

EXTENSION CLIMATE ADAPTATION NEEDS ASSESSMENT

An activity of the project: *Coordinating Climate Outreach in the Great Lakes Region* as part of the Great Lakes Regional Water Program

Illinois Results (n=23)

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Adapting to a changing climate

and associated extreme weather events is a critical challenge for communities and the national Extension system. Community decision-makers and Extension educators often have both diverse opinions and uncertainty about how to best address climate change – sometimes compounded by budget challenges and life-threatening risks. To help increase educator capacity in this area, a team of 17 Extension professionals from Land Grant and Sea Grant Extension in six Great Lakes states, and staff from the National Oceanic and Atmospheric Administration (NOAA), and River Network, 1) developed a set of core competencies for community outreach professionals addressing climate science and climate adaptation in urban and urbanizing areas and 2) completed a climate adaptation needs assessment based on the core competencies (results featured here).



Illinois Members of the Coordinating Climate Outreach Initiative Team:

Molly Woloszyn, Illinois-Indiana Sea Grant;
Abigail Derby, The Field Museum; Momcilo Markus, University of Illinois

The science-based core competencies list provides consistency and focus for adult education and outreach efforts. The list, created by climate scientists and educators, is available on the Great Lakes Regional Water Program website (at <http://go.wisc.edu/j4f29e>).

The purpose of the needs assessment was to determine Extension educators' ability and need to teach climate change and urban adaptation strategies. It was sent to Land Grant Extension community development and non-agricultural natural resource educators in the six-state Great Lakes Region and members of the Great Lakes Sea Grant Network (which also includes NY and PA) in fall, 2012. The University of Wisconsin Environmental Resources Center's Evaluation Unit administered the online survey with the help of state program leaders and a Sea Grant assistant director. The overall regional response rate was 43% (214/494).

In Illinois, 53% (23/43) of educators at least partially completed the survey (meaning they answered more than demographic questions). The 43 eligible from IL included 16 Community & Economic Development educators, seven Natural Resources Management educators, two Horticulture educators, and 18 IL members of the Great Lakes Sea Grant Network.

Illinois respondents' demographics & personal beliefs about climate change:

- Representing Land Grant and/or Sea Grant: **65%** work for Land Grant, **30%** work for Sea Grant, and **4%** both
- Representing one or more states: **64%** work only in IL, & **36%** work in IL and at least one other state
- Sex: **64%** female & **36%** male
- Age: **9%** under 30, **45.5%** 30-49 years old, and **45.5%** 50+
- Number of years working for Extension: **36%** ≤5 years, **50%** 6-20 years, and **14%** 21+
- **36%** educate about climate adaptation strategies in their current work
- **86%** believe that most scientists think climate change is happening
- **77%** are extremely or very sure that climate change is happening
- **77%** are extremely or very sure that climate change is at least partially caused by humans

Topics Taught

Twenty percent (22%) of Illinois respondents reported teaching economic development in an open ended question asking them to identify three topics they most frequently teach. Respondents also commonly taught leadership (17%) or land use (13%). The current sample is too small, however, to draw conclusions regarding which topics co-occur with climate adaptation education most frequently.

Need for Climate Adaptation

Communities have commonly expressed moderate need; low/no need most commonly expressed

Just over one-quarter (27%) of Illinois respondents indicated that their communities have expressed a moderate need for climate adaptation education. Additionally, 5% said their communities have expressed a high need for climate adaptation education.

The majority (68%) of respondents, however, reported that their communities have expressed a low need or no need for climate adaptation education.

Likelihood of Addressing Climate Change given Communities' Perceived Need

Educators from communities expressing moderate or high need for CA education more likely to educate on CA through other educational efforts in the next year; still not a majority

14% of those who reported that the communities they serve have expressed “no” or a “low” need for climate adaptation (CA) education are likely to communicate about CA as part of other educational efforts. In contrast, 43% of those who reported that their communities have expressed a “moderate” or “high” need for CA education are likely to communicate about CA part of other educational efforts.

Neither group had a majority who would offer CA information through other educational efforts.

