

# Measuring National Environmental Health Association Member Attitudes, Awareness, and Behaviors on Climate Change: Results From Three Consecutive Annual Surveys

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**Editor's Note:** The National Environmental Health Association (NEHA) strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature this column in partnership with ecoAmerica, Climate for Health.

This column provides a summary and trend analysis of select survey results from the American Climate Metrics Survey administered to NEHA members in 2016, 2017, and 2018. NEHA is a partner of Climate for Health, a coalition of health leaders committed to caring for our climate to care for our health. Founded by ecoAmerica, Climate for Health offers tools, resources, and communications to demonstrate visible climate leadership, inspiring and empowering health leaders to speak about, act on, and advocate for climate solutions. In this column, the authors will share insights and information. The conclusions in this column are those of the authors and do not necessarily represent the official position of ecoAmerica, Franklin County Public Health, or NEHA.

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The National Environmental Health Association (NEHA) partners with ecoAmerica's Climate for Health program to build visible national leadership on climate solutions and engage all leadership, members, and stakeholders within the NEHA community. As part of

its partnership, ecoAmerica's American Climate Metrics Survey was administered to NEHA members in 2016, 2017, and 2018. This column provides a summary and trend analysis of select survey results, including NEHA member awareness of climate and health issues and relevance for NEHA's cli-

mate actions and policies. The full data set can be found at [www.neha.org/eh-topics/climate-change](http://www.neha.org/eh-topics/climate-change).

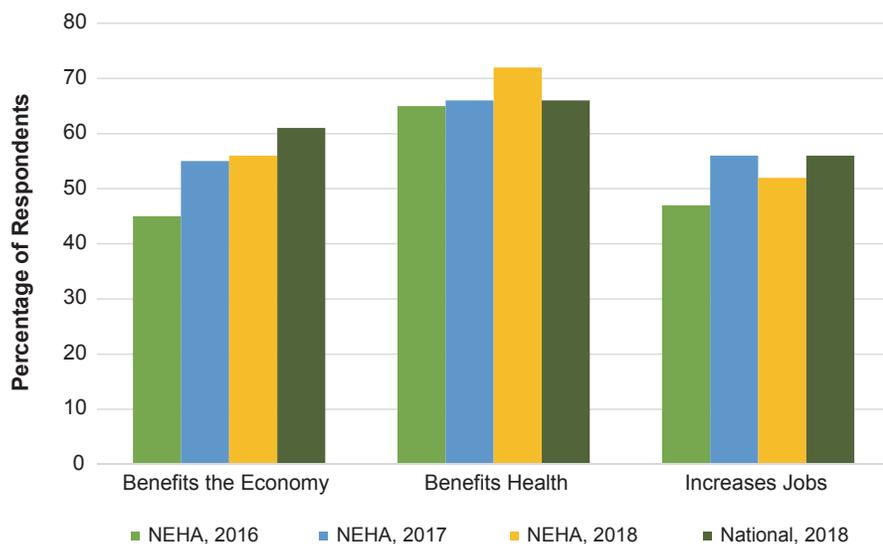
Several recent reports document climate impacts on health, including the *Fourth National Climate Assessment*; *The 2018 Report of the Lancet Countdown on Health and Climate Change: Shaping the Health of Nations for Centuries to Come*; and *Climate Change, Health, and Equity: A Guide for Local Health Departments*. These reports all conclude that the changing climate has severe effects on human health and disproportionately affects already vulnerable populations: children, older adults, those experiencing low socioeconomic status, and those with preexisting respiratory and heart conditions (Rudolph, Harrison, Buckley, & North, 2018; U.S. Global Change Research Program, 2018; Watts et al., 2018).

Increases in extreme weather, such as hurricanes, contribute to long-term health impacts and significant economic costs. The health impacts are broad:

- increases in heat-related illness or death;
- respiratory and cardiovascular illness and death from poor air quality (e.g., ozone, pollen, mold, and particulate matter such as dust and wildfire smoke) (U.S. Global Change Research Program, 2018);
- injuries and drowning from floods;
- mental health effects from property loss and trauma; and
- foodborne and waterborne diseases; and
- vectorborne diseases from increasing vector habitats and mating seasons for ticks and mosquitoes (e.g., Zika virus, West Nile virus, Lyme disease).

FIGURE 1

**Respondents Who Indicated “A Lot” or “A Little” to the Question: If the United States Took Steps to Help Prevent Future Climate Change, How Would It Affect the Economy, Health, and Jobs?**



NEHA = National Environmental Health Association.

All these health impacts are within the purview of the mission of environmental health professionals (EHPs) to protect the public’s health, prevent further harm, and support health, equity, and well-being.

