

2024 Annual Project Report

Project Forest Golden Ranches



Project
Forest

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Land Acknowledgement

| Traditional Territories



Member of Cumberland House Cree Nation (CHCN) at the CHCN Food and Medicine Forest

Project Forest acknowledges that our work is conducted on both Treaty and non-Treaty lands. These lands are the traditional territories of First Nations and Indigenous Peoples. We recognize that our work is intertwined with the deep and diverse histories of Indigenous Peoples. We are grateful for the opportunity to work in these territories and are committed to the recognition and respect of those who live or have lived, travelled, and gathered on these lands for time immemorial.

About Us

| Our Mission and Values

Rewilding Canada, one forest at a time.

Project Forest is a non-profit organization working in partnership with conservation groups, Indigenous communities and Canadian businesses to make a positive environmental and social impact in our communities through planting forests. The forests we plant clean the air and water, increase biodiversity and contribute to the overall health and well-being of our communities.



Our work is rooted in our values.

Responsibility

We believe it is our responsibility to use our skills, knowledge, and experience to bring about positive change in the world.

Reciprocity

We recognize that we have benefited from the earth's resources and are committed to giving back through careful and thoughtful solutions.

Humility

We are grateful for the opportunity to learn from nature, to contribute to improving our environment, and to make a positive impact in people's lives.

Transparency

We document, monitor, and share our processes and findings with partners and the public—every step of the way, on every project.

Community

We create spaces where people can connect with nature, and each other. We respect every community we are invited into, and work together to make positive change.

Overview

| United Nations Sustainability Development Goals

Goals to Transform Our World

Planting new forests is critically important in addressing the challenges of our time, particularly when aligned with the United Nations Sustainable Development Goals (UN SDGs). As our communities grapple with climate change and biodiversity loss, forests emerge as pivotal solutions that intersect with multiple UN SDGs including, combating climate change and preserving biodiversity, fostering economic development, ensuring food security, promoting clean water access, and advancing social equity. Aligning the impacts of our forests with the UN SDGs is essential for communicating to stakeholders our dedication to sustainability, transparency, and the measurement of progress over time.

In our 2023 Annual Report, we have linked the outcomes of our rewilding projects with relevant UN SDG targets and indicators, as well as aligned them with corresponding Environment, Social, and Governance goals. This comprehensive approach ensures that our partners have readily accessible information for corporate sustainability reporting, simplifying the process and enhancing transparency.



Purpose & Positive Impact

The following UN SDGs are impacted by the Project Forest Golden Ranches forest:

Purpose



Positive Impact



Overview

| Forest Facts

About the forest you funded.

NAME

Project Forest Golden Ranches

DATE PLANTED

Summer 2021

TOTAL SEEDLINGS PLANTED

110,160

TOTAL CO₂ REMOVED FROM THE AIR*

65,315 metric tonnes

SPECIES PLANTED

White Spruce (28,080)
Lodgepole Pine (13,230)
Tamarack (12,240)
Willow (11,880)
Balsam Poplar (11,160)
Trembling Aspen (10,440)
White Birch (7,020)
Saskatoon (4,140)
Black Spruce (4,050)
Red Osier Dogwood (3,960)
Green Alder (3,960)

LOCATION

Strathcona County, Alberta

[53°25'03.6"N 112°58'11.3"W](#)

SIZE

55 hectares

TOTAL SPECIES PLANTED

11



* Metric tonnes of carbon dioxide (CO₂) projected to be removed from the air over 150 years.

2024 Activity Summary Report

Project Forest Golden Ranches

This summary reframes the key findings from the Golden Ranches restoration reports through the lens of four relevant UN Sustainable Development Goals (SDGs).



2024 Activity Summary Report - Project Forest Golden Ranches

| UN SDG 15 - Life on Land

Goal: Sustainably manage forests, combat desertification, reverse land degradation and halt biodiversity loss.

The Challenge:

Project Forest conducted its third afforestation monitoring survey at Golden Ranches on October 31–November 1, 2024, assessing 138 plots across 49.7 hectares of rewilded land. The objective was to assess reforestation success and biodiversity.

