and wildfires and floods affect hiking trails and beaches. Severe weather events may deter visitors and make the destinations difficult to maintain. Decreased tourism brings negative economic consequences for the rural communities surrounding these natural attractions.

Shifting ecology

As climate change causes landscapes to shift, the attractions of parks and preserves will change. Wildlife are expected to both be reduced in population and to shift locations, impacting hunting and fishing opportunities. In addition, the seasons for certain weather dependent recreational opportunities could shorten or change, causing overall community income from those activities to decrease.

RECREATION AND TOURISM || RECOMMENDATIONS

- Combine differing land use desires into solutions such as agro-tourism.
- Support proactive planning to establish new recreation and tourism options that are adaptive to climate change and that provide educational opportunities on the changes underway.
- Protect culturally important and ecologically sensitive areas from development.
- Ensure that tribes and land-grant communities retain property rights in the face of land use changes.

RESOURCES FOR FURTHER READING

For an electronic copy of these policy priorities, visit:
www.ruralclimatenetwork.org/policy-priorities.

AGRICULTURE

- National Sustainable Agriculture Coalition (Climate Change and Agriculture: Recommendations for Farm Bill Conservation Program Implementation)
<http://sustainableagriculture.net/wp-content/uploads/2014/03/NSAC-Recommendations-on-Climate-and-Conservation-Program-Implementation-6-25-14.pdf>
- National Sustainable Agriculture Coalition (Climate change website)
<http://sustainableagriculture.net/our-work/conservation-environment/climate-change/>
- California Climate and Agriculture Network (Ready... Or Not? An Assessment of California Agriculture's Readiness for Climate Change)
<http://calclimateag.org/our-work/ready-or-not/>
- California Climate and Agriculture Network (A Sustainable Agriculture Perspective on the California Carbon Market)
<http://calclimateag.org/wp-content/uploads/2012/01/Briefing-Carbon-Market-Principles-to-post.pdf>
- Farm Aid (Q&A: Farmers and the dead zone)
<http://www.farmaid.org/site/c.qI5lhNVJsE/b.2739785/apps/s/content.asp?ct=13225375>
- Farm Aid (Q&A: What are farmers doing about climate change?)
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