**Survey Methods**

EcoAmerica works with Lake Research Partners to design and implement an annual national survey—the American Climate Metrics Survey—to measure American behaviors, attitudes, and beliefs on climate change. The 2018 survey was conducted online from September 14–18, 2018, yielded a total of 800 responses, and had a margin of error of ±3.5%, weighted to statistically represent the U.S. EcoAmerica also works with partners to administer the survey to their members.

Now in its third consecutive year, NEHA’s survey was conducted online from September 13–28, 2018, and was distributed by e-mail to NEHA members with 124 respondents. The sample might not be representative of NEHA membership. Survey administrators did not have the ability to measure the margin of error for the NEHA survey. Similar methodol-

ogy was used in prior years to administer the survey, yielding 383 and 277 NEHA respondents in 2017 and 2016, respectively.

This column examines select trends in the NEHA survey results over 3 years but does not infer statistical significance. Nonetheless, comparing NEHA responses to national data is an important tool for NEHA climate change resources, opportunities, and policy positions.

**Trend Analysis of NEHA Survey Results**

**Health**

When NEHA members were asked, “If the United States took steps to help prevent future climate change, would it affect your health,” a vast majority (72%) said it would improve their health, more so than national respondents (66%) (Figure 1). For climate change impacts, NEHA respondents were most concerned about increased asthma, allergies, and cardiorespiratory disease from exposure to air pollution (highest concern for 34% of NEHA respondents). Interestingly, those most concerned about increased injury,

trauma, and mental health impacts from extreme weather rose from 19% in 2017 to 25% in 2018 and about a quarter of respondents were most concerned about increased vectorborne diseases from ticks and mosquitoes in the last 2 years. NEHA respondents generally have more awareness of the health benefits of preventing climate change than Americans as a whole.

**Trust**

Trust for guidance on climate change from health professionals remains high and constant; NEHA respondent trust has increased from 72% to 77% since 2017, while national trust in health professionals remains at 62% (Figure 2). These numbers bolster the idea that EHPs are critical messengers for climate change and health.

**Energy**

Survey participants were asked whether the U.S. should produce more or less of specific energy sources. About 80% of NEHA respondents across all 3 years think the U.S. should produce less energy from coal, 20% higher than national results (Figure 3). Consistently, 95% of NEHA respondents think the U.S. should be producing more energy from wind and solar sources, with 77% saying we should produce much more and just over half thinking the U.S. should support natural gas production.

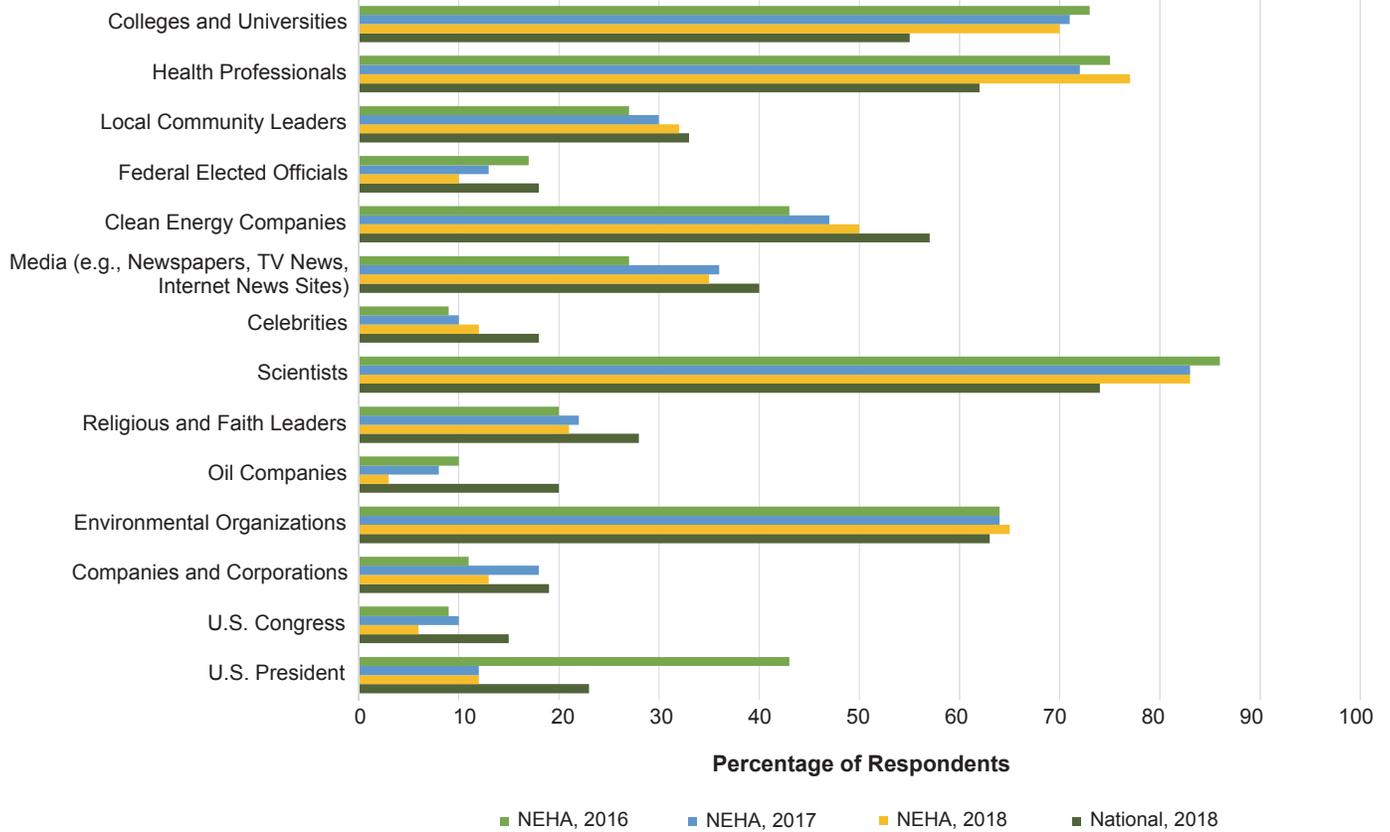
Year-over-year support for oil fluctuates in intensity but the overall message is clear: NEHA members want less oil production with 65%, 75%, and 72% of NEHA respondents from 2016–2018 agreeing, compared with 48%, 42%, and 48% of national respondents, respectively (Figure 3, combination of “some-what less” and “much less” percentages).

