NAVIUS® Flex

# Navius® Flex Vegetation Management Guide

envu® Industrial Vegetation Management

## Purpose of this guide

This guide is designed to serve as a practical, field-ready reference for vegetation managers using Navius® Flex herbicide. It integrates product knowledge, application best practices, performance optimization, stewardship, and integrated vegetation management (IVM) principles to support consistent, long-term control of broadleaf weeds and brush while protecting people, wildlife, desirable vegetation, pollinators and sensitive environments.

## Product overview: What is Navius Flex?

Navius Flex is a wettable granule herbicide containing two complementary modes of action: aminocyclopyrachlor (ACP; Group 4) and metsulfuron-methyl (MSM; Group 2). It is registered for use in industrial vegetation management sites including utility corridors, rights-of-way, roadsides, railways and other non-crop areas. **The formulation delivers broad-spectrum weed and brush control with low use rates, long residual activity, and no grazing or haying restrictions when used according to the label.**

### Pretreatment and posttreatment results

Pretreatment (2022)

Two years posttreatment

Three years posttreatment

Navius Flex controls brush and promotes grass regrowth while supporting habitats for pollinator species.

## How does Navius Flex work?

Aminocyclopyrachlor mimics an excessive dose of the plant hormone auxin, disrupting normal growth processes and causing uncontrolled growth responses that ultimately lead to plant death. Metsulfuron-methyl inhibits acetolactate synthase (ALS), preventing the production of essential amino acids required for normal plant growth and development. Together, these actives are absorbed through foliage and roots and translocated to actively growing tissues. This systemic movement weakens underground reserves, suppresses regrowth, and reduces root suckering, providing longer-term brush and tree control compared to products that cause only top-growth injury. Uptake occurs primarily in broadleaf species, allowing established grasses to tolerate applications.

## Species controlled

Navius® Flex herbicide provides control or suppression of a wide range of broadleaf weeds and woody brush species commonly encountered in industrial, utility and non-crop settings. Species controlled or suppressed include trembling aspen, balsam poplar, willow and sandbar willow, western snowberry (buckbrush), wild rose, and selected conifer species such as spruce, fir and pine within labelled size limits. Control longevity depends on application rate, plant size and density, environmental conditions, and posttreatment competition. Higher labelled brush rates support longer retreatment intervals and reduced resprouting. Always consult the product label for the complete list of species and specific use directions.


*Two-year continued control of western snowberry*

## Where Navius Flex fits best

Navius Flex is ideally suited for sites where long-term weed and brush control is required alongside preservation and release of desirable grasses. It performs well as a foundation product within IVM programs and is particularly effective in utility corridors, industrial rights-of-way, roadside maintenance and areas where reduced retreatment frequency is a key objective.

*Black spruce*

### Targeted Conifer Control for ROW Management

Managing conifer species throughout the full right of way – not just at corridor edges – helps prevent future interference with infrastructure and reduces the need for repeated mechanical clearing. A selective, herbicide-based approach supports long-term corridor stability and efficient maintenance.

## Application rates and use patterns

Navius Flex offers a flexible rate structure depending on target vegetation. Weed control applications are made at 167 g/ha with a minimum of 200 L/ha of water. Low brush control uses 334 g/ha with at least 500 L/ha of water. High brush and tree control applications use 499 g/ha with 500–1000 L/ha of water. Higher spray volumes improve coverage and consistency on dense or woody targets. Rate selection should reflect species size, density, site objectives and desired length of control. Selecting appropriate brush rates is critical to minimizing resprouting and extending retreatment intervals.

## Optimizing performance and application timing

For optimal performance, applications should be made when target vegetation is actively growing and not under stress. Brush species must be fully leafed out, and applications should occur prior to fall colouration. Warm temperatures and adequate soil moisture enhance herbicide uptake and translocation, while drought, cold temperatures, or saturated soils may delay symptom development or reduce overall control. Thorough and uniform foliar coverage is essential, particularly for brush and tree species with dense canopies, waxy cuticles or needle-like foliage. Navius Flex requires the use of a label-approved surfactant to improve spray retention and penetration. Higher surfactant rates within the labelled range are recommended when targeting hard-to-control brush species, including mature woody plants and conifers, or when foliage is dense or waxy.

