Calgary is losing 'greenness,' Statistics Canada data show

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Calgary has added more than 350,000 people in the last two decades, the vast majority of them housed in sprawling new neighbourhoods.

JEFF MCINTOSH/THE CANADIAN PRESS

If urban green space is the lungs of a city, Calgary risks becoming wheezy.

The Prairie city has been struggling to increase its modest tree cover, with budget woes hampering long-term plans to double the canopy. And new federal data show Calgary – which declared a climate emergency in November of 2021 – had the biggest drop among major Canadian cities in how green it is overall.

The findings, which were published in November by Statistics Canada, were based on analyzing the colour of summertime satellite images. The study used 2000

through 2004 as the baseline period and looked again from 2018 through 2022. Over that time, the total land area of Calgary went from being 54.1 per cent green to 37.6 per cent.

This 30.5-per-cent drop was roughly double the 13.3-per-cent drop in the greenness of Canada's large urban centres overall, during that same period. The two-decade downward trend comes amid accelerating suburban expansion – and in spite of municipal leaders across the country voicing increasing concern about climate change.

Urban greenness decrease over time, top five largest urban population centres
Percentage of land area that is classed as green
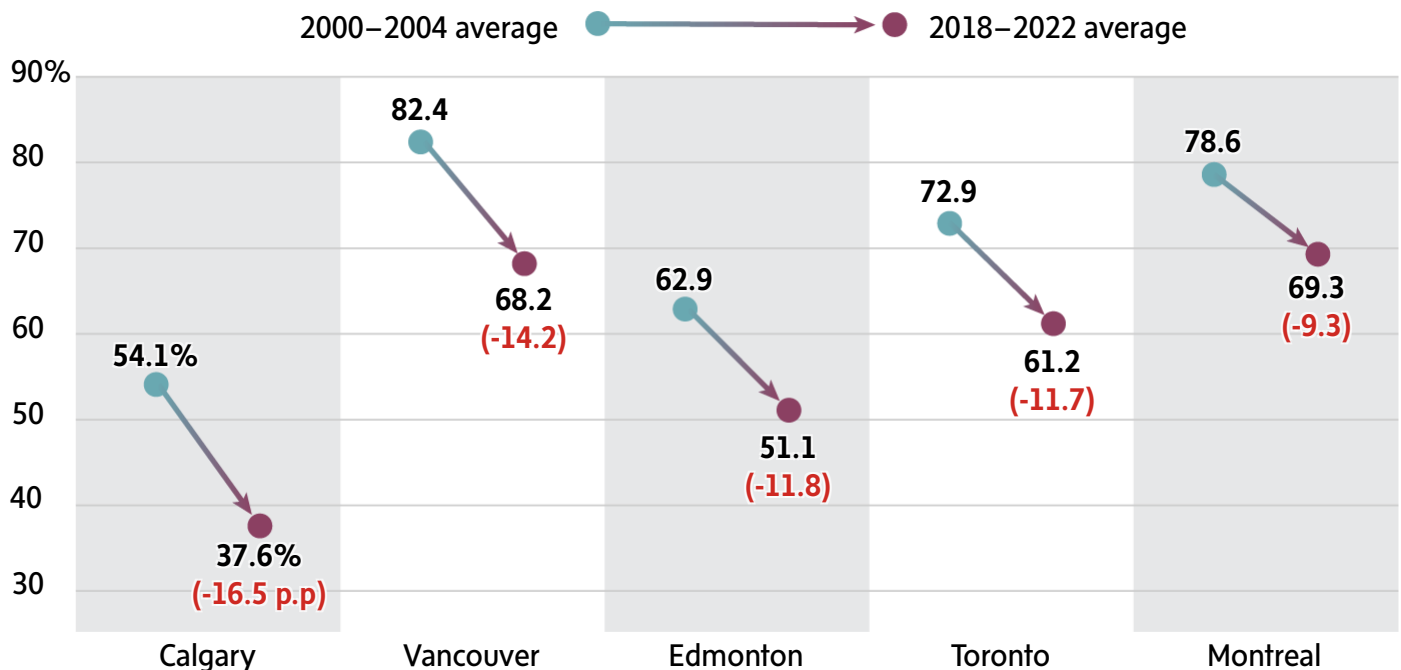
MURAT YÜKSELIR / THE GLOBE AND MAIL, SOURCE: STATISTICS CANADA

And experts say this reduction poses numerous problems.

