More than half of farmers surveyed disagree that global warming is human-caused

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Farmers have long taken a keen interest in a changing climate and potential effects, good and bad, on what they grow and how they grow it. But they see broad room for interpretation — and so do many scientists, for that matter — about what's causing climate change, if it's happening at all, and what the future may hold.

On Jan. 15, scientists with NASA and the National Oceanic and Atmospheric Administration announced their independent conclusions that 2014 was the hottest year globally in the 134 years temperature records have been maintained. They contend it is part of a trend of increasing temperatures, largely attributable to humans pumping greenhouse gases such as carbon dioxide into the atmosphere and trapping heat.

Bosen, however, isn't convinced man is to blame for climate change. Instead, he believes natural cycles may be the cause. And he's not alone among Northwest farmers.

According to a new survey funded by a USDA climate grant, more than half of 986 responding Washington, Oregon and Idaho farmers strongly disagree with the premise that global warming is human-caused, compared with 30 percent who agree. The survey also found that 39 percent believe global temperatures are rising, 20 percent believe they will have to change farming methods because of climate change and 70 percent have witnessed changes in weather patterns. The surveys were mailed in December of 2012, but results weren't released until this month.

The American Farm Bureau Federation acknowledges the potential for more extreme weather, but share's Bosen's concerns that Mother Nature may have more to do with climate change than mankind. In an October 2014 climate change policy paper, Farm Bureau opposed federal cap-and-trade programs, proposed Environmental Protection Agency emissions regulations for coal-fired power plants and any "regulations that will increase costs for all Americans while not having a significant effect on climate."

Warmest year?

NASA and NOAA base their temperature estimates on a network of 6,300 weather stations, Antarctic research stations and ocean readings from ships and buoys.

They've declared that last year, propelled by record ocean temperatures and near-record land temperatures, beat out 2010 and 2005 for the warmest year by the slimmest of margins — just one-hundredth of a degree in NASA's case. They offered the caveat that there's at least a 55 percent chance the highly touted record is invalid, based on the margin of error.

NOAA concluded the average global land and sea surface temperature in 2014 was 58.24 degrees, 1.24 degrees above the 20th century average. NASA's 2014 estimate of 58.42 degrees was up 1.22 degrees compared with a baseline average of temperatures in the years spanning from 1951 to 1980.

The agencies say the 10 warmest years on earth have all occurred since 2000, with the exception of 1998, and the planet has warmed by 1.4 degrees since 1880.

"This is the latest in a series of warm years, in a series of warm decades," said Gavin Schmidt, director of NASA's Goddard Institute for Space Studies. "While the ranking of individual years can be affected by chaotic weather patterns, the long-term trends are attributable to drivers of climate change that are now dominated by human emissions of greenhouse gases."

Satellite data alone, however, told scientists with the University of Alabama's Earth System Science Center a somewhat different story — that 2014, was the world's third warmest year in the 36-year history of satellite temperature data, but by such a slim margin as to be statistically insignificant.

"2014 was warm but not special," they wrote.

University of Idaho climatologist John Abatzoglou, who authored research concluding man-made climate change has already occurred in the Northwest, acknowledges the 2014 temperature was a "photo finish" with 2010, 2005 and 1998, but he considers data from individual years to be "noise" within a long-term warming trend.

In the continental U.S., NOAA calculates 2014 was the 33rd warmest year at 52.55 degrees, still 0.53 degrees above the average since 1895, with the Midwest and East Coast experiencing cooler temperatures. Regionally, Idaho's 45-degree average temperature was third warmest for that state, Washington's 48.4-degree average was fourth warmest, and Oregon's 49.5-degree average was second warmest. California, with an average temperature of 61.5 degrees, was among four states that set records.

According to the theory of global warming, as carbon dioxide levels rise, more atmospheric water vapor is trapped, holding in heat. Polar ice begins to melt, darkening vast stretches of the planet's landscape and causing it to absorb even more heat, which is stored in oceans and lends energy to more extreme weather events.

Global cooling?

Western Washington University climate researcher Don Easterbrook understands climate is constantly changing, but believes man-made warming is "a hoax" and atmospheric carbon dioxide levels are too minute to cause any noticeable climate change.

