NELS Report and Recommendations to Council for a Disc Golf Course Monitoring and Impact Assessment Process

February 2024

Purpose and Goals:

- To help protect and preserve the native grassland area and gully where the disc golf course has been installed in as close to a natural state as possible.
- To attempt to balance the conservation and protection of the natural grassland ecosystem with use of the disc golf course.
- To define a baseline for monitoring and assessing damage / harmful impacts of the SVGL disc golf course on the native grassland.
- To understand the basic biology of native grasslands and rough fescues.
- To identify the main kinds of damage / harmful impacts that may occur as a result of having a disc golf course in a sensitive natural area.
- To create recommendations and best practises for preventing and responding to that damage and/or harmful impacts.

Contents:

1. Background: Why care about protecting native grassland areas?

Many people, when they think about “wild” grassy areas, think thoughts like “boring, dry, hot, ordinary, untidy, worthless.” We have a lot of grassland areas outside of urban centres in southern Alberta, so it is easy to assume that grass is grass, there’s a ton of it, it’s boring, and it’s expendable. It is easy to undervalue things that seem to be common. And easy to assume that it will not be damaged by the presence of something like a disc golf course.

However, grass is not “just” grass. There is an important distinction to be made between native grasses (and native plants), and introduced grasses (and introduced plants).

- ***Native*** grasses and plants are those that originated in a particular area and, over very a long time, evolved into a balanced, complex, and intricately connected ecosystem.
- ***Introduced*** grasses and plants are those that were brought in from “outside” a particular area (or accidentally “arrived” from somewhere else), and were never present in the original vegetation.

Here in the Summer Village of Ghost Lake (SVGL), we are fortunate to be situated within a grassland area that is dominated by native rough fescue grasses and a full host of native plants, insects, birds, and mammals that make up the fabric of a native grassland ecosystem.

It is true that over the many years since the village was established, a lot of introduced grasses and plants have made homes in our native grassland, and some of our grassy areas are less “native” than they used to be. However, all along the escarpment that runs from west to east behind the village and along the flat plateau above it that stretches to the highway, *there is still an almost pristine native grassland area within our jurisdiction*. This fact has been well known for some time, but was recently reconfirmed by two Calgary biologists who walked the extent of it with several members of SVGL’s Natural Environment and Lake Stewardship Committee (NELS) in the spring of 2023.

But still, why care about protecting native grassland areas?

Because:

- **Native grasslands are biodiverse, essential wildlife habitats.**
    - Many species of insects (especially pollinators), birds, and mammals rely on the diverse and complex plant communities of prairie grasslands.
    - Grasslands include wetlands, lakes, rivers, and valleys, so they support fish, waterfowl, and avian migration.
    - Grasslands have a symbiotic relationship with grazing animals. Native grasses are particularly high-quality food for grazing animals, because (unlike introduced grasses) native grasses cure on the stem and retain their nutrients even when dry. Grazing animals also knock seeds to the ground from mature plants, helping to perpetuate the grasses. In addition, they selectively eat plants that might compete with native plants, as well as eating dry grasses in the winter, which helps to reduce dead leaf litter.

- **Native grasslands are naturally climate resilient.**
    - Grasslands exist in areas with harsh climatic conditions. They have evolved and adapted to become tolerant of drought conditions, extreme heat, extreme cold, and short periods of extreme wet.
    - Natural wildfires tend to pass over them quickly, because they provide minimal, fast-burning fuel. Except in the rare case of very intense fires (or too-frequent prescribed burning), the roots of grassland plants survive wildfire and the vegetation regrows.

- **Due to their extensive root systems, native grasslands play an important role in erosion control, improving water quality, absorbing water during floods, and sequestering carbon below ground.**
    - Grasslands largely prevent wind and water erosion, holding the soil in place during prolonged drought periods and during floods.
    - As an ecosystem that developed and evolved because of a general lack of water, grasslands are efficient at allowing water to infiltrate into the ground, providing base flow to rivers and streams, improving water quality, and holding water during floods. Native grasses and plants have been shown to absorb water into the soil better than domestic grasses.
    - Grasslands are a natural carbon sink, and important for carbon storage. Intact native grasslands have proven to be particularly effective at sequestration and long-term carbon storage in their extensive root networks. Grasslands are a more reliable carbon sink than trees because they sequester carbon below ground. Natural, ungrazed, undisturbed grasslands have an overall climate “cooling effect” because of being an efficient carbon sink.

For all the reasons outlined above, it is true to say that native grasslands have value for all living creatures (including humans), and are worthy of protection and preservation.

