



A Washington State Chapter of the National Audubon Society  
P.O. Box 2524, Olympia, WA 98507  
(360) 352-7299 [www.blackhills-audubon.org](http://www.blackhills-audubon.org)

*Black Hills Audubon Society is a volunteer, non-profit organization of more than 1,300 members in Thurston, Mason, and Lewis Counties whose goals are to promote environmental education and protect our ecosystems for future generations.*

State Building Code Council  
Attn: Stoyan Bumbalov, Managing Director  
1500 Jefferson St. SE  
Olympia, WA 98501

November 3, 2023

RE: 2021 Wildland-Urban Interface Amendments

Dear Council Members:

Black Hills Audubon Society is a chapter with 1300 members of the National Audubon Society. Our region includes Mason, Thurston, and Lewis Counties, and our mission includes protecting habitat for wildlife and for humans. We hope that you will consider this letter in the discussion at your meeting on November 17 when the Wildland-Urban Interface Code (WUIC) will be on the agenda.

The current form of the WUIC has a multitude of problems—many are described in the September 28, 2023, letter from the Association of Washington Cities. We expect that you will find ways to solve those problems. One special problem is the low-resolution WA DNR map that is mistakenly based on population density instead of likelihood of wildfire occurrence. WA DNR and SBCC might look to other states' experience with creating maps to designate Wildland-Urban Interface areas. For example, California's map, updated in 2017, is based on wildfire fuel-loads on landscapes and the presence of residences. It uses high resolution satellite images that update in real time (see the references in the appended annotated bibliography for links to the map and how it was created).

However, even more important than resolving these issues is an overarching problem, i.e., the requirement to create defensible space around new and existing residences wherever WUIC applies--and the resulting loss of thousands of trees over the years that the code will be in effect.

Black Hills Audubon Society recognizes the good intentions behind the WUIC—the desire to reduce the danger to people and houses from wildfires.

**However, clearing trees to create defensible space around residences is not the answer. We support the use of ignition-resistant building materials and methods.**

As discussed below, recent wildfire science does not support the clearing of trees to create defensible space around residences. Instead, the residents of Washington state need to protect trees, especially in inhabited areas, and to plant more trees, not remove them.

In addition, allowing the defensible space requirements to take effect and then rescind them at the end of the SBCC's next 3-year code cycle in 2026 is not acceptable because of the confusion it will cause builders and property owners—and the thousands of trees that will be destroyed under the WUIC during 2024–2026.

**We urge you to remove all language related to the defensible space requirements of the WUIC code, by passing an emergency rule and, if necessary, your six-month amendment process, so that the code does not go into effect on March 15, 2024.**

### **Benefits of Trees:**

Trees provide many environmental benefits and will become more important in the future as Washington state's population increases and cities and suburbs become more dense. Trees remove carbon dioxide and other air pollution that causes asthma and increases the risk of cardiovascular disease, but, more importantly, they emit oxygen **which is required for life**. In addition, they provide shade to cool neighborhoods and reduce urban heat sinks that compound heat sicknesses and deaths during high heat events.

For Washington state, trees will play an ever more important role as global heating brings us more drought in summer and more rain, heavy rains, and storms in winter. Trees store moisture and prevent soil erosion and winter flooding. Additionally, trees stabilize slopes and shorelines, aid in stormwater management, shade and cool salmon-bearing streams, and provide essential wildlife habitat. Finally, because trees sequester carbon, increasing tree canopy is an essential component to local jurisdictions' plans to reduce greenhouse gases, such as the Thurston Climate Mitigation Plan.

### **Legislative Intent:**

The intent of the legislature in passing SB 1609 in 2018 and RCW 19.27.560 in 2020 was not to require the creation of defensible space around residences. Neither piece of legislation mentions defensible space—the language only refers to ignition-resistant building materials and methods. In addition, in 2019 when WA DNR staff asked the Attorney General's office about the legislative intent before beginning work on the WA DNR map, the AG stated that the map would only designate areas for home-hardening against wildfire through using ignition-resistant materials. Like us, WA DNR staff were shocked to find out in August 2023 that defensible space requirements were included in the WUIC.