He studies satellite records, convinced the federal government's political bias affects how NOAA and NASA adjust for data gaps and changes in circumstances. Easterbrook's pick for the warmest year since 1880 is 1934.

Abatzoglou acknowledges no method is perfect, and NOAA and NASA must take changes such as development near weather stations and station relocations into account. But he trusts the data.

Easterbrook, whose research involves studying glaciers and ice cores, said the climate reached 2-5 degrees warmer than now at the end of the last ice age 10,000 years ago. Detractors are quick to note the earth's orbit came closer to the sun in those days. Easterbrook said the planet is still emerging from a little ice age that began in the year 1300. He's measured 40 periods since 1480 of cooling and warming, with most patterns lasting about three decades. He said the rate of warming from 1915 to 1945 was comparable to the warming rate from 1978 to 2000.

By contrast, Idaho State University paleo-climatologist Bruce Finney has observed in sediment cores from Central Washington's Caster Lake that modern drought cycles in the region have lengthened to 50 years, about 20 years longer than 6,000 years ago.

More recently, Easterbrook points to a flattening temperature trend, spiking in 1998 and either dropping or rising by statistically insignificant levels since then.

"It's been getting cooler, which is exactly what I predicted," said Easterbrook, one of 32,000 American scientists who signed the Oregon Institute of Science and Medicine's petition agreeing no evidence supports man-made warming. "There's been no global warming in the past 18 years."

Easterbrook argued long-term models predicting a steep warming trend — NOAA forecasts that global temperature will rise by at least 3.6 degrees, and possibly more than 5.4 degrees, by the year 2100, for example — have been off by a full degree in the past decade and have been proven to be "totally worthless."

At least along the West Coast, former University of Washington climate researcher Nate Mantua and a colleague concluded wind direction, affected by oceanic conditions, has been the major driver of temperature fluctuations. Globally, however, Mantua is convinced human-caused warming is real.

"There's a lot of work to that shows by the 2030s and 2040s, global warming from human causes will start to be the dominant player, even in the region," Mantua said. "Looking back, the dominant player in the region is this wind pattern."

Impact on wheat

Abatzoglou is part of a study now in its fourth year involving UI, Washington State University, Oregon State University and USDA's Agricultural Research Service in Pullman, Wash.

The grant, through USDA's National Institute of Food and Agriculture, awards $4 million per year to understand how climate change could impact the Northwest wheat industry, and how growers should adjust. The researchers conclude the Northwest now has two more weeks of freeze-free season than a century ago, and annual low temperatures have risen 5-8 degrees.

The longer season and additional atmospheric carbon dioxide — now 400 parts per million compared with 320 parts per million in 1960 — should lead to slightly increased wheat yields, according to grant-funded crop modeling, but moisture is expected to shift from summer toward winter, with more falling as rain than snow.

The researchers say growers will adapt by using more no-till farming and other practices that improve soil health and water retention, or conserve nitrogen that could be converted into a greenhouse gas.

Abatzoglou said the prevalence of extreme precipitation events should increase, raising the risk of catastrophic crop losses, and crops will likely be under more heat stress. Invasive weeds could find an edge in a warmer climate, and go to seed faster, and there may be more insect reproduction cycles each season.