Urban green space provides crucial benefits. It removes and stores carbon. It can help reduce ambient heat, improve flood-proofing and provide habitat for birds, pollinators and other biodiversity. It provides a boost to our mental health. And the presence of trees alongside roads has been shown to increase safety by subconsciously inducing drivers to slow down.

City staff in Calgary believe the biggest reason for the drop is the development of formerly greenfield lands within urban boundaries. The city has added more than

350,000 people in the last two decades, the vast majority of them housed in sprawling new neighbourhoods.

Matthew Sheldrake, acting manager of the growth and change strategy at the City of Calgary, said the city is doing better since 2009 at encouraging intensification, though this type of housing still constitutes a small minority of new residences. He says there may need to be a more comprehensive approach to balancing the goals of meeting housing demand and protecting the environment.

"Sometimes they conflict … we have policies for both and sometimes we have to make tough choices," Mr. Sheldrake said.

"I myself have [contributed to] reports that we've written where there was almost a cognitive dissonance in the report, where we both acknowledged what we were trying to do around affordability and new housing supply and we were also aware of what we were doing as it related to greenness and climate change."

Urban greenness in all population centres by province, 2022
Percentage of land area that was classed as green
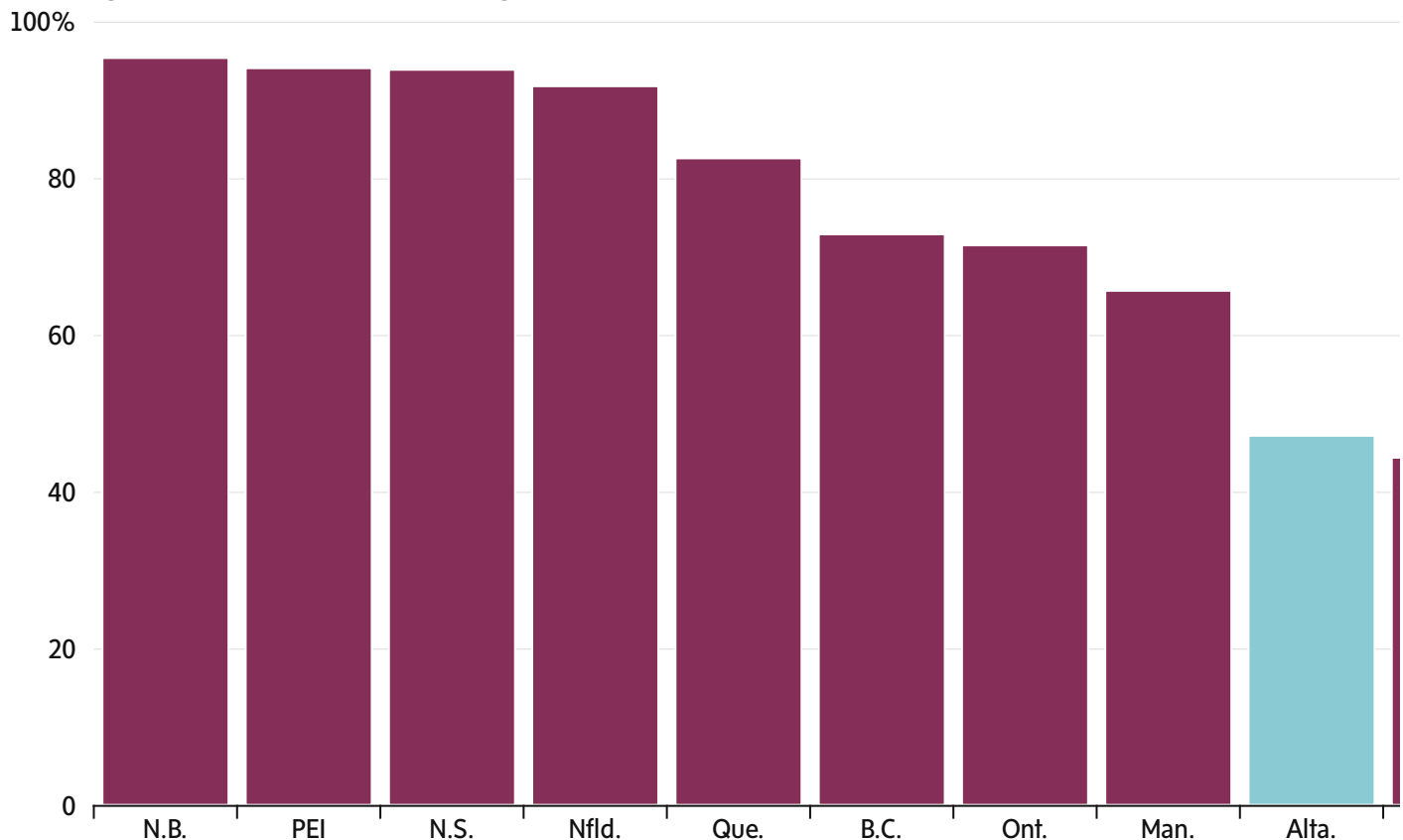
THE GLOBE AND MAIL, SOURCE: STATISTICS CANADA