Their survival, however, is tenuous and threatened. Over decades of human disturbance, they have been converted to agricultural lands, and developed as urban areas have expanded. Native grassland areas are becoming fewer, smaller, more fragmented, and more diluted by introduced species. According to the Nature Conservancy of Canada, *temperate grasslands (such as Canada’s prairies and other native grasslands) are the world’s most endangered ecosystem*. According to Birds Canada, temperate grasslands are also *the least protected endangered ecosystem on the planet*.

Interestingly, (according to the Nature Conservancy of Canada) recent research demonstrates that protecting native grasslands is the single most effective nature-based solution available to Canada for mitigating the effects of climate change, so this is a further reason to care about our native grassland areas.

More and more, there is evidence of political will at all levels of government to understand, adapt to, and mitigate the effects of climate change. SVGL recently commissioned studies about how to adapt (as a small municipality) to the effects of climate change. The following three concepts are much discussed at every level of government in the context of climate resilience planning:

- **Low-carbon resilience (LCR)** is a way of integrating both climate change adaptation and mitigation strategies to reduce emissions (e.g. greenhouse gases) and vulnerability. Protecting and preserving SVGL’s native grasslands is a low-carbon resilience mitigation strategy, because native grasslands are efficient and effective carbon sinks.
- **Ecosystem-based / natural approaches to adaptation** involve the conservation, sustainable management, and/or restoration of ecosystems, such as forests, grasslands, wetlands, etc. to reduce the harmful impacts of climate change hazards. Protecting and preserving SVGL’s native grasslands is an ecosystem-based approach to adapting to climate change because native grasslands are naturally climate resilient and have an overall cooling effect on the environment by sequestering carbon below ground.
- **Green (biological or living) asset / green infrastructure management** focuses on leveraging the Earth's natural ecosystems to capture and store carbon dioxide. Examples include reforestation, wetland restoration, etc. Protecting and preserving SVGL’s native

grasslands leverages a natural ecosystem that is proven to effectively sequester carbon below ground.

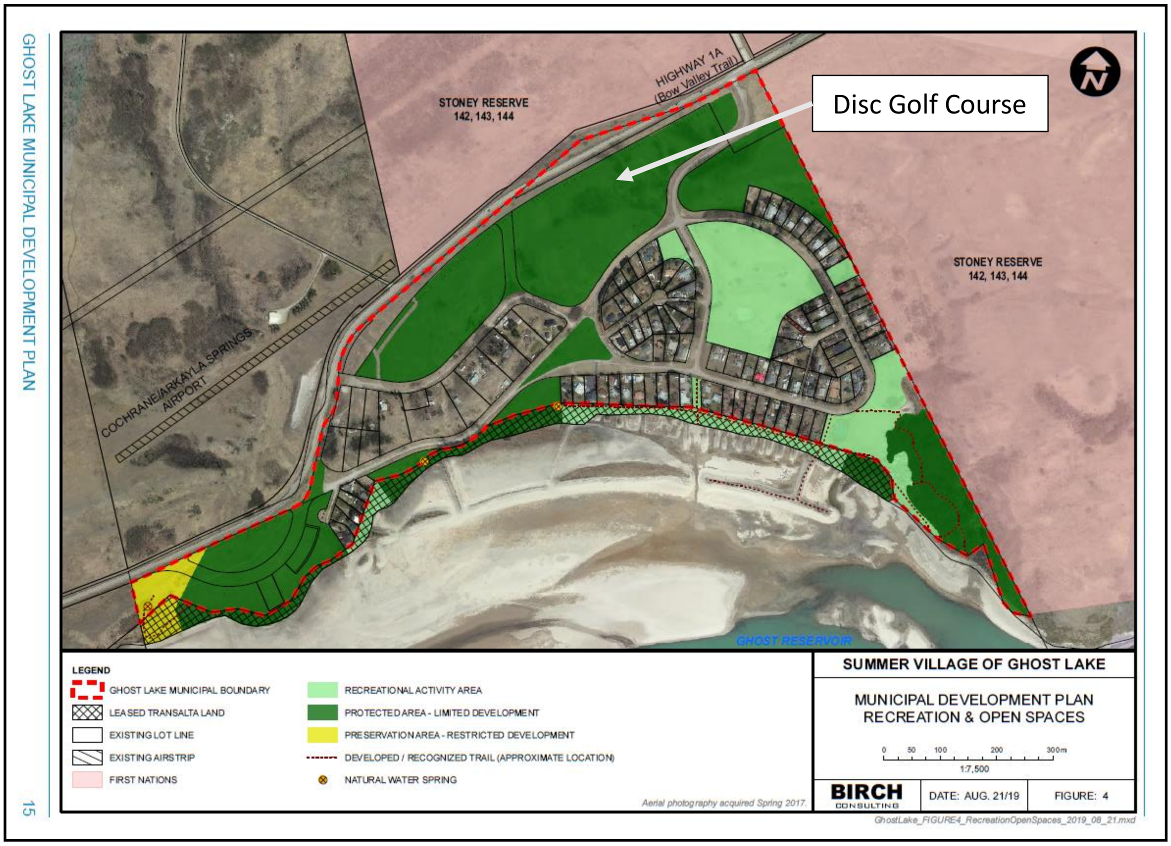
Each of these three approaches to climate resilience planning is an excellent fit with prioritizing the protection and preservation of SVGL's native grassland areas. And SVGL's interest and willingness to commission a professionally developed climate adaptation and resilience plan for the village points to its having the political will to prioritize adaptation and mitigation strategies that will benefit the village and all of its residents.

