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Global warming: Yes, it is very real

By Bob Doppelt

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Global warming is the defining issue of our times. The Pacific Northwest is already experiencing the effects of rising temperatures. Left unchecked, global warming will undermine economic, social and environmental prosperity and security here and abroad.

This is the first in an occasional series of columns about global warming. Because global warming is an event without precedent in human experience, the causes, consequences and solutions can be difficult to grasp. I'll try to explain them and discuss their local implications.

This will not be a science column. However, a buddy I play basketball with — Charlie Warren, the former University of Oregon All-American — is a self-described climate skeptic who constantly peppers me with questions about global warming. I recently bumped into a Springfield City Council member who voiced similar concerns. I thought it therefore made sense to devote this first column to some of the basic questions they and others have.

Skeptics' first question is often, "Is there proof the Earth is warming?"

The answer is yes. Global warming is unequivocal. Instrument measurements around the globe document unprecedented warming, as does direct observation of melting ice sheets and glaciers and rising sea levels. Proxy data such as ice core samples reinforce the empirical information.

Here in the Northwest, average temperatures have risen by 1.5 degrees. Mean average temperatures are expected to rise about 1.9 degrees by the 2020s compared with the 1970-to-1999 average, and by 2.9 degrees by the 2040s.

If skeptics such as Charlie acknowledge that the Earth is warming, their next question often relates to whether humans are the cause. Again, the answer is yes.

Scientists have spent considerable time teasing out natural from human-related "forcings," the term they use to describe the drivers of global warming. The result is that solar variability, volcanic activity and other natural events cannot account for

the current warming. Only when the atmospheric concentration of carbon dioxide (up by more than 35 percent since preindustrial times), methane (up 155 percent) and other greenhouse gases are taken into account do climate models reproduce today's warming.

The bottom line is that global warming is indisputably happening, and humans are the primary cause. Ample research shows that scientists who claim otherwise are distorting data to support what is usually an ideological viewpoint.

That's not to say that scientists know exactly how global warming will play out. It's safe to project that warming will produce increased storms, droughts, flooding, heat waves and disease, but computer models can't predict exactly how this will unfold.

The main culprit is our use of fossil fuels. However, deforestation and land use changes also contribute. For more than 200 years, fossil fuels have powered the growth of industrial economies. Fossil fuels are now also driving growth in developing nations such as China and India, processes that have elevated millions out of poverty. No matter where they are burned, however, fossil fuels produce carbon dioxide that accumulates in the atmosphere. Too much CO₂ heats up the Earth.

If humans play the dominant role in global warming, the next question skeptics tend to pose — “Can humans actually do anything about the problem?” — has already been answered. Yes, reducing emissions will, over time, restabilize the climate.

But we can't lollygag. The Intergovernmental Panel on Climate Change said in its final November 2007 report that to avoid catastrophic climate change, actions in the next two to three years must halt the rise of global emissions by 2015. After 2015, an unyielding effort must be instituted to reduce global emissions by 80 percent by midcentury or earlier.

This means that for at least the next 100 years, people in Lane County and across the globe must find ways to meet their needs while emitting very few greenhouse gases.

Making the transition to a low-carbon economy starts with a fundamental change in our thinking. The traditional ways we design, construct and manage our energy and transportation systems, buildings and development patterns, infrastructure, and goods and services will need to shift. Numerous behavioral changes will be the core of any successful strategy. We also need to prepare for the effects of climate change that are inevitable.

If we get our heads screwed on correctly, however, thousands of new technologies

and jobs, and the policies needed to foster them, will emerge that can increase prosperity and social well-being while stabilizing the climate.

In future columns I'll discuss the emerging risks and opportunities associated with global warming.

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