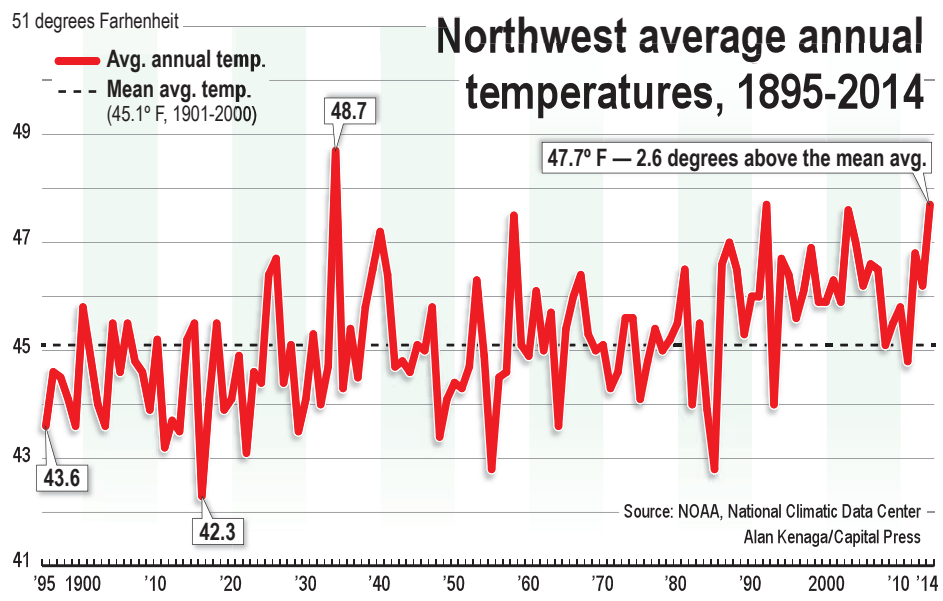
OSU Extension climate specialist John Stevenson is completing a study on how climate change may affect water storage in Idaho's Big Wood River system. He foresees peak flows shifting from spring to late winter, which could affect water availability for farmers using natural flows, or those with insufficient storage.

The head of the grant team, UI entomologist Sanford Eigenbrode, has studied climate affects on aphids, which seem to respond to warming in different ways depending on the species, and cereal leaf beetles, which he fears may thrive as predatory parasitoid wasps struggle with warmer springs.

"Forest pests almost universally get worse as it gets warmer," Eigenbrode said. "Ag pests go every which way as it gets warmer, making it necessary to look at each one and try and understand it."

Eigenbrode predicts more farmers will shift toward winter wheat to better utilize winter moisture and take advantage of warmer winters. He fears dryland farms "growing at the limits" of precipitation may have challenging years ahead as summers become hotter and drier.

"As climates change, farming needs to adapt and change," Eigenbrode said. "The goal of this project is to help do that in the smartest way possible."



Spud growers adjust to changing conditions

By JOHN O'CONNELL
Capital Press

Western Idaho farmer Doug Gross has shifted to growing potato varieties that are water efficient and can handle heat without quality problems.

Concerned the state's No. 1 spud variety may be ill-equipped to handle higher summer temperatures, he hasn't planted Russet Burbank in 15 years. He now relies on heat-resistant spud varieties such as Bannock Russet, Ranger Russet, Shepody and stress-tolerant lines of Russet Norkotah.

From 2009 to 2013, Idaho's average annual yield per acre increased by 4.9 hundredweight, University of Idaho Extension economist Paul Patterson said. However, yields were down 0.4 hundredweight in southwest Idaho, the state's hottest region, up only by 0.5 hundredweight in southcentral Idaho and up by 6.5 hundredweight in cooler Eastern Idaho.

Patterson believes high summer temperatures have improved yields in Eastern Idaho but pushed the state's western fields to the point of being too hot.

"Yields of Washington state have also flat-lined in recent years, and that's because of this additional heat," Patterson said.


Hoff

According to the National Weather Service, Idaho's average summer temperature was 0.3 degrees above average in 2009, a degree below average in 2010, 0.3 degrees below average in 2011, 2.4 degrees above average in 2012 and 3.7 degrees above average in 2013.

When temperatures were a degree below average in 2010, however, southwestern yields bucked the trend and rose 50 hundredweight from the previous year, while other Idaho counties saw yields shrink by 26 hundredweight, according to USDA.

Gross believes the experience of recent years shows the sensitivity of Western Idaho potato farming to increased temperatures.

"It does change our outlook on varieties we think we can grow viably in Western Idaho if the heat continues," Gross said. "Something is obviously happening. I don't really know what the cause is, but we're bracing ourselves for warmer years in the future."

In Eastern Idaho, grower James Hoff said he's noticed yields have been on the rise in the past few years.

"Warmer summers are definitely helping us that way," Hoff said.

But Hoff has found too much heat can cause problems, even in Eastern Idaho. For a long stretch of the summer of 2012, Hoff said his region didn't get its usual cool nights, and quality problems such as high sugar ends surfaced.