High need	5%
Moderate need	27%
Low need	45%
No need	23%

Top Obstacles

Insufficient time and insufficient knowledge were most common obstacles

Respondents were asked to choose their top three greatest obstacles to applying climate change adaptation strategies to their work. “Insufficient time” and “insufficient knowledge” were each indicated as a top obstacle by 50% of Illinois respondents, with 4 individuals listing the former as the number one obstacle, and 5 individuals listing the latter as the number one obstacle. The prominence of “insufficient knowledge” as a top obstacle suggests an educational opportunity that could lead to more individuals in Illinois teaching climate adaptation.

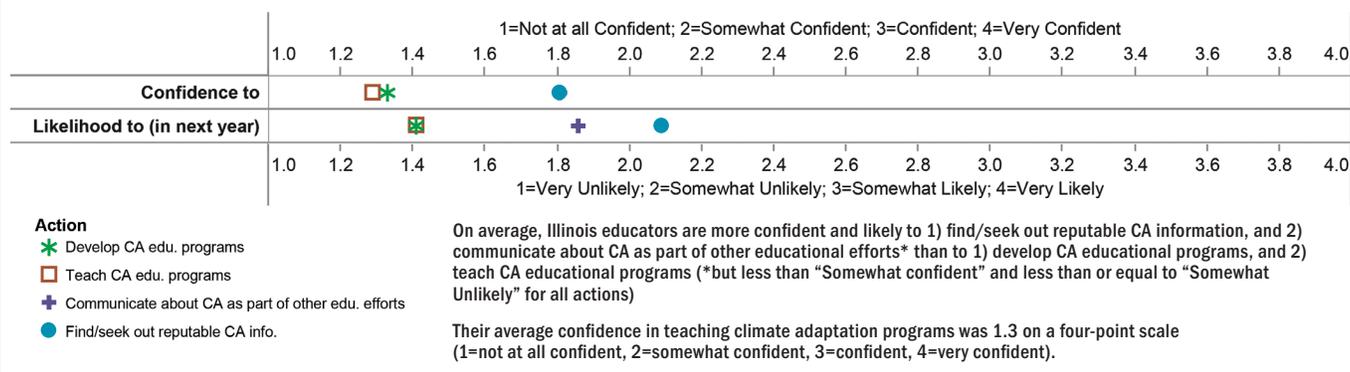
	Unlikely	Likely
No/Low Need	86%	14%
Moderate/High Need	57%	43%

Significance of Obstacles Faced

At the regional level, educators who indicated “insufficient knowledge” or “position not relevant to climate change” as top obstacles were significantly less likely and confident to take action regarding climate adaptation than those who did not choose those as top obstacles. (Those were the only two obstacles, of 12 listed, found to negatively influence confidence and likelihood.)

Obstacles	% of educators who picked as one of top three	# of educators who picked as one of top three	# of educators who picked as #1 obstacle
Insufficient time	50%	11	4
Insufficient knowledge/Don't know what to do	50%	11	5
Position not relevant to climate change	36%	8	5
Lack of applicability to community priorities	36%	8	1
Community attitudes about climate change	32%	7	5

Confidence and Likelihood to Take Action Regarding Climate Adaptation (CA)



Self-Rated Knowledge

Respondents most knowledgeable about climate science; knowledge levels generally low

Respondents were asked to rate their knowledge on many topics related to climate science, the effects of climate change, and adapting to climate change. Respondents from Illinois felt most knowledgeable regarding climate science, and slightly less knowledgeable regarding climate change effects and climate change adaptation. However, the average respondent was “somewhat knowledgeable” regarding each of the three topics, suggesting an educational opportunity in these three areas.

Teaching Abilities

Encouraging water conservation was area of greatest teaching confidence; educational opportunities exist

The topic respondents most commonly said they could teach was “encouraging water conservation” (42% could teach), followed by “increasing disaster preparedness” (37%), “encouraging renewable energy use” (35%) and “protecting, enhancing, and restoring native habitats” (35%). The data suggests an educational opportunity, as less than 50% indicated they could teach each listed topic.