The Reality:

Survey results indicated that 84.1% of plots (SR and NSR-LIG combined) met acceptable stocking criteria and Project Forest’s internal restoration threshold. 15.9% of plots remained unstocked (NSR), with pockets of damaged or dead seedlings observed due to wildlife, browsing, wet or poor soil conditions, and competition from dense herbaceous cover.

The Context:

This year’s findings confirm that the Golden Ranches site is on a positive rewilding trajectory, with strong establishment of willow, balsam poplar, white spruce, and other native species despite environmental pressures. The results suggest a reasonable likelihood that many currently understocked plots (NSR-LIG) will naturally transition to fully stocked in the coming years. A 1-hectare adjustment was also made to exclude land impacted by ATCO line maintenance from the project area

The Obstacle:

Surveyors reported intense grass competition and widespread noxious weeds across the site. These species limit available light, space, and soil moisture for seedlings, posing ongoing challenges for optimal growth.



16.7%↑

Increase in site Stocking Rate from 2023

3,240

White Spruce seedlings planted in 2024

Table 1: 2023/2024 Stocking Summary

Type of Plot	# of Plots 2023	% of Plots 2023	# of Plots 2024	% of Plots 2024
Total Sufficiently Restocked (SR)	70	50.7	97	70.3
NSR-LIG Stocking	23	16.7	19	13.8
Not Sufficiently Restocked (NSR)	45	32.6	22	15.9
Total Stocking (SR + NSR-LIG/Total # of Plots)	93	67.4	116	84.1

Table 2: Invasive Species/Weeds List

Invasive Species/Noxious Weeds
Bull Thistle
Common Tansy
Butter-and-eggs
Creeping Thistle
Oxeye Daisy
Scentless Chamomile
Bladder Campion

Next Steps:

In partnership with the NCC, Project Forest is addressing the challenge of reducing populations of noxious weed species. In 2025, control efforts will focus on Common Tansy, Oxeye Daisy, and Scentless Chamomile. Project Forest intends to engage TerraLogix Solutions to execute a targeted herbicide application as part of the site's vegetation management strategy. The implementation plan and corresponding results will be documented and published in the 2025 Golden Ranches Annual Report.

Wildlife observations

2024 bird surveys completed by the *Nature Conservancy of Canada (NCC)* onsite recorded 22 different species, most notably:

- **Sprague's Pipit**, threatened
- **Baltimore Oriole**, once listed as sensitive
- **Sora** (Porzana Carolina)

22

Bird Species Recorded

Sprague's Pipit



| UN SDG 13 - Climate Action

Goal: Take urgent action to combat climate change and its impacts.
By restoring forest ecosystems, this project contributes to:

Monitoring Disturbance: According to the Project Forest Monitoring Program, any areas affected by wildfire, insect outbreaks, or industrial activity will be excluded from the afforestation project.

Ongoing ATCO utility maintenance along the southern and eastern site boundaries (see Figure 1), necessitated the removal of one hectare from the rewilding project.

CO2 Removal: The site is currently on track to remove 64,127 metric tonnes of CO2 compared to 65,315 the prior year, due to ATCO maintenance.



64,127

Metric tonnes of CO2
projected to be removed
from the air.

Figure 1: Golden Ranches 2024 Survey Fill Plant Area



| UN SDG 11 - Sustainable Cities & Communities

Goal: Make cities and human settlements inclusive, safe, resilient, and sustainable. Though situated in a rural conservation area, the Golden Ranches project supports regional sustainability and community connection through:

- **Community engagement and education:** 5 partner companies with **100 employees** took part in our 2024 *Golden Ranches Corporate Tree Planting Events*.
- **Partnership model:** Collaboration with *NCC*, *Project Forest*, conservation organizations, and residents exemplifies inclusive and sustainable land-use planning.



100

Employee partners took part in our 2024 tree planting



| UN SDG 6 - Clean Water and Sanitation

Goal: Ensure availability and sustainable management of water and sanitation for all. While this SDG is not a direct focus, there is one important area of overlap: **Wetland restoration**.