## **Flawed public process:**

The public process for creating this version of the WUIC was seriously flawed because of the lack of effective public outreach and the non-participation of state agencies, local jurisdictions' staff, and citizen groups. Stakeholder groups included only fire marshals and representatives of the building industry.

Groups that would provide critical input were **not** represented, such as Washington state departments concerned with climate mitigation, shoreline management, air pollution, critical area protection, or stormwater management—or staff from cities and counties who create and enforce codes to protect and replant trees in residential areas.

Also missing were citizen groups such as landscaping associations, health care associations concerned with reducing asthma and deaths related to heat events, or environmental organizations dedicated to the protection of trees for climate mitigation or wildlife habitat.

The ineffectiveness of SBCC's outreach on the WUIC is demonstrated by the fact that not a single citizen affiliated with any of the above missing groups spoke at the public hearings held before passing the WUIC.

## **Conflicts with Washington State Laws:**

The code does not take into consideration the many state laws that conflict with the WUIC. These laws require the protection, not the clearing, of trees, such as:

- WA State Urban Forest Management Plan (RCW 76.15.005)
- WA State Climate Commitment Act's carbon sequestration goals
- WA State Growth Management Act, Chapter 365-190, which requires counties to protect habitat, including wetlands and critical areas, and to prepare for climate change
- WA Critical Area Regulations
- WA Shoreline Regulations
- WA Stormwater Regulations
- WA State DNR's Small Forest Landowner Program

## **Outdated wildfire science:**

The WUIC includes the sections of the International Building Code that require a defensible space of 30, 50, or 100 feet around residences. The size of the distance depends on the wildfire hazard, based on vegetation density and distance, slope of the land, and access roads. The International Building Code's Wildland-Urban Interface section is based on scientific studies prior to 2000. However, recent wildfire studies

show that creating defensible space up to 30, 50, or 100 feet by removing trees is not effective, as shown in the annotated bibliography appended to this letter.

### **Lack of funding for public education and outreach:**

Unlike most actions of the SBCC, which modify existing building codes, the WUIC is a totally new requirement for most property owners and builders in Washington State, with the exception of four counties (Adams, Yakima, Douglas and Kittitas Counties) that have adopted a version of the International Building Code's WUI section that requires ignition-resistant materials and defensible spaces.

The remaining Washington counties and cities have plans that RECOMMEND BUT DO NOT REQUIRE THESE PRACTICES. All but eight of the remaining counties in Washington (and many cities), have Community Wildfire Protection Plans (CWPP) created with WA DNR 2003 guidance that is updated regularly. Some local jurisdictions have Hazard Mitigation Plans (HMP) instead. All the CWPPs, and almost all the HMPs, recommend the use of ignition-resistant materials in construction and the creation of defensible space, and WA DNR has an education program to help home-owners apply these recommendations.

**However, instead of current CWPP recommendations, the WUIC would REQUIRE the use of ignition-resistant materials and methods and the creation of defensible space.**

Without a strong educational effort, the WUIC would be open to many different interpretations, creating a hodgepodge of WUIC enforcement across the state. Surely this was not the intention of the state legislature. Instead, the SBCC needs to ask for state funding to create written guidance, on-line and print educational materials, and even workshops and webinars to help local jurisdictions interpret the WUIC and to help the public to understand our new responsibilities.

Other states have implemented WUIC with sufficient time and educational programs. For example, California has had a version of the International Building Code's WUI provisions since 2008. A new provision of the California law was updated this year and requires a new 5-foot inner circle of defensible space (ember-resistant space) around residences within the WUI. The inner circle must be a hard surface with nothing that could catch fire: no under-eave storage, vegetation, window boxes, wooden fences, and so on. However, local jurisdictions will not enforce the new code until January 2024 while the state conducts an educational campaign.