2. Determining a baseline for monitoring and assessing impacts of the SVGL disc golf course on the native grassland

The current SVGL Land Use Bylaw (although it will be fully revised in 2024) does not provide any specific guidance regarding developments in environmentally sensitive areas of the village. In the absence of guidance from the Land Use Bylaw (LUB), however, the SVGL Municipal Development Plan (MDP) describes the agreed upon vision for and values of the village.

Protecting and preserving the native grassland area and gully where the disc golf course is installed is clearly asserted as an overarching village philosophy by the following goal of the SVGL Municipal Development Plan (p. 9): "To preserve the undeveloped, municipally owned land in a natural state, while being cognisant of the need for occasional fire hazard risk-reduction activities."

The figure below (from page 15 of the MDP) indicates the location of the disc golf course. Note that the figure legend identifies the area as "Protected Area – Limited Development." Page 14 of the MDP further specifies that "protected areas are to be used for casual recreation activities such as walking, with an effort made to limit development and land disturbance."



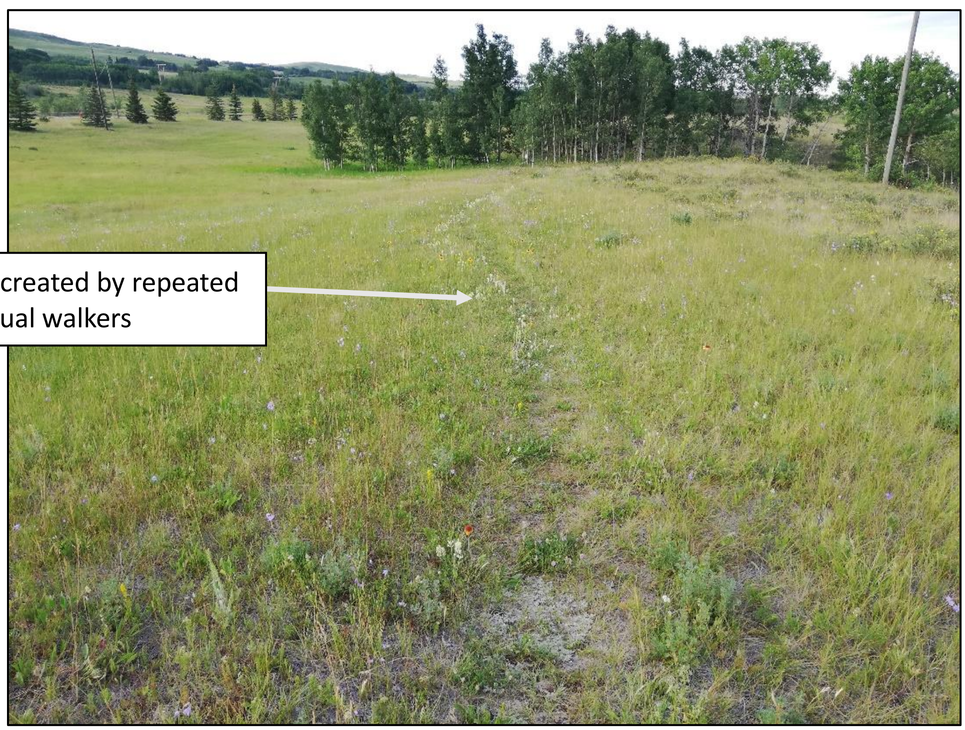
Therefore, the baseline and main objective of this Disc Golf Course Monitoring and Impact Assessment Process is to limit damage / harmful impacts from having a disc golf course located in an environmentally sensitive native grassland area to the kind of damage that might be caused by casual walking, or what might otherwise be commonly referred to as "passive recreation."

There are many definitions of passive recreation for use in different contexts, however, most generally boil down to something like this: Passive recreation refers to low-impact, non-motorized outdoor recreational activities that do not require developed facilities and can be accommodated without change to the area, topography, or resources. Activities include, but are not limited to, walking, hiking, skiing, and non-organized transient activities.