## Rainfastness and weather considerations

Navius® Flex herbicide is rainfast 4 hours after application. Rainfall prior to this interval may reduce herbicide uptake and performance. Avoid applications when rainfall is forecast within 4 hours, during gusty winds or under dead-calm conditions that may indicate temperature inversions. Light, steady winds that support on-target deposition are preferred.

## Reentry period

**Non-Crop Areas**
*(e.g., rights of way, utility corridors, industrial vegetation management sites)*
Do not enter or allow worker entry into treated areas until sprays have dried.

## Managing spray drift and off-target movement

Effective drift management is essential to protect sensitive vegetation and maintain stewardship standards. Applications should be made using coarse to very coarse droplets as defined by ASABE standards. Spray pressures should be kept as low as practical while maintaining adequate coverage, and boom height should be minimized. Drift-reduction technologies or additives should be used when required, particularly near sensitive areas or during aerial applications. Do not apply when wind speeds exceed label recommendations or when inversion conditions are present. Avoid direct spray deposition within the drip line of desirable trees and shrubs adjacent to treated rights-of-way and managed corridors. Although Navius Flex is applied to foliage, aminocyclopyrachlor is root active and non-target plants may be affected if herbicide reaches the root zone. Maintain appropriate buffers and avoid spraying bare soil beneath tree canopies near shelterbelts, ornamentals and other valued vegetation.

## Water quality and spray solution management

Water quality plays a critical role in Navius Flex performance, particularly due to the sulfonylurea component. Spray water should ideally have a pH between 5 and 7 and be free of excessive hardness and sediment. Low spray water pH can reduce the stability of metsulfuron-methyl due to acid-catalyzed hydrolysis. Spray solutions with a pH below neutral may shorten tank-mix stability, particularly if the solution remains in the tank for extended periods. Where acidic water sources are used, applicators should minimize mix time and follow label-approved water conditioning practices. In regions where spray water is naturally alkaline, which is common across parts of the Prairies and other areas of Canada, water pH should be considered as part of spray solution management to support consistent performance. Where required, add water conditioners or ammonium sulfate before herbicide addition. Follow proper mixing order: water first, conditioners, dry formulations, liquid products and adjuvants last.

## Adjuvant and tank-mix guidance

Navius Flex requires an effective adjuvant to optimize foliar penetration and uptake. Methylated seed oils or esterified vegetable oil adjuvants such as Hasten® NT are recommended at up to 1% v/v in accordance with label directions. When tank-mixing with glyphosate, water quality should be addressed first, and oil-based adjuvants should not be used at unnecessarily high rates, as excessive oil can reduce glyphosate translocation within the plant. Ammonium sulfate can be beneficial in tank mixes by conditioning hard water and improving glyphosate performance; however, spray solution pH and mix time should be managed to ensure compatibility with all products in the tank mix. Follow the strictest adjuvant requirement in the tank mix while maintaining label compliance.

## Troubleshooting poor control

When expected control is not achieved, common contributing factors include application timing, plant stress, water quality, coverage and rate selection. Applications made to drought-stressed or dormant vegetation may result in reduced activity. Insufficient spray volume or incomplete coverage (especially on brush) can limit uptake. Low spray water pH or turbidity may reduce metsulfuron-methyl performance. Rainfall within 4 hours of application, temperature inversions, or using rates below those recommended for species size and density can also reduce control. Evaluating these factors can help identify causes of reduced performance and guide corrective actions for future applications.