Note: The numbers reflected here are for annual rainfall only. While snowfall does create available soil water, the actual number is impossible to verify due to run off and melting events while ground conditions are frozen and trees aren't transpiring.

- In 2019, ditch plugs were installed to restore historically drained wetlands. These wetlands support groundwater recharge, flood mitigation, and **habitat for sensitive animal species**.
- Roughly **263,120,000 liters of rainwater** accumulated at the Golden Ranches planting zone in 2024.

As Project Forest does not operate its own weather monitoring stations or gauges, we rely on historical data provided by the Government of Canada. Specifically, we reference the *"Past Weather and Climate"* database to obtain annual rainfall figures within a 25 km radius of each planting site. This data can be found [HERE](#).



263M

Liters of water accumulation
at Gold Ranches in 2024

Figure 2: 2024 Golden Ranches Annual Precipitation

	Step Description	Formula/Conversion	Rainfall
1	Area of land	1 hectare = 10,000 m ²	55 ha × 10,000 = 550,000 m ²
2	Convert Depth to Meters	cm ÷ 100; mm ÷ 1000	478.4 mm = 0.4784 m
3	Volume (m ³)	Volume = Area × Depth	550,000 × 0.4784 = 263,120 m ³
4	Convert to Liters	1 m ³ = 1,000 liters	263,120 × 1,000 = 263,120,000 liters
Total Accumulation = 263,120,000 liters			

Soils with high biodiversity—characterized by diverse vegetation and active microbial communities—function as natural filtration systems, enhancing the quality of infiltrating rainwater and snowmelt. In contrast to monoculture agricultural soils, which are typically compacted and exhibit low microbial diversity, biodiverse soils demonstrate superior capacity for water infiltration, retention, and purification.

As reforestation progresses, soils gradually shift from agricultural to forest profiles, marked by increased organic matter, improved structure, and changes in microbial communities. These developments enhance ecological function by promoting cleaner groundwater recharge, reducing surface runoff, and supporting more resilient and sustainable watershed hydrology. (Tiquia, et al)

2023 Annual Report

Project Forest Golden Ranches

The Golden Ranches project stands as a multidimensional sustainability initiative. Through continued monitoring, adaptive management, and collaboration, Project Forest and our partners are creating tangible, lasting impacts across several pillars of the 2030 UN SDG Agenda.



Purpose

| UN SDG 15 - Life on Land

Goal: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

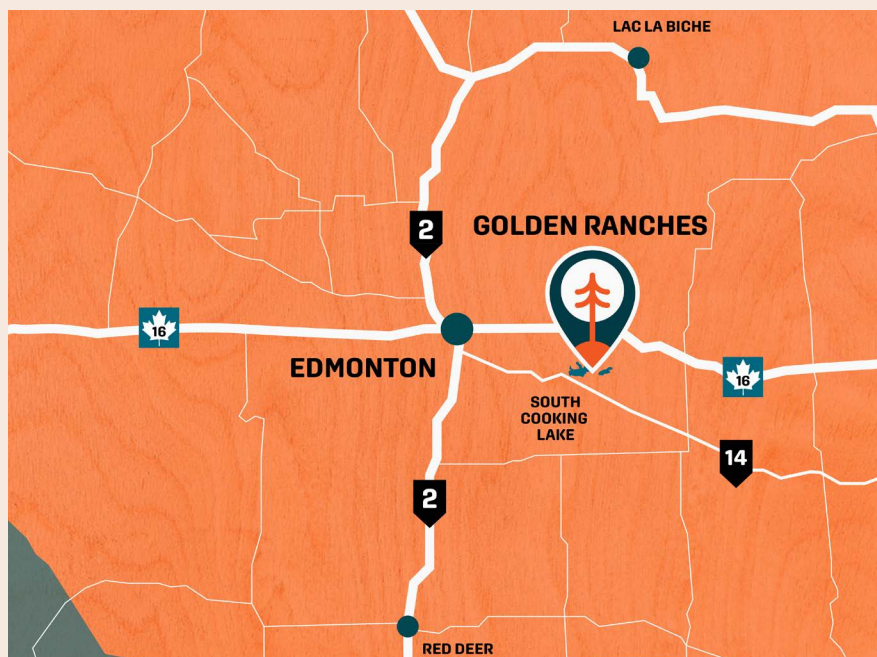
Matching ESG Goals:

- Providing clean air and water
- Improving biodiversity
- Re-establishing traditional landscapes



Project Forest is making a positive impact through restoring degraded land to increase forest cover, enhance biodiversity, and promote the sustainable use of terrestrial ecosystems.