So, assuming a baseline limit of "acceptable" damage similar to what might be caused by casual walking or passive recreation, what does that damage look like?

In general, one person walking through native grassland will leave lightly trampled vegetation behind them that will, within hours to days, become virtually invisible. Repeated casual walking on the same path through native grassland will create a lightly worn path with compressed vegetation but no soil exposure or permanent damage, as illustrated by the two photos below. These photos illustrate, then, acceptable damage similar to what might be caused by casual walking or passive recreation.


Foot path created by repeated use by casual walkers


Foot path created by repeated use by casual walkers

3. Understanding the basic biology of native grasslands and rough fescues

It is not possible to understand what constitutes damage in a native grassland without understanding the basic biology of grasslands and native grasses, specifically rough fescues, which are the dominant vegetation. Incidentally, rough fescue is Alberta's provincial grass, and Alberta is the last jurisdiction in North America where all three varieties—plains rough fescue, foothills rough fescue, and northern rough fescue—still grow.

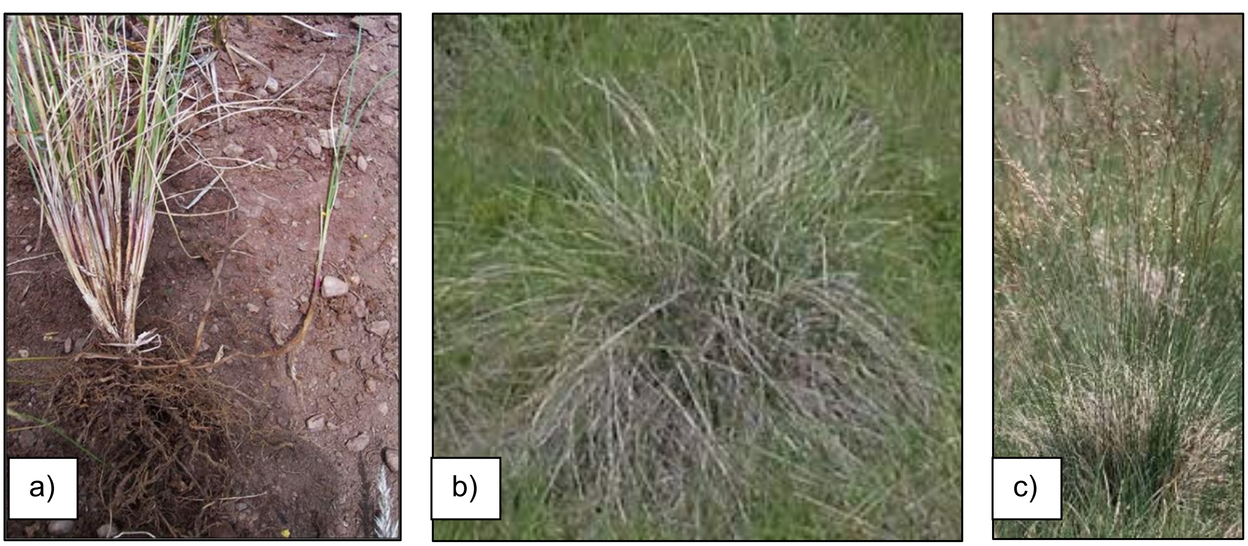
The existence of grasslands is the result of a long evolution of plants and living creatures in response to geography, specific climate conditions, and the availability of water. In general, grasslands have evolved to survive in dry, windy areas that are subject to seasonal extremes in temperature (both hot and cold). These conditions dictated the kinds of vegetation that could survive, as well as the kinds of insects, birds, and mammals that could thrive. Even minor changes in elevation and exposure affect prairie plant communities. For example, shorter, more drought- and wind-tolerant plants are found on the tops of knolls.

Rough fescues are native perennial bunch grasses with stiff narrow leaves and fibrous root systems. They are slow to grow from seed, and their *life cycle* (as opposed to their annual growth cycle) takes years. The *annual growth cycle* of rough fescues begins in early spring when conditions are relatively cool and melt from snow cover provides moisture. Annual growth is generally complete by early summer, before the usual onset of high temperatures and drought.

Each plant, over a period of years, creates a dense tuft of leaves, the outer parts of which consist of old leaves that bend over and eventually separate from the plant, creating a thick thatch called a tussock. This thatch shades and insulates the roots, protects the soil, locks in moisture, and helps to protect the growth crown of the plant. Mature plants can tolerate very dry, windy conditions, as well as intense heat and intense cold.