### **Conflict with local jurisdictions' codes and their wildfire planning:**

While all state laws take precedence over local jurisdictions' codes, the WUIC, in particular, runs the risk of creating a lot of local resentment, administrative headaches, and even lawsuits since the WUIC makes it difficult or impossible to follow many parts of local jurisdictions' comprehensive plans, tree codes, shoreline management programs, stormwater codes, and habitat management.

However, a special problem is the WUIC's conflict with local jurisdictions' decades-long efforts to identify and mitigate wildfire risk, especially for inhabited areas. As part of writing a Community Wildfire Protection Plan (CWPP), each local jurisdiction has surveyed their fire-fighting resources, access roads, water availability, and dangerous land formations to identify the areas with most susceptibility to wildfire spread and the areas with the most wildfire vulnerability for residential buildings. These plans also prioritize local public agency actions, such as improving access roads or clearing brush, that can mitigate wildfire risk, especially to residential areas.

To what degree do WUIC requirements, especially the WA DNR map, supplant local jurisdictions' knowledge and planning for wildfire mitigation for residential areas? The WUIC has a very unclear procedure, finding of fact, for local jurisdictions to ask for variances from the WUIC. The SBCC should provide written guidance for the finding of fact procedure, and both the SBCC and WA DNR should take an active role in assisting local jurisdictions to preserve and apply hard-won knowledge about local conditions. Again, this means requesting funding for SBCC to supply this public assistance.

### **Conclusion:**

**In summary, the defensible space requirements in the WUIC violate legislative intent, result from a flawed public process, conflict with many state laws, use outdated wildfire science, conflict with local jurisdictions' codes, especially wildfire planning, and require state funding to explain and clarify the new code's workings to the public and local jurisdictions.**

Removing defensible space language with an emergency action will leave the rest of the WUIC intact. However, it will give the SBCC time to consult with wildfire science experts, state agencies, and environmental and other citizen groups, and to consider all the problems and unintended consequences of the defensible space requirements of the code. The SBCC will also have time to ask the state legislature for funding for outreach to local jurisdictions and the general public, and time to create guidance and educational materials to aid the roll-out of this complex code.

**We urge you to remove the defensible space language from all parts of the WUIC and the WUIC's references to defensible space sections in the International Building Code. Black Hills Audubon Society is one of the co-proponents of the Statewide Code Change Form submitted today by Michael Feerer, a form that lists the exact code change required to remove defensible spaces as a requirement from the 2021 WUIC amendments.**

Sincerely,



Charlotte Persons  
Black Hills Audubon Society Board of Directors and Conservation Committee

*Sam Merrill*

Sam Merrill  
Black Hills Audubon Society Conservation Committee Chair and Member of Board of  
Directors

## Short Annotated Bibliography

Charlotte Persons

November 3, 2023

### Recent Fire Science:

Maranghides, Alexander, et. al. A Case Study of a Community Affected by the Waldo Fire – Event Timeline and Defensive Actions. National Institute for Standards and Technology. NIST Technical Note 1910. November 2015.

<https://nvlpubs.nist.gov/nistpubs/TechnicalNotes/NIST.TN.1910.pdf>

Home Ignition Zone/Defensible space rating (based on 20 to more than 100 feet from the residence) is not correlated to no damage or no ignition in wildfires. “Current concepts of defensible space do not account for hazards of burning primary structures, hazards presented by embers and the hazards outside of the home ignition zone.” Page 3.

*Wildfire Prepared Homeowners’ Guide*. 2023. <https://wildfireprepared.org/wp-content/uploads/WFPH-Standard-2022-Homeowner-Guide.pdf>

The insurance industry's wildfire resiliency guide makes NO mention of wider landscape clearings. Just the 5' clearing immediately around a home and related strategies to reduce nearby debris, which is supported by science. The insurance industry has funded much of the wildfire research for decades and if anybody would readily call for a wider buffer it would be them, but they do not because they know the science does not support it.