## Avoiding control failures

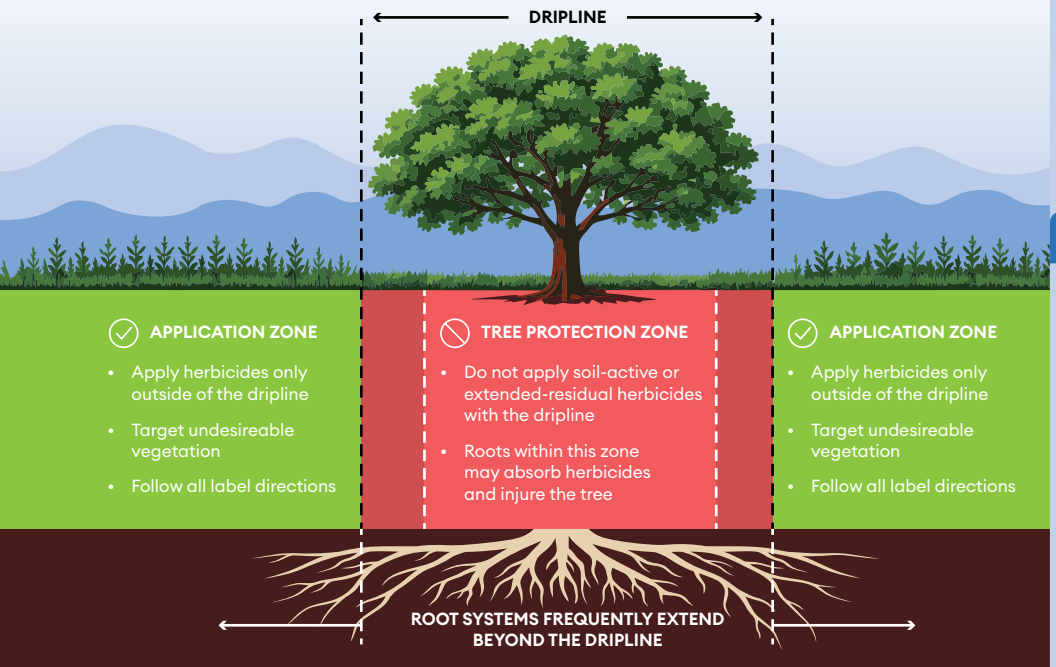
For consistent results in utility corridors, ensure target vegetation is fully leafed out, spray volumes match canopy density and water quality is addressed prior to mixing. Avoid applications during extended drought or extreme environmental stress. Use appropriate drift mitigation practices near sensitive areas and document application conditions and posttreatment observations to support continuous improvement.

## Resistance management and stewardship

Navius® Flex herbicide contains two herbicide modes of action that support resistance management strategies. To preserve long-term efficacy, apply full labelled rates, tank-mix herbicide groups where possible, avoid repeated low-rate applications, and integrate mechanical or cultural control practices when appropriate. Monitor treated areas for escapes and address them promptly.

# Tree dripline protection zone

Where to apply herbicides around desireables trees




**ALWAYS FOLLOW PRODUCT LABEL DIRECTIONS.** Required setbacks and protection zones vary by herbicides and tree species.

### HOW TO PROTECT DESIREABLE TREES

- Never broadcast spray postemergence or systemic herbicides over the top of desireable trees
- Herbicides can be absorbed through leaves, green bark and roots
- Injury may occur even when spray does not contact the trunk

### USE EXTRA CAUTION AROUND:

- Species with extensive lateral root systems
- Shallow-rooted species
- Trees that spread through layering or vegetative propagation

For these species, maintain a larger buffer than the dripline when using soil-active herbicides

**APPLY HERBICIDE**
Target undesirable vegetation outside the protection zone

**DO NOT SPRAY**
Avoid soil-active and extended-residual herbicides within the dripline

## Grazing, hay and manure considerations

There are no grazing or haying restrictions when Navius® Flex is used according to label directions. However, aminocyclopyrachlor can persist through animal digestion. Manure or compost from treated areas should not be moved to sensitive crop, garden or ornamental sites unless stewardship precautions outlined on the label are followed.

## Integrated vegetation management outcomes

Effective use of Navius Flex reduces brush encroachment, restores competitive grass cover, improves access and visibility in managed corridors, and supports long-term vegetation objectives. When used as part of an IVM program, Navius Flex helps reduce retreatment frequency, lowers overall herbicide inputs over time, and supports safe, functional and sustainable land use.

## Protecting pollinators and beneficial insects

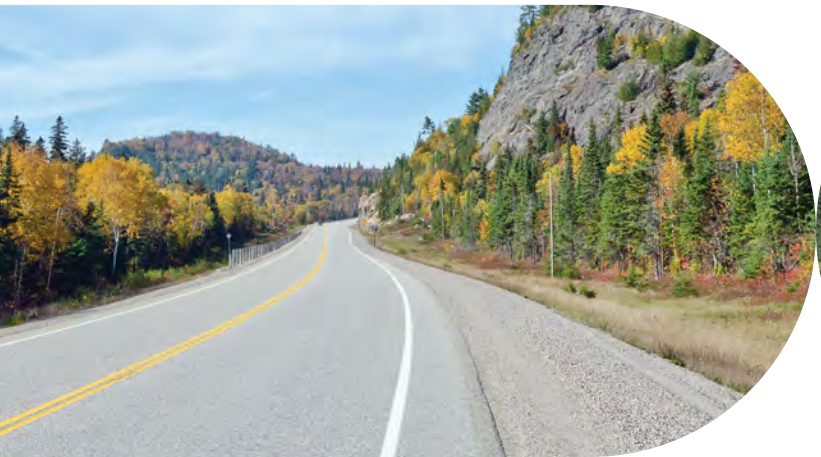
Navius Flex herbicide affects plant-specific biochemical pathways that do not exist in birds, mammals or pollinators. When used as directed, it does not pose a direct hazard to wildlife. IVM research demonstrates that selective vegetation management practices, rather than non-selective mowing, support diverse early successional plant communities that provide nectar, pollen and nesting resources for pollinators. Selective herbicide applications used according to label directions do not directly impact pollinators and help reduce invasive species that displace flowering native plants. **By controlling incompatible woody vegetation while allowing grasses and compatible forbs to recover, Navius Flex supports pollinator-friendly outcomes within utility corridors, roadsides and other managed landscapes.**