Seed production in fescues is highly variable, only occurring about every three to five years, with a germination rate of 60-95%. The survival of new seedlings is limited by the availability of water during the first two to three years of growth, until their root systems become sufficiently developed. Plants that survive to maturity and are undisturbed are relatively long-lived.

The photos below illustrate: **a)** a young (2-3 year old) plant (L) and a single seedling (R); **b)** a mature fescue plant (note the old leaves starting to create thatch around the base of the plant); and **c)** a mature fescue with flowers.



Disturbances such as mowing, heavy grazing, and trampling have significant negative impacts on rough fescues, as does competition from invasive species such as Canada Thistle, Smooth Brome, and others.

As illustrated by the two photos below, an undisturbed field of mature rough fescue has few to no invasive weeds. The mature fescue tufts become so thick and dense that there is little space for invasive plants to establish themselves.

A healthy, undisturbed field of rough fescue in late spring / early summer:

A healthy, undisturbed field of rough fescue in fall / winter:

4. Identifying common negative effects of disc golf courses on a local environment

In general, damage to a local environment from a disc golf course (in any setting) is likely attributable to one of two causes: use of the course by players, and/or maintenance / management of the course.

In general, damage caused by **use** of a disc golf course by players might include:

- Trampling of and loss of vegetative cover
- Increased soil compaction, erosion, and loss of vegetation around tees and baskets
- Tree damage (broken branches, damaged bark, nicks and indentations in trunks) from discs hitting the trees near baskets
- Disturbance of wildlife and wildlife habitat
- Potential safety issues for people using the area for passive recreation at the same time others are playing disc golf (i.e. accidentally getting hit by a disc)

In general, damage caused by **maintenance** and/or management of a disc golf course might include:

- Soil erosion, compaction, and other and damage from the use of wheeled and/or motorized vehicles (lawn tractors, quads, etc.) on the course
- Vegetation and ground cover damage from mowing
- Damage to trees, shrubs, and low vegetation from cutting and clearing near tees and baskets
- Disturbance of wildlife and wildlife habitat

5. Identifying observed damage / harmful impacts of the SVGL disc golf course on the native grassland

To date, most of the observed impacts caused by **use** of the SVGL disc golf course by players have been minor, probably because (unlike disc golf courses in large municipalities) only a small number of people use the SVGL course on any given day. Use in SVGL is highest during the three days of Regatta Weekend each August. Over a period of years, it is possible that the cumulative impacts of course usage may cause visible and/or significant damage, particularly near the tees and baskets, so this should be monitored and assessed on a regular basis.

To date, most of the observed damage or negative impacts from having the SVGL disc golf course located in a native grassland area have been caused by **course maintenance**:

- Motorized vehicles (quads, lawn tractor, etc.) have left visible tracks through the grass and created patches of bare, compacted soil where native vegetation previously grew.
- Native fescues have been scalped to the ground by the lawn tractor.
- Wherever the course has been mowed, the grasses have been left extremely short.
- Many of the trails mowed through the course are unnecessarily wide.
- Low shrubs and vegetation have been cut and left near the baskets.

Damage (a) from driving motorized vehicles, and (b) damage from mowing / cutting are discussed below.

(a) Damage from driving motorized vehicles

Driving motorized vehicles (such as quads, trucks, etc.) on native grassland leaves tracks / scars. Notice in the two photos below that driving in wet or moist conditions (top photo) leaves deep tracks. The turning wheels may tear grass and plants out by the roots, creating permanent and visible damage. Even when the ground is less wet (as in the bottom photo), turning wheels damage and scar the vegetation, and this seemingly minor kind of damage can take years to recover.

Repeated driving on the same track, even in relatively dry areas (such as the sunny slope in the photos below), compresses the vegetation. It can also cause soil erosion (bare soil), particularly on an uphill incline where the wheels of the vehicle might spin a bit going up the hill. This is the case in the two photos below. The soil erosion is not visible in the distance shot (left), but is plainly apparent in the close up (right). This type of damage generally does not recover unless there is no further use of motorized vehicles. Even at that, because fescues are slow growing, different types of invasive plants often establish themselves quickly in the bare soil and can out-compete the fescues.

(b) Damage from mowing / cutting

At this time, most of the visible damage on the SVGL disc golf course is the result of mowing, so it is important to understand the seriousness of this kind of damage and how to minimize it.

Rough fescues are significantly damaged and weakened by intense grazing (or in the case of SVGL, mowing / cutting) during their annual growth cycle (April through about mid-July). The more frequently and the shorter they are cut, the more root mass is lost until, ultimately, they cannot recover.

The photo at the left shows clumps of rough fescue that were clipped in a greenhouse to specific heights every four weeks for five months. Note the decrease in root volume corresponding to the maintained height of the plants.