Indicator 15.1.1: Forest area as a proportion of total land area



110,160
Seedlings Planted

Project Forest Golden Ranches has increased forested area in the Beaver Hills UNESCO Biosphere Reserve, in the Golden Ranches Conservation Area in central Alberta. A total of 110,160 trees in 11 different species were planted on 55 ha of former agricultural land in July 2021.

Purpose

| UN SDG 15 - Life on Land



Afforestation Survey at Project Forest Golden Ranches

The results of our first annual survey at Golden Ranches published in our 2021-2022 Annual Project Report indicated that the site was deemed to be 79% stocked. A fill plant was recommended in four areas that covered approximately 8.5 ha as these areas were documented as Not Sufficiently Restocked (NSR). The recommended fill plant occurred in all four NSR areas in September 2023.

The survey results from the Fall 2023 Afforestation Survey (Appendix A - Afforestation Survey) at Golden Ranches found an average total stocking rate (SR + NSR-LIG) of 67.4% (Figure 1), a decrease of 11.6% in tree survival from 2022.

There are several areas that have been identified to be considered for a fill plant (Figure 2). Due to high grass competition, the increase in observed NSR areas may be due to increased difficulties assessing the plots, specifically locating trees in the tall grass. It is recommended that additional survey data be collected to verify results. The survey confirmed that the weed issues on site continue. However, the Nature Conservancy of Canada (NCC) is proactively working on managing the weeds on site.

Figure 1: Acceptable Stocking Summary

Type of Plot	# of Plots	% of Plots
Total Sufficiently Restocked (SR)	70	50.7
NSR-LIG Stocking	23	16.7
Not Sufficiently Restocked (NSR)	45	32.6
Total Stocking (SR + NSR-LIG/Total # of Plots)	93	67.4

67.4%

Tree Survival Rate

138

Plots Sampled

NSR-LIG is an abbreviation of “not sufficiently restocked - let it grow”. The NSR-LIG status is applied to plots where under-height trees are left to grow with the expectation that this treatment will be sufficient for them to meet the SR standard at the next annual monitoring survey.

Purpose

| UN SDG 15 - Life on Land

Indicator 15.1.2: Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

Project Forest works with conservation groups to rewild areas of high conservation value. We transition degraded land owned and managed by conservation groups into species-rich forests that increase biodiversity, create habitat, and clean the air and water.

Project Forest Golden Ranches is owned and managed collectively by the Nature Conservancy of Canada (NCC), the Alberta Conservation Association (ACA), the Edmonton and Area Land Trust (EALT) and the Alberta Fish and Game Association (AFGA). It is located in the Dry Mixedwood Forest Natural Subregion of the Boreal Forest Natural Region.

11

Species Planted



“Restoration projects are no small feat and it takes a village to raise a seedling. The vision and support of Project Forest is helping to re-establish mixedwood forests in the heart of the Beaver Hills Biosphere, to the benefit of songbirds, pollinators, ungulates, carnivores and people.”

—**Delaney Schlemko**, Natural Area Manager at The Nature Conservancy of Canada (NCC)

The 2023 survey data shows that desirable natural vegetation is returning to the site. Foxtail barley, horsetail, common yarrow, goldenrod, silene, and various grasses are present in the area and are an indication of natural regeneration on site. This increase in desirable vegetation is likely due to improved soil and growing conditions created by the emerging forest. The return of diverse herbaceous vegetation on site increases overall site biodiversity.

A total of eleven different tree species have been planted at the site, they are white spruce, lodgepole pine, tamarack, willow, balsam poplar, trembling aspen, white birch, saskatoon, black spruce, red osier dogwood and green alder. The species planted are all native to the site's ecological zone. By planting and maintaining native species, the Project Forest community is contributing to their preservation, promoting biodiversity and restoring the ecosystem.