DATA   SHARE

Calgary is not alone in struggling with such contradictions.

Toronto declared a climate emergency in 2019, yet the city is rebuilding an elevated expressway on its waterfront, generating a vast amount of emissions. Vancouver has a climate emergency action plan but allows only very modest density in much of the city, pushing people to live farther out and lengthening their commute.

At the same time, the United Nations has declared 2021 through 2030 the "decade of ecosystem restoration."

Ian Leahy, vice-president of urban forestry at the U.S. non-profit conservation organization American Forests, said that public health savings, ecosystem services and other benefits mean that every dollar invested in trees pays off threefold.

"As our cities are warming, as our climate is warming, it's becoming obvious that [trees are] emerging into basically life-saving infrastructure," he said.

On this front, Calgary has been lagging. The city has a modest 8.25-per-cent tree cover, down slightly after a lashing of bad weather in 2014. The plan is to double the canopy by 2060, which would require planting 3,500 trees annually to maintain existing stock plus another 4,000 for expansion.

However, budget cuts in 2019 left staff unable to hit that mark. Instead, focus turned to increased pruning in an attempt to make the urban forest more resilient. This year's budget includes $8-million over four years for habitat restoration. This will fund 2,100 new trees annually – about half the number required to meet canopy expansion plans.

"Society generally thinks of landscape as something to be added on at the end, that it's a nice-to-have rather than an essential life service," said Bev Sandalack, professor in the faculty of environmental design at the University of Calgary.

The 16.5-percentage-point drop in Calgary's greenness, as measured by Statistics Canada, was a much bigger slump than in nearby Edmonton – where overall greenness fell 11.8 percentage points over the same period. Drops in the other biggest Canadian cities ranged from a low of 9.3 percentage points in Montreal to 14.2 percentage points in Vancouver, which ranked second worst.

The agency derives its data from satellite imagery, using a comparison called a Normalized Difference Vegetation Index to calculate how literally green areas are. The City of Calgary said it did not participate with Statistics Canada on the survey and was not aware of it until the findings were published.