Left to right:
- Not clipped
- Clipped to 12.5 cm (5")
- Clipped to 7.5 cm (3")
- Clipped to 3.8 cm (1.5")

Fescues sustain less damage from grazing (or mowing / cutting) after their active annual growth phase is complete (about mid-July). When they are not actively growing, they are sustained by stored energy in the roots. Needless to say, plants that have been repeatedly clipped short throughout their active growth cycle have little root mass left to keep them alive.

Rough fescues should also not be cut when the plants are flowering (late summer), as that decreases seed production and plant strength and size. Mowing (occasional /infrequent, and not too short) is least damaging when fescues are dormant, between about October and March.

A note about differences between grazing and mowing or cutting: **Wild animals graze selectively and move on.** Research suggests that during their active growth cycle, rough fescues are less palatable to grazing animals, which allows these slow-growing perennial grasses to grow without disturbance. Meanwhile, grazing animals select invasive or introduced annual grasses, which are comparatively more palatable, and this reduces competition from the faster-growing invasive grasses. Rough fescues become more palatable to grazing animals in the late fall and winter, a time when the plants are dormant and less susceptible to damage. Furthermore, unlike non-native grasses, fescues cure on the stem and retain their nutrients even when dry, providing nutritious winter forage. **Mowing is not selective.** Mowed fescues (especially frequently mowed and to a short height) need periods of rest (as in several years) to start to recover. They are slow-growing perennials with a life cycle of multiple years to maturity and seed production.

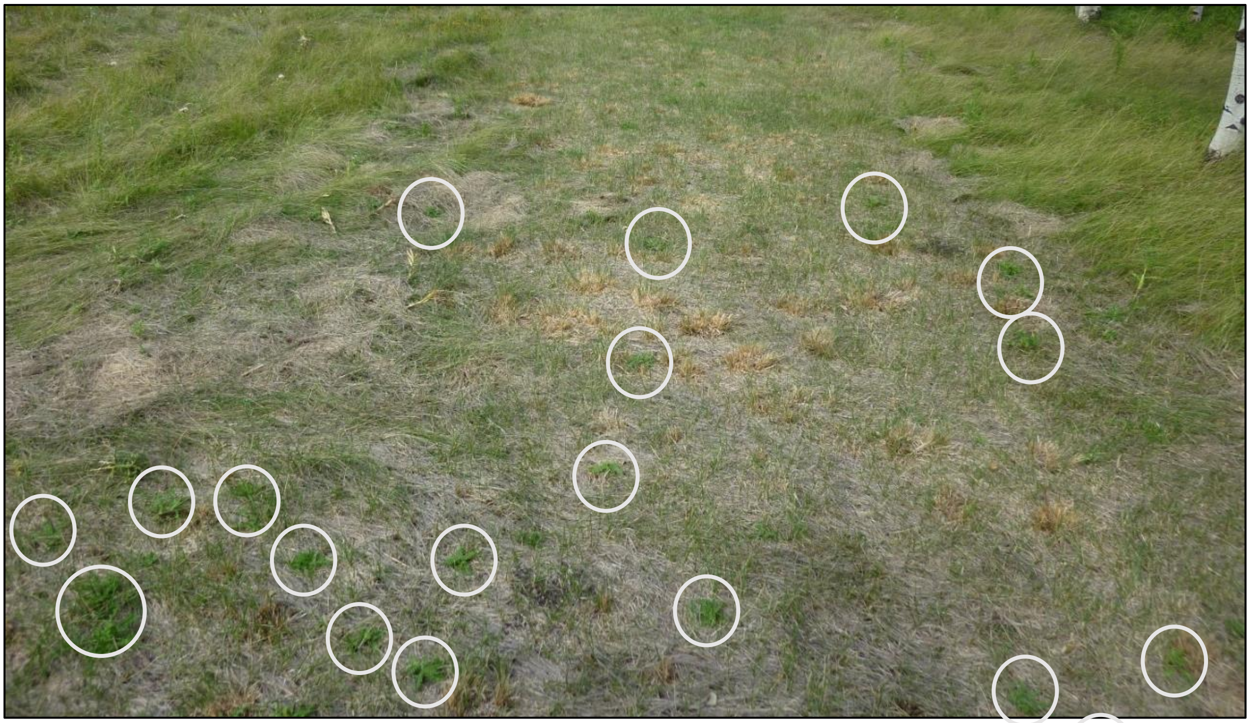
In summary, mowing (especially repeated mowing and to a short height) is extremely damaging to the health of rough fescues because:

- It severely reduces the root mass of the plants.
- It prevents them from maturing to the point where they can set seed and reproduce.
- It significantly and negatively affects their ability to tolerate intense heat, dry conditions, and intense cold by removing the insulating and shading tall growth and dense thatch on each tuft.
- It creates space and opportunity for invasive weed growth.

