



December 12, 2022

To: Lower Merion School Board

I am writing in defense of the oak population and associated habitat that is currently under threat from the Lower Merion school district.

Having been a research scientist for 41 years, I am currently The T.A. Baker Professor of Agriculture at the Department of Entomology and Wildlife Ecology at the University of Delaware. (Please see my attached CV.) Because area of focus for the past 20 years has been plant-insect interactions and their implications for the conservation of biodiversity, I am particularly interested in native North American oaks as keystone species, supporting entire guilds of other species, more so than any other genus of trees. This is a subject I explore at length in my 2020 book, *Nature's Best Hope*, and my 2021 book *The Nature of Oaks*. Our research has shown that oaks are keystone species because they support food webs better than other trees. When keystone species are removed from a food web, the food web collapses and its associated biodiversity disappears. This is not only happening within ecosystems world-wide (earth has lost 2/3 of its wildlife since 1970 and the UN now predicts we will lose 1 million species in the next 20 years without immediate conservation measures) but also in North America, which has lost 3 billion breeding birds in the last 50 years. These losses are not trivial from a human perspective because they are the species that run the ecosystems that provide our life support.

Cutting down these oak trees, several hundred in number, would lead to several deleterious outcomes. Habitat supporting a large number of species would be destroyed. The presence of a variety of birds and other species in the area has been documented and must be taken into consideration.

As your own city planners surely must know, it is precisely in such urban contexts that large, mature trees like Garry oaks should be prized, for they are ideal in terms of combating climate change and lowering heat island effects. Through their ecosystem services, such as their large capacity for carbon sequestration (the best of any tree genus) and cooling canopy, which help prevent urban heat islands, these large oaks can do much more than any young trees planted with the aim of "mitigation".

Although the original oak habitat that existed before the European settlers arrived has been almost totally destroyed, the remaining oaks can flourish despite their suburban or even urban settings, and serve as sources for oak expansion by encouraging the "re-wilding" of the properties where they stand. By introducing native plants, we help the habitat and related species that once were associated with oaks. It is clear that the parks and preserves we have relied on to protect the nature that supports us are not working. They are too small, too few, and too isolated. Our only alternative is to practice conservation outside of parks and preserves in all human

dominated spaces. That is, we must learn to coexist with the natural world that supports where we live, work, play and farm. Please see my book *Bringing Nature Home: How You Can Sustain Wildlife with Native Plants*, in which I discuss this very topic.

The following quote by Matt Lee-Ashley is appropriate here:

“Evaluating the condition of nature ... is a bit like watching a leaking pipe. If a person focuses on each drop as it falls to the floor, the leak hardly seems damaging. If they leave for the day, however, they are likely to come back to a room full of water.”

I appreciate that it is difficult to see how the environmental degradation of a single property will have a significant negative impact on the health our greater ecosystems, but when the millions of such properties around the country are viewed collectively (as the species that depend on them do), the enormous impact becomes obvious.

In conclusion, I urge the school board to seek another building location on the basis that the current location would cause irreparable damage to this immediate area of urban oak woodland, and the considerable habitat it provides to many species of wildlife.

Respectfully,

A handwritten signature in black ink, appearing to read 'Douglas W. Tallamy', written in a cursive style.

Douglas W. Tallamy
T.A. Baker Professor of Agriculture
University of Delaware