

Foxtail Seed Strategy

ISSUE

This report provides background and outlines a collaborative strategy to begin to address foxtail barley infestations in Saskatoon in 2021.

BACKGROUND

City Council, at its regular Business Meeting on September 28, 2020 resolved:

“That Administration report back with a strategy for a coordinated foxtail response in the upcoming growing season. This may include working with land developers, lot owners, Parks Division, Community Standards Division, and the Fire Department to ensure that the many sources of foxtail can be dealt with proactively in 2021.”

Background regarding Foxtail dispersion, regulation and complaints received is summarized in Appendix 1.

CURRENT STATUS

Foxtail barley (*Hordeum jubatum* L.) (Foxtail), a type of native grass designated as a nuisance weed under the provincial *Weed Control Act*, has proliferated within Saskatoon (City) limits in recent years, with varying concentrations found in parks and open spaces, as well as in partially developed and unserviced land holdings. The Rosewood, Evergreen, Brighton, and Kensington neighbourhoods are a few of the new developments that have areas of significant Foxtail infestations. Issues arise for pets and for residents in new neighbourhoods who deal with Foxtail, in and adjacent to, their yards. For pets, the barbed seed heads of Foxtail can embed themselves in soft tissues and lead to infection and even death if left untreated.

DISCUSSION/ANALYSIS

To reduce the occurrence of Foxtail, a multi-year and multi-pronged approach is recommended. This includes an increased level of education and awareness, a combination of timely control techniques (mowing, herbicide application or tillage), a collaboration with the Development industry and an overall higher degree of preventative Foxtail control efforts within, and adjacent to, developing neighbourhoods.

The Parks Department has led a collaborative approach to engage all involved internal Departments and major land developers through the Developers' Liaison Committee, including subsequent discussions with Dream Development and Saskatoon Land. As a result of these discussions, a Foxtail Strategy is proposed to begin in early 2021 and then be refined and continue to evolve in future years. The Foxtail Strategy is split into two distinct initiatives – proactive, to minimize the future occurrence of Foxtail, and management of areas where there are current problems with weeds, including Foxtail.

Specifically, the strategy is based on the following principles:

1. Communication/Education about Foxtail and potential control strategies;
2. Implementation of Effective Control strategies;
3. Monitoring and Enforcement; and
4. Land Development Process Improvement.

Foxtail Strategy – Proactive Response

- **Development of a Foxtail Mitigation Guide and Communications Plan:** It is proposed that a Communication Plan be developed that includes the creation of a Foxtail Mitigation Guide (in advance of the 2021 growing season) that clearly communicates the contents of the *Weed Control Act* and City bylaws, outlines the *Weed Control Act* and bylaw process when Foxtail becomes an issue (total size or area of patch or infestation), and prescribes the best course of action based on size of infestation, cost, and adjacent land uses. This Foxtail Mitigation Guide would be created in conjunction with developers and would be made available to all landowners and provide clarity and continuity for all parties – residents, developers, and the City. In addition to the Foxtail Mitigation Guide, the communication plan would include adding plain language information on the website, creating additional educational materials in future years (i.e. brochure, flyer and/or utility bill insert), and/or social media promotions. An example of content included in the Guide would be:
 - **The Use of Cover Crops Where Feasible:** Cover crop such as clover, alfalfa, oats, or rye would help to manage subsurface moisture/water table – cover crops help minimize Foxtail by outcompeting it. Cover crops have been used successfully on spaces waiting for development such as the Greenway. Sustainability Department and Parks Department (specifically the Naturalized Program) could provide guidance and advice based on experience with naturalized parks and open spaces. Dream Development and Arbutus will consider cover crops in the future on areas with suitable soil; Saskatoon Land has advised that the use of cover crops is unlikely as most areas cannot be seeded with proper equipment where municipal improvements have been installed and top soil has been removed from the developing area.
- **Examine the Potential for a Weed Management Plan:** In addition to Foxtail, numerous weeds are present in Saskatoon. Other municipalities¹ have created Weed Management Plans to provide strategic weed management of natural areas, parks, and green spaces to protect native ecosystems and outline an integrated approach. As an initial step, all relevant internal Departments will undertake discussions on the cost/benefits and resourcing requirements for such a plan, including a larger corporate integrated pest management strategy/project.
- **Ongoing Communication and Engagement:** At the end of 2021, Parks will attend the Developers' Liaison Committee to review 2021 season results, the

¹ [Weed Management Plan for the City of Joondalup \(Australia\)](#)

effectiveness, and identify further improvements to be made to this strategy. The Parks Department will provide updates in the Parks Year End Report on progress, outstanding issues, planned improvements, and reporting on KPIs, such as reduction in Foxtail complaints year over year.