NEHA respondents are split on nuclear energy. In 2018, 46% said that the U.S. should produce more nuclear energy compared with 35% of national respondents, and 37% prefer less nuclear energy compared with 52% of national respondents. NEHA respondents have, however, decreased their preference for more nuclear energy from 2017 and 2016 (51% and 48%, respectively).

Clean energy is now cheaper than coal or nuclear power. For the past couple of years, over two thirds of the new utility-scale power generation capacity in America and the world have come from clean energy (Shahan, 2016).

FIGURE 2

**Respondents Who Indicated “A Lot” or “Some” to the Question: As a Source of Guidance About Climate Change, How Much Do You Trust Each of the Following?**



*Note.* The wording changed from “trust as a source of information” to “trust as a source of guidance” in 2018. NEHA = National Environmental Health Association.

Among all energy sources, most NEHA respondents believe that natural gas is the lowest cost of energy at twice the national rate. Although slightly increasing, only 27% understand that wind and solar energy sources are most cost effective at half the national average (from 21% to 27% in 2016 and 2018, respectively). Only 2%, 8%, and 10% believe oil, coal, and nuclear are the cheapest, respectively, and a consistent 20% are not sure. These results can help NEHA identify areas for education and training opportunities on clean and renewable energy sources.

**Urgency and Action**

Half (49%) of NEHA respondents believe they will personally be harmed by climate change,

71% say it will harm people in the U.S., and 77% say it will harm the world’s poor. The key to motivating NEHA members and EHPs toward adaptation and mitigation efforts is to connect awareness of climate change (83% agree) to relevancy in their personal lives.

**Discussion**

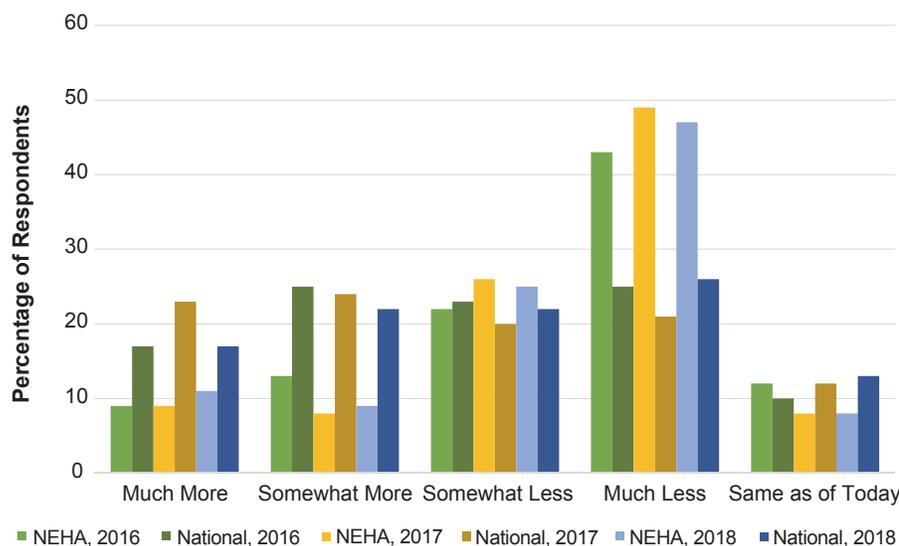
Communities must act swiftly and decisively to begin adapting to the current environment while also mitigating future climate damages. EHPs can help communicate the dangers of climate change and provide expertise and guidance toward solutions that can include: designing and developing the built environment to reduce greenhouse gas emissions and accommodate active and public

transportation, implementing vector control measures, establishing cooling centers, retrofitting aging buildings, conserving water and developing rainwater storage systems, waste diversion and reuse, and utilizing clean and renewable energy (23rd Conference of the Parties, 2018; Younger, Morrow-Almeida, Vindigni, & Dannenberg, 2008).

