
SUBSTITUTE HOUSE BILL 1381

State of Washington

68th Legislature

2023 Regular Session

By House Environment & Energy (originally sponsored by Representatives Dye, Lekanoff, and Pollet)

READ FIRST TIME 02/17/23.

1 AN ACT Relating to salmon-safe communities; adding a new section
2 to chapter 90.48 RCW; and creating a new section.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

4 NEW SECTION. **Sec. 1.** (1) The legislature acknowledges the
5 scientific consensus that there is a well-documented problem of urban
6 heat islands. The buildings, roads, and infrastructure that make up
7 urban environments make cities hotter than surrounding rural areas.
8 The impervious surfaces used for roofs, streets, sidewalks, and
9 parking lots can get much hotter than vegetated areas, causing
10 surface temperatures in cities to be several degrees hotter in the
11 midday than in rural areas. At night, these same materials release
12 heat more slowly, keeping urban air temperatures higher than
13 overnight temperatures in most rural areas.

14 (2) Cities tend to have fewer trees and less vegetation resulting
15 in a deficit of shade to keep areas cool. Cities also have more
16 industrial heat sources, including cars and air conditioners. Cities
17 tend to have many more extremely hot days each year, on average, than
18 nearby rural areas. According to one recent study, over the past 10
19 years, cities had an average of at least eight more days over 90
20 degrees Fahrenheit each summer, compared to nearby rural areas. The
21 difference between urban and surrounding rural temperatures is also

1 widening; temperatures have been rising in urban areas faster than in
2 the surrounding rural areas since 1970.

3 (3) The legislature finds that the phenomenon of urban heat
4 island impact is detrimental to several significant and long-standing
5 state policy goals, including the promotion of human health, energy
6 conservation, and the preservation of water quality that sustains
7 salmon. It is well understood that higher urban summer temperatures
8 pose serious human health risks, and these health risks are
9 inequitably distributed. Hotter urban summers can lead to increased
10 energy demands to cool buildings, which runs counter to long-standing
11 state policy of promoting energy conservation. Studies have also
12 documented the impact of urban heat island on the temperature of
13 streams. Streams draining through urban heat islands tend to be
14 hotter than rural and forested streams because of warmer urban air
15 and ground temperatures, paved surfaces, and decreased riparian
16 canopy. Urban infrastructure routes runoff over hot impervious
17 surfaces and through storm drains directly into streams and can lead
18 to rapid, dramatic increases in temperature, which can be lethal to
19 aquatic life.

20 (4) The legislature recognizes that this problem poses a threat
21 that impacts the environment of our state. The Pacific Northwest,
22 with its reputation for rain, is not immune to the urban heat island
23 effect. Seattle is among the top 10 cities for most intense urban
24 heat island effect, with greater than four degrees Fahrenheit
25 difference between the city and nearby rural areas. Portland, Oregon
26 was among the top 10 cities with the most intense summer nighttime
27 urban heat island over the past 10 years.

28 (5) Therefore, the legislature intends with this act to conduct a
29 pilot study of the effect of the urban heat island effect on the
30 temperature of Puget Sound lowland streams in urban areas, and to map
31 and make public the results of the monitoring and analysis.

32 NEW SECTION. **Sec. 2.** A new section is added to chapter 90.48
33 RCW to read as follows:

34 The department, in collaboration with the department of fish and
35 wildlife and the department of natural resources, must evaluate the
36 urban heat island effect and other factors influencing water
37 temperatures in Puget Sound lowland streams in urban areas. This
38 evaluation must include:

1 (1) By June 30, 2025, the department, in collaboration with the
2 department of fish and wildlife and the department of natural
3 resources, must collect, synthesize, assess usability, and identify
4 gaps of available data needed to conduct a:

5 (a) Broad scale synthesis in urban areas of riparian habitat,
6 land cover, water temperatures, air temperature, and tree canopy; and

7 (b) Pilot effectiveness monitoring study focused on comparing
8 water temperatures of Puget Sound lowland streams relative to the
9 land cover and tree canopy in urban areas draining to those streams.

10 (2) By June 30, 2025, the department, in collaboration with the
11 department of fish and wildlife and the department of natural
12 resources, must design and propose a coordinated pilot scale
13 monitoring study focused on assessing and mapping water temperatures
14 in urban areas, to be carried out between July 2025 and July 2029,
15 and propose any resources needed to produce the broad scale synthesis
16 described in subsection (3) of this section.

17 (3) Subject to the availability of amounts appropriated for this
18 specific purpose, by June 30, 2027, the department, in collaboration
19 with the department of fish and wildlife and the department of
20 natural resources, must produce a report that synthesizes available
21 data on riparian habitat, land cover, water temperatures, air
22 temperature, and tree canopy on a broad scale. The synthesis report
23 should include relevant existing agency data, maps, or analyses
24 related to high-resolution change detection, tree canopy,
25 temperature, and riparian habitat.

26 (4) Subject to the availability of amounts appropriated for this
27 specific purpose, by June 30, 2027, the department, in collaboration
28 with the department of fish and wildlife and the department of
29 natural resources, must produce a publicly available website to
30 display the riparian habitat, land cover, water temperatures, air
31 temperature, tree canopy, and urban heat monitoring and mapping data.
32 Data must be published in data viewers or web maps and must be made
33 accessible and usable by the public. Data must also be compatible
34 with the department of health's environmental health disparities map.

35 (5) Subject to the availability of amounts appropriated for this
36 specific purpose, between July 2025 and July 2029, the department, in
37 collaboration with the department of fish and wildlife and the
38 department of natural resources, must carry out a pilot scale
39 monitoring study focused on addressing water temperatures in urban
40 areas of Puget Sound lowlands including factors such as land cover,

1 air temperature, tree canopy, habitat, and the urban heat island
2 effect.

3 (6) By June 30, 2030, the department, in collaboration with the
4 department of fish and wildlife and the department of natural
5 resources, must produce a report to the governor's office and the
6 appropriate committees of the legislature on the findings of the
7 pilot scale monitoring study investigating urban water temperatures
8 and factors such as land cover, air temperature, tree canopy,
9 habitat, and the urban heat island effect, that have significant
10 correlation to reduced or elevated water temperatures.

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