Foxtail Strategy – Management of Current Problem Areas

- **Formalize and Confirm the Process Flow and Communication of Foxtail and all Weed-Related Concerns:** Currently, numerous Departments – Parks, Community Standards, Saskatoon Land, Saskatoon Fire, and Service Saskatoon – receive complaints about Foxtail. Long-term, it is crucial for complaints and mitigation to be managed in a clear manner with a process agreed to and understood by all Departments involved and the development community. A coordinated process of sharing Foxtail complaints and identification of geographical areas with infestations will be a cornerstone of this process.
- **Increase Dedicated Support for Monitoring and Issuance of Weed Orders in Problem Areas:** Larger tracts of land, such as development lands and large city construction projects, could be monitored and documented for early stages of Foxtail infestation, potentially through an aerial inventory or through the provision of proactive inspection services. For 2021, Parks will redirect resources to establish a dedicated seasonal weed inspector position to ensure additional inspections of weeds, including Foxtail. Parks will be in communication with developers, who will be asked to provide the weed inspector with a list of control activities (such as spraying), frequency/approximate timing and general areas of service. Progress and control effectiveness can then be monitored in the field by the City's Weed Inspector. Enforcement of the Weed Act will also be applied as required. Weed inspection services will be reviewed at the end of the season to identify future service improvements or resources that may be required to deliver improved weed and Foxtail monitoring and control. Inspection performance will be highlighted in the Parks Department's Annual Report.
- **Signage:** Foxtail can become a problem in, and adjacent to, newer parks. Seasonal signage at these locations would advise that the issue is being addressed, and to ensure pet owners are aware of the health risks that foxtail seed poses to their pets. The Parks Department will further investigate the number of appropriate locations, sign type, messaging and identify costs associated with purchase, installation, and removal of signage. Signage for select priority problem areas will be installed for the 2021 season with the number of signs being dependant on availability of budget resources. Additional signage if required will be prioritized as the department allocates resources for the 2022 budget.
- **Review the option of herbicides for use on land with Foxtail proliferation:** Saskatoon Land trialed the application of herbicide on limited Foxtail areas in 2019 with success. Although herbicide will be effective in killing growing plants, there will still be a large bank of dormant Foxtail and other weed seeds in the soil ready to germinate and re-infest the area the following growing season. It should be noted that using herbicides over larger areas can lead to significant costs,

environmental, and health concerns. In 2021, Arbutus has advised they will expand spraying efforts; Dream Development has committed to an early spray herbicide program in Brighton; Saskatoon Land has advised that spraying will continue to be limited to small, concentrated areas of significant concern due to cost.

- **Establish a Response Strategy for Areas with Significant Issues:** Trouble spots in established parks will need to be inventoried and managed using a multi-year approach that would include: herbicide use, mowing before seed set, mowing and raking after seed set, and in areas where topsoil is present, establishment of other grasses to outcompete Foxtail over the course of five or more years. For unserviced land, it may involve the use of delayed stripping, cover crops, strategically timed mows, tillage, and herbicide use. An inventory of city – wide Foxtail problem areas will be pursued as well.

FINANCIAL IMPLICATIONS

In 2021, seasonal signage at high-priority Foxtail locations will be trialed with existing funding – estimated cost of production, installation, and take-down is estimated at a maximum of \$1,000 per sign. In 2022 and beyond, additional funding may be requested for additional signage installation. Based on previous consulting work of a similar nature, it is estimated the cost to develop a comprehensive Weed Management Plan to be \$80,000; this amount is currently unfunded. Additional funding details related to the strategies outlined above will be forwarded for consideration as part of the 2022 budget deliberations.

OTHER IMPLICATIONS

There are no other implications.

NEXT STEPS

For 2021, planned improvements include development of the Foxtail Mitigation Guide and Communications Plan, formalization of the process for complaints, and ongoing communication and engagement. Arbutus and Dream Development have committed to additional spraying in problem areas in 2021; Saskatoon Land will mow problematic areas earlier and more often in developing neighbourhoods to limit Foxtail growth and seed proliferation. All other noted components to help control Foxtail will depend on resourcing and subject to a more formalized Weed Control strategy and additional/redirected staff time. The Administration will report back in winter 2021-2022 on the effectiveness of the improvements made in 2021, complaints received, and any additional amendments to existing bylaws and/or policies that may be required.

APPENDIX

1. Foxtail Background – Dispersion, Regulation, and Complaints Received

REPORT APPROVAL

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