"That's always been Idaho's key, that we have those long, warm days but we get


Abatzoglou


Mantua


Eigenbrode

'If the department overreaches, there is recourse'

DOL from Page 1

Tim Bernasek, attorney for the growers, said his clients are relieved the dispute has finally ended and are satisfied with the settlement terms.

"They are very appreciative of the support the industry has given them," Bernasek said.

Capital Press was unable to reach DOL for comment.

The Oregon Farm Bureau hopes the controversy will discourage the agency from using similar strong-arm tactics against other farmers in the future.

"This is a demonstration there are checks and balances," said Dave Dillon, OFB's executive vice president. "If the department overreaches, there is recourse."

The dispute was sparked in 2012, when the agency claimed the farmers had paid pickers less than the minimum wage and threatened to block their shipments of blueberries as unlawfully harvested "hot goods."

Rather than fight DOL's findings in court — and risk losing millions of dollars of fruit — the growers agreed to pay $220,000 in alleged back wages and penalties so the agency would lift its "hot goods" objection.

Last year, however, a federal judge overturned those consent decrees because they had been signed under economic duress by the farmers, who had to waive their right to challenge DOL's minimum wage violation claims.

When those deals were overturned, the farmers were prepared to fight the DOL's allegations that they employed unrecorded "ghost workers" who helped other pickers harvest berries. Because pickers are paid on a piece rate, the agency claimed they received less than the minimum wage.

Agency records uncovered by the Oregon Farm Bureau showed that DOL based its accusations on a formula that assumed pickers who harvested more than a certain amount of blueberries per hour were assisted by such "ghost workers."

The Farm Bureau claimed the formula was flawed, since workers can actually pick much larger amounts, and said DOL had scant evidence of wrongdoing by the growers.

Records show that DOL was unable to identify the vast majority of the 1,000 "ghost workers" that it claimed worked at the farms.

Even so, the legal dispute between DOL and the farmers threatened to escalate last year.

The agency argued that it couldn't return $73,500 that had already been disbursed to workers while the farms demanded full repayment and $150,000 in damages for diminished fruit quality.

DOL also refiled complaints against the farms, adding new charges of wrongdoing going back farther in time and naming additional defendants.

In November 2014, though, the agency asked for the litigation to be delayed because it had entered settlement talks with the growers.

The recent decision to settle marks a reversal of DOL's previous strategy of escalation, said Dillon.

"They chose to take the more difficult and less reasonable path at every turn," he said.

DOL was probably convinced to reassess its approach due to pressure from members of Congress and the media, several setbacks in federal court, as well as the weakness of the agency's case against the farmers, Dillon said.

"I think at some point the department realized there's no win here and it will only get worse if they continue," he said.

118-bird flock in Washington infected with H5N2 avian influenza was euthanized

BIRD from Page 1

In Washington, a non-commercial, 118-bird flock in Port Angeles infected with highly pathogenic H5N2 avian influenza, was euthanized Jan. 19, according to the Washington State Department of Agriculture.

WSDA spokesman Hector Castro said the flock's owner contacted the agency last week after a Sebastopol goose, a domestic species, died. Other birds, which included chickens, showed signs of sickness, Castro said.

WSDA and U.S. Department of Agriculture officials confirmed the flock was infected with bird flu. The USDA will compensate the owner.

Castro said the flock's owner recently sold birds that were introduced to a flock in Neah Bay, also in Clallam County on the Olympic Peninsula. Birds in that flock tested negative for bird flu, he said.

Guinea fowl and chickens in a backyard flock in Winston in Douglas County, Ore., were euthanized in mid-December after highly pathogenic H5N8 bird flu broke out. H5N8 and H5N2 viruses are closely related.

Until last month, highly pathogenic bird flu had never been documented in Washington or Oregon.

Bird flu has not struck any U.S. commercial flock, but 245,600 birds at 11 infected poultry farms in British Columbia, Canada, were culled from Dec. 1 to 17.

Barton urged domestic bird owners to keep their flocks away from wild waterfowl.

Avian influenza symptoms include coughing, sneezing, respiratory distress, decreased egg production, swelling of the head, comb and wattles and sudden death.