The photos below show some examples of ways in which mowing has created / is creating damage on the SVGL disc golf course.

Wide and closely cropped trails have been mowed through the native grasses between baskets. Too much native grass coverage has been removed (width of trails and mowed height of grasses). This kind of repeated short mowing causes loss of root mass; prevents plants from maturing to set seed; impairs their ability to tolerate dry conditions and intense temperatures; and creates space and opportunity for invasive weed growth.

In mowed areas, there are many scalped, severely damaged fescues. Those that are visible as dry (possibly dead), brown growth crowns are plants that are at least several years old. Younger seedlings are also damaged, but are not visible in the same way. Short-cropped grasses are not able to maintain moisture for their roots, and small Canada Thistles (circled) quickly start to establish themselves in the exposed, dry, and very short vegetative cover.



It appears that a simple footpath has sufficed to play the two baskets in the gully, so the width and short mowing of the trails on the upper part of the course seems to be unnecessary.

Shrubs and low vegetation have been cut and left in heaps near many of the baskets.

6. Recommendations and best practises for preventing and responding to damage / harmful impacts from having a disc golf course in our native grassland area

A. Seasonal use of the course is the least damaging to the native grassland area

According to Cows & Fish, the following would be a best-practises schedule for play on the SVGL disc golf course.

Play Status:	**Time Frame:**	**Rationale:**
NO PLAY	April through mid-July	This is the active growing season for fescues, when they are most susceptible to damage. It is also nesting and rearing season for birds and mammals.
SUMMER USE	Mid-July through September (except when conditions are wet or muddy)	Some fescues may be flowering, but most are storing energy in their roots and not actively growing. Most young birds and mammals have fledged by this time.
NO RESTRICTIONS	October through March, except when the ground is thawing, wet, or muddy	This is the dormant time for fescues.

- As far as possible, stay on established paths between baskets and throughout the course.
- Avoid using the course when it is wet or muddy.

MONITORING: Usage statistics (number of players, number of games) should be kept from Regatta weekends. Statistics could also be kept the rest of the year by asking people to sign out the discs from the library with date and number of players. This information would be important especially if damage is becoming evident on the course or in the grasslands.

B. Soil compaction and erosion from play near tees and baskets

Soil compaction describes a condition where soil particles are pressed together, reducing the pore space between them. Soil volume is decreased and soil density is increased. In the context of a disc golf course, it is caused by repeated use and congregation of players in the small areas near tees and baskets. Plant growth tends to decrease as compaction increases. Avoiding play during wet conditions should help to minimize this problem.

Soil erosion in this context refers to progression of soil compaction to areas of bare soil, where plants have ceased to grow because of overuse in the small areas near tees and baskets, and/or play during wet conditions.

To date, course use does not appear to be heavy enough to cause this kind of damage (from use) near the tees and baskets. If, however, cumulative amounts of play were to cause soil compaction and/or erosion in the future, some possible courses of action might include:

- placing concrete pads, or gravel, or wood chips at the tees
- closing particular tees or baskets for a recovery period
- closing the entire course for a season of recovery, as required

NOTE: NELS would not support the idea of moving the tees and baskets around to new locations, as that would create more (and new) damage than leaving them in place.

MONITORING: Soil compaction and erosion near tees and baskets should be monitored and documented with photographs twice per year, in the spring and after Regatta Weekend.

C. Driving motorized vehicles in the native grasslands

It is the policy of all formal grassland conservation areas (e.g. Nose Hill Park, Sandy Cross Conservation Area, Glenbow Ranch, Big Hill Springs, etc.) to completely restrict driving motorized vehicles (cars, trucks, quads, lawn tractors, etc.) in native grassland areas, except on rare occasions for specific and absolutely necessary purposes. This is because native grasslands and plants are so very easily damaged, set back, or destroyed by being driven over and compacted. It is also because driving motorized vehicles in dry grasses can be a fire hazard. NELS recommends this same policy for SVGL's native grassland areas.

Now that the disc golf course has been developed / installed, there are few to no reasons to require any access to the course by motorized vehicle. The existing mowed paths throughout the disc golf course will not grow in quickly and will be visible for several seasons, even without further mowing.

