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To Whom It May Concern,

I was contacted by Lynn Fitz-Hugh, Executive Director of Restoring Earth Connection. Ms. Fitz-Hugh asked my professional opinion regarding some provisions of an international code that the state of Washington is considering in an effort to create fire-safe communities. Specifically, I was asked whether a provision in this international code, prohibiting trees from being within 10 feet of each other (and requiring such trees to be cut down), is scientifically sound and advisable. While provisions regarding home hardening and defensible space *pruning* within the immediate vicinity of each home are important and grounded in the best available science, the prohibition on trees being within 10 feet of each other is not scientifically sound and, in fact would be counter-productive if adopted. Below I briefly explain why. For background, I am a forest and fire research scientist. I have a Ph.D. in Ecology from the University of California at Davis, and have published about four dozen scientific studies in peer-reviewed journals, and two books.

Home Hardening is Paramount: By far, the single most important thing that can be done to protect homes from wildfires is home hardening—reducing and preventing the ignitability of homes. There are several things that are important in this regard, and chief among them are: a) ember-proof vents; b) fire-resistant roofing (not wood shingles) and sweeping any dry leaves or needles off the roof during fire season; c) rain gutter guards to keep combustible material from accumulating next to the roof; and d) reinforcing vinyl windows to prevent them from melting and being pushed inside by winds during a fire. See, e.g., Syphard et al. (2017).

Defensible Space Pruning is Next on the List: The second part of the fire-safe home equation is defensible space pruning within at most 100 feet from homes—and, in most cases, 60 feet or less around each home. This is not about cutting down trees; in fact, it is important to maintain tree cover for the cooling shade it provides. Defensible space is about reducing the most combustible material immediately adjacent to homes, especially dry grass, seedlings and shrubs, lower limbs (prune them to 6 feet above the ground), limbs that touch the house or deck (remove

these, but not the tree), and dead leaves and pine needles on the ground. Vegetation management beyond 100 feet from homes provides no additional benefit for home protection. See, e.g., Syphard et al. (2014).

Removing Trees Does Not Curb Fires, and Can in Fact Exacerbate Wildfires: Contrary to what we have been repeatedly told by the media and some politicians, removing trees from forests does not effectively curb wildfires and often tends to make fires burn more intensely and more rapidly toward homes, increasing threats to homeowners. While this may seem counter-intuitive at first, it makes perfect sense once it is understood. Denser forests and woodlands, with trees closer together, and often spaced closer than 10 feet, have higher canopy cover. This creates more cooling shade, reduces the ambient temperature, and increases relative humidity in the immediate vicinity. This microclimate creates conditions less conducive to wildfire spread. In addition, where trees are closer together they create a wind buffer that reduces the gusts that drive flames. When trees are removed, based on the outdated notion that more open forests are less flammable, the result is a hotter, drier, and windier microclimate that favors more intense, faster-moving fires. This is the lesson of the largest and most comprehensive scientific studies ever conducted on this question, by both independent scientists and U.S. Forest Service scientists in the Pacific Northwest. See, e.g., Bradley et al. (2016), Lesmeister et al. (2021).

I recommend that the provision preventing tree spacing of less than 10 feet be removed from any state-wide code that is adopted, and that defensible space be set at a maximum of 100 feet around homes, with the first 30 feet around homes treated as the most important, and home hardening treated as the top priority.

I would be happy to answer questions on these matters. For many dozens of scientific sources on this subject, please also see *Smokescreen: Debunking Wildfire Myths to Save Our Forests and Our Climate*.

Sincerely,

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