Knapp et al. Housing arrangement and vegetation factors associated with single-family home survival in the 2018 Camp Fire, California. *Fire Ecology* (2021) 17:25.

[https://www.fs.usda.gov/psw/publications/knapp/psw\\_2021\\_knapp004.pdf](https://www.fs.usda.gov/psw/publications/knapp/psw_2021_knapp004.pdf)

In this study, the most important factors in houses’ survival in Paradise, CA, were age of the housing (perhaps related to roof condition), proximity of structures (houses, garages and sheds) to each other (closer than 68 feet from each other); and amount of canopy overstory within 100 to 350 feet of the house (perhaps because the windstorm before the wildfire caused trees to drop debris into roof gutters and where roof sections intersected since these trees themselves did not burn—embers were blown thousands of feet to the town).

Not important was whether houses were built before or after the 2006 California fire code changes. Also not important was defensible space of 100 to 360 feet. Although houses in Paradise were on lots of one-quarter to more than one acre and many homeowners had created a lot of defensible space, defensible space of 100 feet or

more was not a factor in home survival. The reason for defensible space is to slow down the fire so firefighters can defend homes. In the Camp Fire, firefighters could not defend homes because of the wind-blown speed of the fire and their focus on evacuating citizens. However, the authors believe that creating defensible space is still important when fire-fighters are available.

Knapp et. al. For a plain English discussion of the previous study, see this presentation by the authors at <https://www.publish.csiro.au/wf/WF13158>

Besides the conclusion in their study referenced above, the authors explain that the new thinking is that wildfire is inevitable in California and other parts of the West, and that citizens must do everything to harden their homes with a fire-resistant roof, tempered glass in windows near other structures, fire-resistant siding and other materials, frequent roof and yard debris removal, and so on, because firefighters may not be available.

In addition to the study's conclusions, photos show that in Paradise some fires started from embers smoldering and then igniting in low green vegetation next to homes. Other fires started from fences next to homes and objects stored near or against homes.

### **California's Wildfire Code and Map:**

**California's newest code – As a result of the photos in the video above and other studies of wildfires, California in January 2023 published a new defensible space code**, Assembly Bill 3074, that adds a new ember-proof area that extends 5 feet around each house. Within this area there are to be no vegetation, gates, fences, window boxes, objects, etc.--apparently pavement but maybe also bricks or stones might be acceptable. Low green foliage such as flower beds will be outside this 5 foot area. More will be revealed as there will be a year-long period of education before official enforcement in 2024.

**California's original code, Chapter 7A, passed in 2007**, requires both fire-resistant construction materials and methods for residences in the WUI AND a vegetation plan as required in California Fire Code Section 4906.

**The California WUI map**, updated in 2017, is based directly on remote sensing data and is based on fuel. The WUI areas are on the edges of forested lands. For the California WUI map, go to <https://www.arcgis.com/home/item.html?id=a4985d64969743db8feddf01c96c9435>

For more explanation on creating the map, see <https://www.nature.com/articles/s41598-022-09707-7>



“WUI areas in California were directly mapped using building footprints extracted from remote sensing data by Microsoft along with the fuel vegetation cover from the LANDFIRE dataset in this study. To accommodate the new type of datasets, we developed a threshold criteria for mapping WUI based on statistical analysis, as opposed to using more ad-hoc criteria as used in previous mapping approaches. This method removes the reliance on census data in WUI mapping, and does not require the calculation of housing density. Moreover, this approach designates the adjacent areas of each building with large and dense parcels of vegetation as WUI, which can not only refine the scope and resolution of the WUI areas to individual buildings, but also avoids zoning issues and uncertainties in housing density calculation. Besides, the new method has the capability of updating the WUI map in real-time according to the operational needs. Therefore, this method is suitable for local governments to map local WUI areas, as well as formulating detailed wildfire emergency plans, evacuation routes, and management measures.”

### **Fire Risk in Washington State:**

Groover, Heidi. Planning to buy a house in Washington? You may want to check the wildfire risk. *Seattle Times*. May 25, 2022.