EHPs need to serve as a trusted, nonpartisan voice in local, regional, and national policy decisions. They can advocate on behalf of their communities and vulnerable populations on the importance of adaptation and mitigation initiatives. EHPs are part of the local community, know its needs, and can respond quickly. They must lead by example and incorporate awareness, mitigation, adap-

FIGURE 3

**Responses Regarding Oil Production Based on the Prompt: For Each of the Following, Please Indicate if You Think the United States Should Be Producing Much More, Somewhat More, Somewhat Less, Much Less, or the Same Amount of Energy From Each Source as of Today**



NEHA = National Environmental Health Association

tation, and resilience objectives into their regular activities, such as risk assessment, surveillance, education, outreach, and evaluation, and for vulnerable communities.

In *The 2018 Report of the Lancet Countdown on Health and Climate Change*, 27 leading academic institutions, the United Nations, and intergovernmental agencies agreed that a lack of progress in reducing emissions and building adaptive capacity threatens the natural systems we depend on. The nature and scale of the response to climate change will be the determining factor in shaping the health of nations for centuries to come (Watts et al., 2018). NEHA has already begun to internalize this challenge and is publicly committed to working towards 100% clean energy by 2030 (National Environmental Health Association, 2018).

Survey limitations include limited sample sizes, a decline in participation in 2018, and self-selection bias. Furthermore, the survey does not ask why participants choose their answers. There were several notable events

between 2016–2018, including a national election and an increase in media coverage of extreme weather events. These events, however, cannot be definitively tied to a shift in responses.

NEHA and ecoAmerica, as well as other groups, are developing and disseminating climate and health tools and resources for EHPs, including best practices, regional and local climate projections, communication guidance, mental health impacts, and impacts to children’s health and other at-risk communities. As EHPs are first and second responders and see the impacts in their communities, it is critical for them to continuously learn and communicate about climate and health issues and impacts and the appropriate mitigation and adaptation initiatives. NEHA and ecoAmerica’s climate and health tools and resources, including a climate change success story video highlighting local communities and a climate change and emergency preparedness white paper, are available at [www.neha.org/eh-topics/climate-change](http://www.neha.org/eh-topics/climate-change). 🌱

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### References

23rd Conference of the Parties to the United Nations Framework Convention on Climate Change. (2018). *Mitigation, adaptation and resilience: The three pillars of the response to global warming*. Retrieved from <https://cop23.com/fj/mitigation-adaptation-resilience/>

National Environmental Health Association. (2018). *NEHA declaration on 100% clean energy by 2030*. Denver, CO: Author. Retrieved from <https://www.neha.org/node/60434>

Rudolph, L., Harrison, C., Buckley, L., & North, S. (2018). *Climate change, health, and equity: A guide for local health departments*. Oakland, CA and Washington, DC: Public Health Institute and American Public Health Association. Retrieved from [https://www.apha.org/-/media/files/pdf/topics/climate/guide\\_section1.ashx?la=en&hash=2ADD9E5229247C1CE16053B2394D92503AD693D6](https://www.apha.org/-/media/files/pdf/topics/climate/guide_section1.ashx?la=en&hash=2ADD9E5229247C1CE16053B2394D92503AD693D6)

Shahan, Z. (2016, December 25). Low costs of solar power & wind power crush coal, crush nuclear, & beat natural gas. *CleanTechnica*. Retrieved from <https://cleantechnica.com/2016/12/25/cost-of-solar-power-vs-cost-of-wind-power-coal-nuclear-natural-gas/>

U.S. Global Change Research Program. (2018). *Impacts, risks, and adaptation in the United States: Fourth national climate assessment, volume II* (pp. 512–538). Washington, DC: U.S. Government Publishing Office.

Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Belesova, K., Berry, H., . . . Costello, A. (2018). The 2018 report of the *Lancet Countdown on health and climate change: Shaping the health of nations for centuries to come*. *The Lancet*, 392(10163), 2479–2514. Retrieved from <https://www.thelancet.com/climate-and-health>

Younger, M., Morrow-Almeida, H.R., Vindigni, S.M., & Dannenberg, A.L. (2008). The built environment, climate change, and health: Opportunities for co-benefits. *American Journal of Preventive Medicine*, 35(5), 517–526.