It would be best practise to:

- Allow human footpaths to develop in previously mowed paths, and human trampling to lightly compact the grasses and plants near tees and baskets. On occasion (perhaps only every few years, at most), a weed-whacker could be used to moderately reduce the height (minimum of about 8" tall) of any native grasses that are getting too tall – although grasses getting tall would be an unlikely scenario in an area where people are walking, trampling, and playing disc golf.
- Restrict vehicle access into the native grasslands to one or two access points, such as at the end of the road above the 500 block, and at the top of the main entrance road.
- Block or close off any vehicle access points with large rocks, spaced sufficiently close together so that quads, etc. cannot enter between them.
- On those very rare occasions when access by a motorized vehicle might be required, stay on existing tracks near the outer perimeters of the grassland area. No new tracks should be created.
- As far as possible, restrict even "essential" access by motorized vehicle during the active growth cycle of the native grasses (April through mid-July), and when the ground is thawing, wet, or muddy.

MONITORING: Evidence of driving motorized vehicles in the native grasslands could be monitored at the same time as monitoring soil compaction and erosion around the tees and baskets. Photographs should be taken of any recovering and new damage.

D. Mowing

NELS strongly recommends that there be no further mowing the disc golf course. Over time, mowing and re-mowing will kill the fescues and native plants, and allow invasive and introduced species to become established.

Even though soil compaction and erosion are not especially desirable, trails that develop from heavier human use and become compacted and/or eroded still look “natural” (as in the photo from Nose Hill Park, below), and also naturally suppress nearly all plant growth. No maintenance is required, and in the overall scheme of things there is less damage to the grasslands. This is preferable to mowing.

People have managed to play the baskets in the gully using only a footpath, with some (infrequent and not too short) weed-whacking around the baskets, so there is no reason this cannot be sufficient over the rest of the course as well. It would be a much more preservation-friendly approach than the kind of mowing that has occurred on the SVGL course to date.

In the unlikely event that mowing might required for some legitimate reason:

- First consider whether trimming with a weed-whacker would suffice. It is much less aggressive than a lawn tractor.
- If mowing is absolutely necessary, then mulch mow (i.e. leave what is cut where it was cut) to maintain some protection for the roots against dryness, heat, and cold.
- Not too short (minimum height of 8”). Once.
- Not during the fescue active growth cycle (April through mid-July)
- Preferably not when fescues may be flowering and producing seed (mid-July through September).

NOTE: The two biologists who walked the grasslands with NELS in the spring of 2023 suggested several ways to manage invasive species, as required. This could easily become a relevant project for the annual summer student, to replace the time s/he would have spent mowing the disc golf course.

MONITORING: There should be no need to monitor mowing if the practise is ended. Occasional mowing (as described above) should be discussed at and recorded in council meeting minutes. Mowed areas should be photographed at least once per year.

E. Cutting off shrubs and low vegetation around tees and baskets

As a general rule, do not cut off shrubs and low vegetation around tees and baskets beyond what is absolutely necessary for playing the game, and only very infrequently. Ideally, it would be best practise to collect what has been cut off and take it to the village yard waste area rather than leaving it in heaps on the ground. However, if this requires the use of a motorized vehicle, it should only be done infrequently, and as per recommendations in C (above).

F. Prescribed burning

Prescribed burning is a recognized form of restoration for native grasslands, but only:

- when managed by experienced professionals
- when planned at intervals that mimic what might naturally occur in nature (every 10-15 years)
- within set boundaries (for example, in sections rather than all in one year, or just in areas with high concentrations of invasive species)
- at appropriate (with regard to environmental and wildlife issues) times of year, before April or after the end of September

Under these circumstances, prescribed burning of native grasslands can reduce encroachment of trees and woody shrubs, diminish invasive grasses and plants, reduce leaf litter, enrich the soil, and improve conditions for ground-nesting birds and other wildlife.

G. Managing invasive species

The two biologists who walked the grasslands with NELS in the spring of 2023 suggested several "manual labour" ways to manage invasive species, as required. This could easily become a relevant project for the annual summer student. Other best practises regarding invasive species include:

- Prescribed burning: Only as described in F (above).

- Herbicides / pesticides: No application of herbicides or pesticides should be permitted in the native grasslands without public consultation. These products could be extremely damaging in the native grasslands.

- Spreading of seeds: No spreading of seeds (including commercial wildflower mixes, commercial native grass mixes, or other plant seeds) should be permitted in the native grasslands without public consultation. Anything that comes out of a package is not something that originated in our native grasslands, and adding them to the area is to risk altering the entire ecosystem. Once non-native species are introduced, it is near impossible to get rid of them, and it is never possible to completely restore a natural ecosystem to its original state.

H. Restricting future development, upgrades, or expansion of the disc golf course in its current location

Native grasslands are a special, fragile, and endangered ecosystem. Ours is a near-pristine ecosystem, worthy of preservation and protection. No future developments, upgrades, or expansions of the existing disc golf course should be permitted in the current location. Use of the native grassland areas in the village should be limited to passive (as defined in section 2) forms of recreation.