<https://www.seattletimes.com/business/real-estate/planning-to-buy-a-house-in-washington-you-may-want-to-check-the-wildfire-risk/>

This article explains First Street Foundation’s map of wildfire risk in 2022 and 2052. Current risk is in Cascade, Okanagan, and Rocky Mountain ranges and some shrub-steppe. Risk is defined as a 1% chance of wildfire over 30 years. For example, their map shows 0% of homes at risk in Western Washington now and in 2052, and 76% of homes at risk in Chelan now and 80% of homes at risk in 2053. In 30 years, the Foundation estimates that wildfire risk will be 30% higher in some areas.

Moss, Rebecca. How wildfire risk scoring puts WA homeowners in insurance jeopardy. *Seattle Times*. September 19, 2023. <https://www.seattletimes.com/seattle-news/times-watchdog/how-wildfire-risk-scoring-puts-wa-homeowners-in-insurance-jeopardy/>

The insurance industry companies are using their own maps of insurance risk to increase premiums or deny coverage. The real-life examples are from people living in Eastern Washington. The article explains new legislative solutions to this dilemma already enacted in other states.

Blow, Abhi. South Puget Sound Cities Now at High Risk for Wildfire. *The Urbanist*. April 7, 2023. <https://www.theurbanist.org/2023/04/07/south-puget-sound-cities-now-at-high-risk-for-wildfire/>

Hilary Franz, Commissioner of the Board of Natural Resources, is saying exactly the opposite ideas as in the first two articles about wildfire risk in Washington state. According to Franz, because of the high population density, it is Western Washington that is at highest risk of wildfire, not the areas of the state with most risk of wildfire occurrence. “The state now considers Pierce County, the second most populous county in Washington, high wildfire-risk in addition to Mason and Thurston.” This article was published just days after the Washington Building Code Commission passed the 2021 WUI Code.

The map of wildfire risk shown in the article is the same one referenced in the 2021 WUI Code. According to the article, the cores of cities are not at risk because the wildfires will occur first in the WUI in the small cities around the city cores (presumably because the fires will be extinguished before they reach the city cores). The article states that the high fire risk is because of increased drought in Western Washington. 30% of fires last year were on the western side of the Cascade Mountains.

The WA DNR program Wildfire Ready Neighbors, begun two years ago in Eastern Washington, is now extended to Western Washington to help property owners assess what steps they need to take to reduce their wildfire risk, i.e. defensible space or home-hardening.

*FEMA Wildfire Risk Index map.* <https://hazards.fema.gov/nri/map> (Choose “Wildfire” under “Risks” at the upper left.)

The definition of wildfire risk in *the Urbanist* article, based on population density, is similar (but simplified) to the Wildfire Risk Index calculated by FEMA and shown on the map.

From the Section called “Learn More”: The FEMA Wildfire Risk Index is calculated only partially based on wildfire hazard probability (expected annual loss in dollars). That number for each county or census code is combined with Community Vulnerability and Community Resilience to calculate the Risk Index. “According to the National Risk Index, higher Expected Annual Loss, higher Social Vulnerability, and/or lower Community Resilience increase your overall risk.”

From a frequently asked question section:

“Why does my county or Census tract, which is known for a natural hazard type, have a low Risk Index score for that hazard type?”

Even if a community has well-known activity for a hazard type, the community's risk for that hazard type may be low because its people or assets are less vulnerable to the hazard type's impacts and/or more resilient when impacted.”

Interesting: When Social Vulnerability is chosen to display on the FEMA Risk Index map for all risks or any individual risk, areas of high population density have high Social

Vulnerability. Likewise, they generally have low Community Resilience. Community Resilience actually seems to be a measure of income per capita in the county or census code area.

As a result of this method of calculating the Wildfire Risk Index, for example, Thurston County has a Wildfire Risk Index of 96, called “relatively high” while Chelan County has a Wildfire Risk Index of 86.92, called “relatively moderate”.