### Pollinator habitat

Utility rights-of-way represent some of the largest contiguous landscapes available for pollinator habitat. Selective herbicide applications, reduced mowing frequency and targeted treatments allow flowering plants to persist while preventing incompatible tree growth. Navius Flex supports these objectives as part of a comprehensive IVM program.

## Protecting aquatic environments

Navius Flex is not intended for application to water and labelled buffer zones must be followed to protect aquatic habitats. If small amounts enter water unintentionally, dilution, sediment binding, sunlight and microbial activity contribute to break down. The product does not bioaccumulate in fish or aquatic organisms when used according to label directions. Drift control, buffer zones and avoiding applications prior to heavy rainfall are effective safeguards.



## Protecting human health and community safety

When used according to label directions, Navius® Flex presents low risk to applicators and the public. The product has no vapor hazard and is applied at low use rates, reducing overall exposure potential. Standard personal protective equipment (PPE) during mixing and application, along with adherence to labelled practices, provides effective protection. There are no reentry restrictions once spray residues have dried.

## Traditional plant use considerations

Navius Flex herbicide controls broadleaf plants and may affect berry-producing species if directly treated. Applications should be planned to avoid contact with culturally important plants. Selective treatment and site-specific planning allow incompatible brush and trees to be managed while supporting recovery of valued plant communities over time.

### Stewardship and trust

Effective vegetation management near communities and traditional lands requires transparency, planning and respect for land use values. Navius Flex supports these objectives through selective control, low use rates and long-term vegetation stability that reduces the need for frequent disturbance.

## Environmental fate

When applied according to label directions, the active ingredients in Navius Flex are subject to natural environmental processes that limit persistence and off-site movement.

After application, ACP and MSM interact with soil, plant material, sunlight, moisture and microbial activity, leading to gradual breakdown over time. Environmental fate is influenced by site conditions such as soil type, temperature, moisture and biological activity.

In soil, degradation occurs primarily through chemical and microbial processes. Reported soil half-lives vary with environmental conditions. MSM generally breaks down more rapidly under warm, moist, biologically active conditions and more slowly under cool or dry conditions, with reported half-lives typically ranging from days to several weeks. ACP is more persistent by design, supporting long-term brush control, with reported soil half-lives generally on the order of weeks to months, depending on site conditions.

In surface environments, dilution, sunlight, sediment interaction and microbial activity further contribute to degradation. Proper application practices, including adherence to buffer zones and drift management measures, are effective at limiting off-target movement and protecting sensitive environments.

### Low active ingredient load, long-term results

Navius Flex delivers long-term brush control at low application rates, reducing the total amount of active ingredient applied over time. Fewer retreatments mean less disruption, improved corridor stability and a smaller overall environmental footprint.

envu® Industrial Vegetation Management

**ALWAYS READ AND FOLLOW LABEL DIRECTIONS.** Application methods, rates, buffer zones and precautions listed on the label must be followed at all times. This guide is intended as a supplementary reference and does not replace the product label. 2022 Environmental Science CA Inc. 137 Glasgow Street, Suite 210, Office 111, Kitchener, ON N2G 4X8. For additional product information, call toll-free 1-800-331-2867 or visit ca.envu.com. Envu™, the Envu logo and Navius® are trademarks owned by Environmental Science U.S. LLC or one of its affiliates. Other trademarks are the property of their respective owners. ©2026 Environmental Science U.S. LLC. IV-C-Na-MB-042026-G-66