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July 11, 2023

Laura Watson
Director
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Director Watson,

As a policymaker, I am always trying to stay current with the latest research on important scientific issues, including climate change. Recently, I read about a new study published in *Communications Earth & Environment* that accurately modeled the effects of the position of Earth's axis on ancient glaciers. You can find the new study here:

[*Astronomical Forcing Shaped the Timing of Early Pleistocene Glacial Cycles*](#)

An excerpt from the article states: ...because of gravitational interactions between the Earth, Sun, Moon, and other planets of the Solar System, Earth has experienced changes in its orientation (obliquity) over the course of eons. This has led to significant changes in Earth's climate, particularly the recession and expansion of ice sheets due to significant variations in the distribution of sunlight and seasonal changes.

According to the authors, changes in the angle of the earth's axis correspond with observations in the timing of glaciation and deglaciation. The study's authors demonstrated that significant changes in climate have occurred throughout our planet's history apart from the effects of anthropogenic activity, such as GHG emissions.

New scientific breakthroughs should cause us to reevaluate if we are making decisions based on old models. I would like to know whether the Department of Ecology's climate planning accounts for non-GHG phenomena in line with the latest scientific research, like those documented in the new study. If not, I would suggest that now is an opportune time to start looking at the bigger scientific picture, considering that the department was recently authorized to update and modernize the state's integrated climate response strategy.

Sincerely,

Senator Phil Fortunato
31st Legislative District