Average Knowledge of CLIMATE SCIENCE	Mean: 2.3	Average Knowledge of CLIMATE CHANGE EFFECTS	Mean: 1.9	Average Knowledge of CLIMATE CHANGE ADAPTATION	Mean: 1.9
answered < 2	32%	answered < 2	52%	answered < 2	52%
answered between 2&3	50%	answered between 2&3	35%	answered between 2&3	39%
answered ≥ 3	18%	answered ≥ 3	13%	answered ≥ 3	9%

1=Not at all knowledgeable; 2=Somewhat knowledgeable; 3=Knowledgeable; 4=Very knowledgeable

Teaching Item	% that can teach	
	IN ILLINOIS	IN REMAINDER OF REGION
Encouraging water conservation	42%	53%
Increasing disaster preparedness	37%	18%
Encouraging renewable energy use	35%	41%
Protecting, enhancing, and restoring native habitats	35%	43%
The effects of climate change on ecosystems	30%	37%
Protecting, enhancing, and restoring wetlands	26%	37%
Using lake level and storm water data in planning	26%	25%
Conserving energy used for heating and cooling	26%	33%
The function of greenhouse gases in the atmosphere	25%	42%
The scientific community's degree of consensus that climate change is real	25%	41%
Maintaining communities of native species through ongoing management interventions	25%	35%
The effects of climate change on water management	25%	31%
How the earth's climate system works	24%	35%
The difference between climate change adaptation and climate change mitigation	24%	40%
The effects of climate change on economic development	24%	19%
Reducing the urban heat island effect	21%	22%
Expanding long-term monitoring of populations, habitats, and other natural resources	21%	28%
The scientific community's degree of consensus about recent causes of climate change	20%	34%
The difference between a scientific theory and the common use of the word theory	20%	40%
The difference between climate variability and climate change	15%	48%
Optimizing ditch and shoreland buffers	11%	27%
Planning for increased risk of asthma and other respiratory illnesses	11%	3%
Planning for increased risk of heat related illnesses	11%	6%
The effects of climate change on public health	5%	14%

When asked what kinds of educational opportunities would be useful to increase their capacity to deliver climate change information to communities, educators in the region (not just Illinois) said that they want education on locally relevant information, sources of information, adaptation strategies, and incorporating climate change information into other programs.

Regional Recommendations For Land Grant and Sea Grant Extension

- **Build upon existing strengths**
 - *Foster partnerships among Land Grant and Sea Grant educators.* Land Grant and Sea Grant Extension should foster partnerships among educators to increase capacity to address climate-related issues across Great Lakes states. A higher percentage of Sea Grant educators reported 1) being able to teach climate-related topics and 2) actively teaching climate adaptation strategies. Land Grant educators, who on average have lower capacity to do climate-related programming, could learn from Sea Grant educators. In addition, Land Grant educators cover both coastal and non-coastal areas within the Great Lakes states, potentially providing additional geographic coverage for climate-related programming.
 - *Share success stories from educators who have found ways to build climate-related topics into their programming.* Across Great Lakes states, certain types of educators (e.g. those who frequently teach forestry, sustainability, energy, and water quality) are more likely to be currently educating on climate adaptation strategies. Their stories could provide examples for others whose programming may have climate linkages (those teaching community development, food systems/food safety/farmers markets, and economic development) but are not currently incorporating climate adaptation into their programs.
- **Increase educator access to training on climate change impacts, climate adaptation strategies, and climate science.** Insufficient knowledge was one of the most prevalent barriers to Extension programming on climate-related topics. Providing more training for community development and natural resource educators on these topics would increase the ability of educators to respond to community needs influenced by a changing climate. Given already full work loads and community preferences, professional development for Extension related to climate change should focus on how they can incorporate climate information into other programs that are seen as a higher priority for Extension constituencies.
- **Increase educator access to climate-related information and sample course materials that could easily be incorporated into existing educational programs.** Educators indicated a high level of interest in having a source for climate-related information and sample course materials that they could easily incorporate into existing educational programs. The Coordinating Climate Outreach Initiative has created a short list of resources organized by Extension programming topics to get educators started (find these at GreatLakesClimate.org). More sample course materials or curriculum are needed to simplify the task of sifting through an overwhelming amount of information. Finally, we suggest a “human resource” approach, where educators already incorporating climate-related information into their programs would agree to be contacted by other educators in need of assistance. While this approach was not suggested by respondents, it has emerged during the process of locating and organizing the many resources that are available to support Extension programming on climate-related issues.

For more information on the details of the study or the results, contact Rebecca Power (rlpower@wisc.edu), Jenna Klink (jklink@wisc.edu), or Astrid Newenhouse (astridn@wisc.edu) at the University of Wisconsin-Extension Environmental Resources Center.

For regional, state-specific or Sea Grant-specific results, visit <http://go.wisc.edu/j4f29e>

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