

## **Drought Grip Loosens** (Continued from Front Page)

Record high temperatures across the state were becoming commonplace. Conversations this reporter had with turf equipment and supplies distributors indicated their sales of both machinery and pesticides were slow. Reports surfaced of Bull's Eye's problem, of golf courses digging deeper wells and irrigation equipment failures. They made it obvious this summer was going to be remembered for its misery for a long time.

The Fourth of July holiday tradition of fireworks was set aside, except for professionals launching displays from safe and designated areas. More and more we heard about the greenhouse effect and what it was doing to our climate. Rainfall remained sparse and spotty throughout the state, and few areas were prosperous. The jet stream, and thus our normal rainstorms, were moving up the west coast and into Canada, then down east of the Great Lakes. This left our area and the others in between dry and sunny and hot.

A tragic natural event like this one brings on not only a lot of theoretical explanations but many possible solutions as well. Some suggested cloud seeding. The clergy suggested prayer. Grass and forest fires started to crop up as environmental damage increased. Wind erosion of our soil in some places became serious. Water restrictions on Wisconsin citizens became commonplace. As July slowly moved on we read of unscrupulous traders profiting from the misery of farmers through crop speculation. Advice on health was available everywhere — wear loose-fitting clothes, drink plenty of liquids, avoid too much direct exposure to the sun, get plenty of rest, etc. Health officials became more and more concerned about the stress factor in the lives of those directly affected by drought. That concern most certainly included Golf Course Superintendents and their employees. And still, long range forecasts offered no relief in sight.

Discussions began in July over the question of whether this was just an agricultural drought or a meteorological drought. Obviously, a meteorological drought is much more serious and results in the lowering of water tables, streams and rivers and reservoirs. Some believed we are staring a meteorological drought in the face. Although a few rain showers fell around the state, it was a record-breaking month for

heat. In Madison — I've not had enough time to track anywhere else — 14 of July's 31 days had a high temperature of over 90. And the precipitation was well below normal for the month.

As this is written in early August, the weather changes normally associated with this time of year are becoming visible. Some parts of the state are experiencing a little rain. There are some areas that are now actually back to normal because of heavy rain. Even

though this isn't true for my place of work, there still is a sense that maybe the worst is over. The brutal heat remains; however, the calendar tells me that soon this will be moderate, too.

The final chapter for 1988 is yet to be acted out. We will recover from this year, no doubt. The nagging question, the one that should worry everyone, is whether or not the weather of this year portends of long term adverse summers. But we must wait on that answer, too.

## **Is The Greenhouse Effect Here?**

*By Michael Semler*

Palm trees may be coming to the Midwest. No, I am not talking about a new breed of palm trees; I am talking about actual desert conditions taking over the nation's mid-section, our precious corn and wheat belts.

As the drought of 1988 continues and daily temperatures in the 90's become the norm rather than just heat waves, there seem to be ominous signs of what may come in the near future.

What we are experiencing now may be due in part to the Greenhouse Effect, a process by which man-made and natural gases trap solar heat in the earth's atmosphere causing a global warming. The effect will be felt worldwide, not just here in the Midwest.

The greenhouse effect is, in some scientists' minds, only a theory. However, many scientists are convinced its effects are inevitable in the near future.

In its simplest form, the theory states that as carbon dioxide and many other gases in the earth's atmosphere are increased, these gases will change the earth's climate. Like panes of glass in a greenhouse, CO<sub>2</sub> allows most solar radiation to enter the atmosphere, but inhibits infrared rays reradiated by land and bodies of water from escaping into space. As the CO<sub>2</sub> accumulates, enough heat may be trapped to gradually warm the atmosphere.

If these greenhouse gases continue to increase at the current rate, the earth's mean temperature could rise 2°F to 7°F by the next century. That would make global temperatures warmer than at any time during the past 100,000 years. Global rainfall patterns could shift, bringing heavy rains to previously arid regions and drought to productive farmlands in the Midwest.

Since the Industrial Revolution, increased production of CO<sub>2</sub> and other gases, such as nitrous oxide, from the burning of fossil fuels has made the shroud of greenhouse gases even

denser. This denser shroud captures more of the earth's excess heat, causing a gradual warming. Some scientists contend that this gradual warming can be seen in the last century where worldwide temperatures have risen by 1.2°F, compared with a natural variation of only 0.4°F. They believe this warming has been sufficient enough to warrant it as a harbinger of the greenhouse effect.

Other scientists note that global temperatures and climates move in broad historical patterns of warming and cooling that last tens of thousands of years. Astronomical cycles, volcanoes, the interplays of deserts, oceans and cloud cover can effect the density of the greenhouse cover. Thus, they believe there is insufficient evidence to specifically label the greenhouse effect as the culprit of this current warming.

Whether the greenhouse effect is here or not, these scientists calculate that global temperatures could rise between 3°F and 9°F by the year 2050. If that happens, we can expect hotter, drier summers with eventual glacier and polar ice cap melting, and a subsequent rise in the sea level by several feet. By then, increased CO<sub>2</sub> production and widespread deforestation will cause an increasing role in the atmospheric heat-up.

James Hansen, an atmospheric scientist who heads NASA's Goddard Institute, testifying before a congressional committee said, "It's time to stop waffling and say that the evidence is pretty strong that the greenhouse effect is here." Even scientists who believe his testimony is premature hope it will stir up some worldwide support to start conserving energy and cut back on the use of fossil fuels. The alternative, nuclear power, may be less pleasant to many, but is the only capable replacement for fossil fuel power plants and thus, preventing the onslaught of the greenhouse effect.