Increase in Desirable
Natural Vegetation

Purpose

| UN SDG 15 - Life on Land



Indicator 15.2.1: Progress towards sustainable forest management

The Project Forest Rewilding Plans, Monitoring Protocols, and Remediation Actions are designed to ensure the health and success of our forest. *Sustainable forest management* balances the needs of the community with the long-term use of forest resources while preserving the ecological integrity and benefits the forest provides to people and the environment. As part of Project Forest's commitment to rewild land on behalf of our partners and the wider community, we employ a number of tools and metrics to provide scientific verification that our project sites will become mature forests that will benefit the environment and surrounding communities today, and generations to come.

Sustainable Forest

Management is a way of using and caring for forests to maintain their environmental, social, cultural and economic values and benefits over time (NRCAN, 2024).



Adopt-a-patch weed management at Golden Ranches 2023, photo: Latiya Northwest

Rewilding Plans

Prior to planting a forest, Project Forest assesses the land and identifies site limiting factors. A Rewilding Plan is created and site limiting factors are addressed to ensure that the seedlings planted have the best chance of survival (Appendix B - Golden Ranches Rewilding Plan).

Unlike many of our other planting sites, there was no site preparation needed at Project Forest Golden Ranches. Due to continual cultivation and a loamy soil, the existing soil conditions and vegetation were suitable

Purpose

| UN SDG 15 - Life on Land



for planting. Prior to tree planting, we seeded the site with an annual rye grass cover crop. After seeding in 2021, a drought in the area occurred and most of the seed did not germinate until Spring 2022. This allowed many of the weeds that are currently on site to establish.

Monitoring Protocols

The Project Forest Monitoring Plan requires that 2.44 plots per hectare are surveyed and each plot location is permanently marked. This resulted in 138 plots being sampled across the site. The survey data collected is used to prescribe future monitoring and maintenance events. We budget for a 25% fill plant for each project site in the event of significant tree mortality within the first six years. Our monitoring protocol ensures the seedlings planted are on a trajectory to becoming a mature forest through annual monitoring for up to six years post-planting.

Figure 2: Recommended Fill Plant Areas



2023 fill plant areas marked in purple on the Golden Ranches Survey Map (Appendix A)

Remediation Activities

In the event of substantial tree mortality prior to the site passing the standard set out in our monitoring protocols, Project Forest will conduct a fill plant. A fill plant will occur when a 'Not Sufficiently Restocked (NSR)' area is identified. The 2023 survey indicated that a number of areas (marked in purple) may require remediation activities (Figure 2). Golden Ranches receives a fill plant every year through our Edmonton Corporate Planting Events.

Purpose

| UN SDG 15 - Life on Land



Indicator 15.3.1: Proportion of land that is degraded over total land area.

Project Forest is rewilding degraded land that has been disturbed and has not recovered through normal ecological processes.

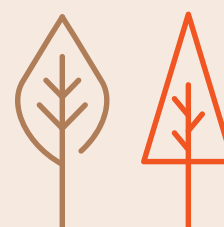
Project Forest Golden Ranches is located 30 minutes east of Edmonton in the Beaver Hills UNESCO Biosphere Reserve, a distinct geographic area of boreal mixedwood forest that supports wetlands, small lakes and streams, and critical habitat for many wildlife species. In the 1950s, the 55 hectare site, along with another 670 ha were cleared for a horse and cattle ranch. In 2010, the Golden Family donated the land to a group of conservation organizations including the NCC with the goal to increase natural recreation space for the public. Prior to rewilding, the site was non-productive with a number of noxious invasive species identified under the Provincial Weed Act present. In the NCC Golden Ranches Area 5 Restoration 2021 Annual Report, Delaney Schlemko states:

Bull Thistle (*Cirsium vulgare*), Common Tansy (*Tanacetum vulgare*), Butter-and-eggs (*Linaria vulgaris*, commonly known as Common Toadflax), Creeping Thistle (*Cirsium arvense*, commonly known as Canada Thistle), Scentless Chamomile (*Tripleurospermum inodorum*), Field Sowthistle (*Sonchus arvensis*, commonly known as Perennial Sow Thistle) and Bladder Campion (*Silene latifolia*, commonly known as White Cockle) were observed (Figure 1; Table 1). Creeping Thistle patches were observed in mixed weed patches with Field Sowthistle.