Urban greenness in Calgary, 2000 to 2022

Percentage of land area that was classed as green

Land classed as green   ☐ 2021 population centre boundary

2022: **33.7%**

2022

33.7%
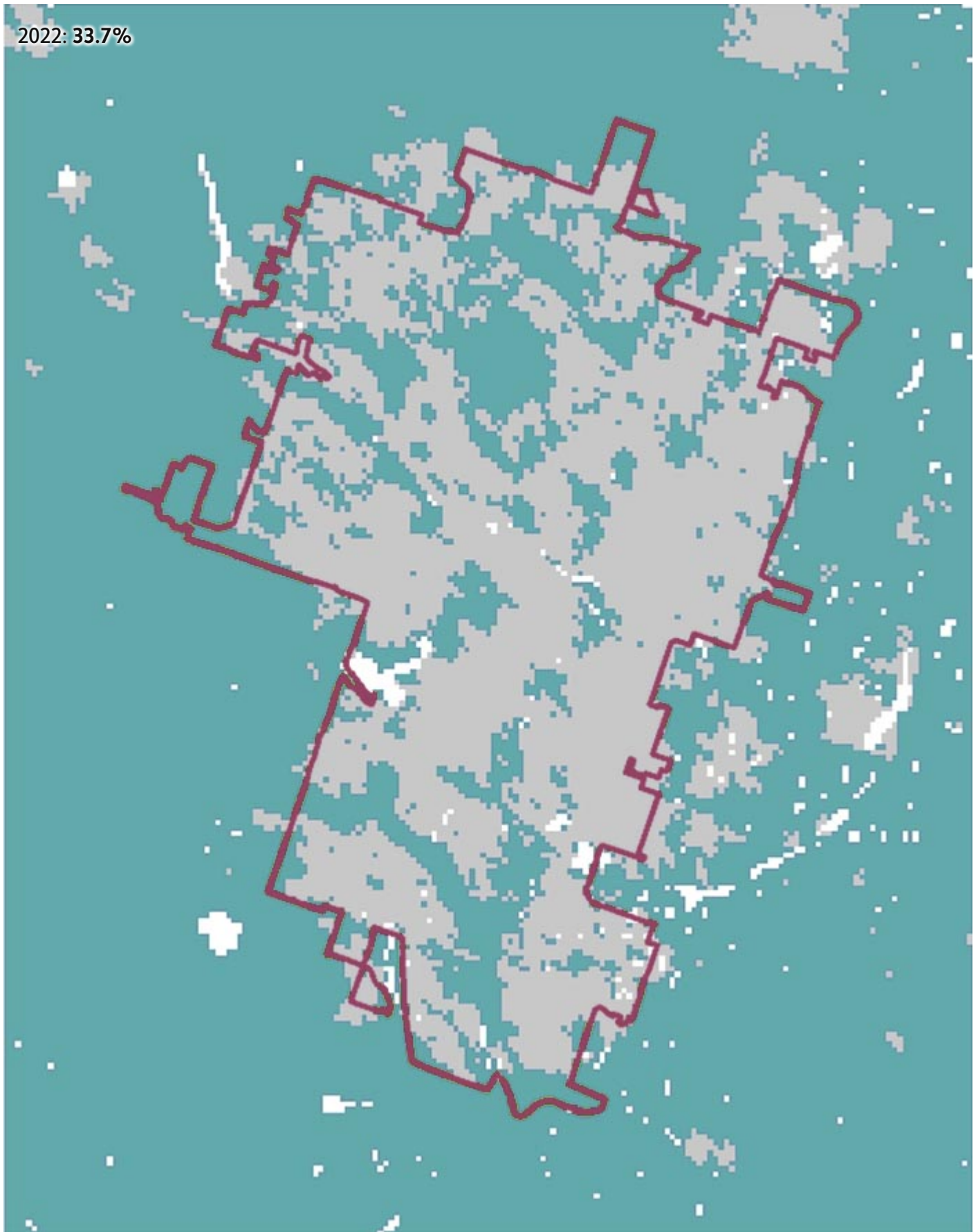
The agency, which says the analysis was done as part of its "census of environment" program, noted that urban vegetation helps "contribute to more livable communities and overall quality of life for residents."

But Dr. Sandalack said too often such benefits haven't been taken seriously.

"If something's going to get cut in the budget, it's like okay, we'll cut soft things like landscape, like trees – rather than really valuing them properly and saying, they need to be at the top of the pyramid," she said. "I think that climate change may be one of the motivators that gets cities to think about this thing differently."