STUDENT RESOURCE

Making Sense of Climate Change Science:
Michigan Tech Researchers Stress the Importance of Communication

Climate change continues to be a “hot” topic as the nation digs itself out from record snowfalls after the warmest year on record. At Michigan Technological University, researchers studying climate change are concerned not only with the science, but equally with how to communicate the vast and complex information generated by the topic.

“Information on climate change is gushing like a fire-hose, and it’s just impossible to sort through what’s relevant,” says Chris Swanston, who faces confusion from forest managers whenever the topic of climate change comes up. Swanston is director of the Northern Institute of Applied Climate Science, a partnership between Michigan Tech and the US Forest Service. He studies changes in forest ecosystems related to climate change and their impact on forest management decisions. With so much “active misinformation” being distributed, one of Swanston’s most challenging tasks is to help forest managers make the best decisions from most credible scientific information.

Climate change is a global phenomenon, yet many researchers have found that local concerns can help increase attention and understanding of the science. “People relate to what’s familiar”, says W. Charles Kerfoot, an aquatic ecologist from Michigan Tech’s Department of Biological Sciences, involved in the National Oceanic and Atmospheric Administration’s Great Lakes Observing System. Here in the Great Lakes region, for example, “they kind of go, ‘Oh my gosh’ when you talk about Great Lakes water levels being lower than normal.” He adds that information on climate change needs to read like a story that people can relate to, and that ”There is no substitution for clear thinking, logical thinking, articulation; you have to be able to put the pieces together. I am most effective when I can tell a short story.”

Kathleen Halvorsen agrees. A sociologist who studies relationships between people and the environment, she has conducted research to understand public perceptions of the causes, impacts and solutions to climate change. “Climate change is a complex concept,” which, she adds, is often misunderstood even by some advanced university students. “Many members of the public misunderstand the causes of climate change in very fundamental ways,” Halvorsen says. She finds that people often confuse the climate change concept with earlier scenarios or historical environmental problems. For example, she has observed that many people assume climate change is related to industrial pollution or ozone depletion, and she finds that these impressions “are very hard to change.” Like Swanston, Halvorsen devotes much of her time and energy working with decision-makers to help them understand the practical implications of climate change.

When it comes to climate change, sometimes it seems that scientists and non-scientists simply do not speak the same language. “I will say something, but they will hear something completely different,” Swanston says. “First, we need to figure out how to communicate with each other. We need to learn how to take the flood of information from that fire hose and filter out what’s credible, in a way that decision-makers can use it.”

Forest managers need the best and most accurate information to make effective decisions regarding the health and sustainability of our vast forest resources, Swanston explains. For example, in the northern forests, scientists project that many cold-weather species, such as red pine, paper birch, balsam fir, and black spruce, will face increased stress and competition as their habitat moves northward. Kerfoot has documented similar shifts in Great Lakes aquatic communities, including increased phytoplankton blooms and decreased winter ice cover. "These changes will ripple through the food web, including shifts in fish species," he says. "I certainly am an advocate of people being aware of global climate change because I have seen the effects all over the world."

Michigan Tech scientists also say there is a fine line between informing the public and alarming them. "This issue is just too pressing and too big for scientists to be disinterested", Swanston observes. But, Kerfoot adds, "You better have the data to back up what you say. That is where you run into problems." Halvorsen often encounters resistance or anger among people she speaks with. "I think climate change is the big problem that humans face, and scientists should be contributing to solving it," she says.

Swanston's bottom line: "Climate change is happening, and it will continue to happen. We need to deal with it." Scientist or not, that should be understood in any language.

Source: Michigan Technological University, http://www.mtu.edu/news/stories/2011/march/.