Testimony in opposition to HB 2183
House Committee on Agriculture and Natural Resources

March 29, 2015

This written testimony is in opposition to HB 2183, which would require persons growing *Arundo donax* to file a bond with the invasive species council.

My name is Jason Maxfield, and I am a research scientist at Portland State University. I have worked extensively with *A. donax* in Oregon, and my research was cited in testimony to the House Committee on Agriculture and Natural Resources in support of House Bill 2183. I would like to correct misrepresentations of my research, as well as to offer my own views, as a plant physiologist and committed environmentalist, on this issue. I am currently traveling out of state with my family, and am unable to appear in person before the committee, however, I would be glad to do so at a future date if additional hearings are held.

Kevin Weitemier cited my research to claim that *A. donax* thrives in the Columbia River Basin agricultural area, and thus to suggest that it poses an invasive threat. It is accurate that I found *A. donax* performs well in this region, however, my research is simply not relevant to the issue of invasive risk for the important reason that all of my research was conducted in summer months during peak growing season (July and August) and the critical issue for invasive risk risk is the cold-tolerance of this species during winter months. I have made no measurements of *A. donax* performance over the winter, and thus my findings should not be interpreted as evidence that *A. donax* will pose an invasive risk to our region.

Additionally, Kevin Weitemier cited my findings of higher than expected isoprene emissions from *A. donax* to suggest that its cultivation may negatively impact local air quality. It is accurate that I measured high emission rates, however, his interpretation of these data is based on a fundamental misunderstanding of atmospheric chemistry. Isoprene, in isolation, does not pose a threat to air quality; it must interact with oxides of nitrogen, which typically result from anthropogenic activities. Published data show that the background levels of nitrogen oxides are very low in the Columbia River Basin region, and consequently, the emission of isoprene by *A. donax* would likely have a negligible negative impact on local air quality. Additionally, *A. donax* would replace coal as a fuel source, which does have strongly negative effects on air quality. Consequently, available evidence supports the view that using *A. donax* as a fuel source in eastern Oregon would improve local air quality (Porter et al. 2012).

In addition to correcting these errors, I would like to register my strong opposition to HB 2183, as well as any other efforts to block *A. donax* cultivation, for the following reasons:

I believe the invasive risk of this species is being misrepresented. *A. donax* is already widely grown in our state as an ornamental plant and has been for quite some time. I have personally observed *A. donax* growing in the canals of Lake Oswego, along the banks of the Willamette River, and in many yards across the state. Although I can find no records of the original introduction of *A. donax* to our state, it has likely been present for at least several decades and possibly for centuries (*A. donax* was originally brought to what is now the Western United States by Spanish missionaries in the 1600's, and it quite likely reached Oregon shortly thereafter—Mariani et al, 2010).

Consequently, the invasive risk of this species has already existed for a considerable period of time, and will remain weather or not *A. donax* is grown for bioenergy. However, despite the widespread planting of this species, *A. donax* has not become an invasive problem—likely because it does not well-tolerate our cold winters.

Additionally, I believe that supporters of HB 2183 are focusing on the hypothetical risk of invisibility, while failing to recognize the substantial benefits to our regional and global ecology if *A. donax* is grown for use as a biofuel. Even if the alarmist predictions are accurate (and to be clear, I am not aware of any good evidence that they are) the potential risks are simply much less significant than the benefits that could be realized from this large-scale bioenergy project.

Global climate change is the single greatest risk to ecosystems, and unless we find a way to dramatically reduce CO_2 emissions quickly, environments will change so radically that the entire concept of native species will become meaningless, and all efforts to protect native ecology will be futile. If native species cannot grow in their historic habitats, no effort to prevent invasive species will help.

The Boardman Coal Plant is currently the largest single source of CO_2 emissions in the State of Oregon, and is responsible for approximately 6% of all CO_2 emissions in our state. Analyses by other researchers demonstrate that converting Boardman to a biofuel facility with *A. donax* as fuel would result in carbon-neutral energy production (Lewis et al, 2012). Consequently this project would realize a huge benefit for ecology, both locally and globally.

Additionally, this project will serve as proof-of-concept for the conversion of existing infrastructure (coal power plants) to green energy. Repurposing existing infrastructure like this is an extremely efficient way to provide renewable power and could represent the simplest, cheapest, and fastest way to radically transform energy production on a global scale. I would like for my home state of Oregon to be a global leader in these efforts and to be motivated by optimism and ingenuity rather than fear of the unknown.

In closing, I would like to acknowledge a minor conflict of interest. While I was a graduate student at Portland State University, I received funding for my research

from Portland General Electric. However, this relationship ended in 2013 and I currently have no financial relationship with PGE or any financial interest in *A. donax* cultivation. I am now employed as a research scientist at Portland State University and my current research involves studying threats to forest health and all of my funding is provided by the United States Forest Service.

Jason Maxfield, MS
Senior Research Assistant
Portland State University
Department of Biology

5408 NE 29th Avenue
Portland, Oregon 97211

JasMax@pdx.edu

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