Rewilding degraded ecosystems has several positive effects including, an improvement to soil health, increased biodiversity, habitat for birds and animals, ground water filtration, and improved air quality.

Ecosystem degradation

is defined as, “an event or process that reduces the productivity or value of an ecosystem, or that delays or prevents an ecosystem from recovering from disturbance through normal successional processes.” (Haeussler et al., 2002)



Purpose

| UN SDG 13 - Climate Action

Goal: Take urgent action to combat climate change and its impacts.

Matching ESG Goals:

- Reducing GHG emissions
- Experiencing nature in an educational and interactive way



The forests we plant can have a significant impact on mitigating climate change.

Indicator 13.2.2: Total greenhouse gas emissions per year

Forests act as carbon sinks, absorbing carbon dioxide (CO₂) from the atmosphere through photosynthesis and storing it in their biomass and soil. By planting forests, we increase the amount of CO₂ sequestered, thereby reducing the concentration of greenhouse gases (GHGs) in the atmosphere. This helps mitigate climate change by reducing the amount of CO₂ that contributes to global warming (NRCAN, 2022).

The amount of CO₂ projected to be removed from the atmosphere over the lifetime of Project Forest Golden Ranches is 65,315 metric tonnes. The estimated lifetime of a forest is 150 years.

Project Forest uses the [Carbon Budget Model of the Canadian Forest Sector \(CBM-CFS3\)](#) modelling framework developed by Natural Resources Canada to assess the impacts of our forests on carbon. This is the national standard for reporting on forest carbon.

65,315

Metric tonnes of CO₂ project to be removed from the air.

Carbon Budget Model of the Canadian Forest

Sector is an aspatial, stand- and landscape-level modelling framework used for international reporting of the forest carbon balance of Canada's managed forest (NRCAN, 2024).

Purpose

| UN SDG 13 - Climate Action



Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Project Forest provides our partners and the wider community with the opportunity to participate in educational activities through our Community and Corporate Outreach Program. Experiencing nature in an educational and interactive way enriches knowledge, fosters a connection with the environment, promotes well-being, and encourages responsible environmental behaviour. These are some of the engagement activities we conducted in 2023:

Lunch and Learns, Keynote Presentations and Panel Discussions

- Overview of the rewilding process, our projects, and stories of community impact
- Stakeholder project impacts and opportunity to engage with the Project Forest team

Corporate Tree Planting Events

- In-person, hands-on volunteering opportunities for Silver, Gold and Platinum financial partners are held annually at Golden Ranches
- Educational talks around seedling physiology, forest succession, tree planting technique, tree planting survey methodology, seed collection, plant identification, and traditional plant uses

Indigenous Engagement

- Opportunity to learn from Indigenous Knowledge Keepers and Elders in various capacities from presentations, interviews and talks, to one-on-one exchanges at our Corporate Planting Events and Annual Partner Celebration

Podcast, radio, tv and webinar interview

- Overview of the rewilding process for general audiences
- Discussions of more in-depth topics such as working with Indigenous communities, operating a non-profit, and sustainable forest practices

Annual Partner Celebration

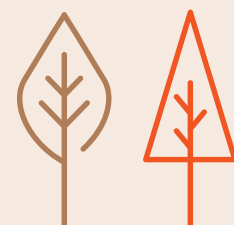
- Presentations featuring a wide range of speakers from the Project Forest community
- Focus on Indigenous reconciliation through rewilding, sustainable business practices, and community investment

Seedling and Seed Kit giveaway events throughout the year

- Opportunity to interact with the Project Forest team
- Celebrate the impact your organization is making
- Engage with the Project Forest community

11

Project Funding Partners



Purpose

| UN SDG 11 - Sustainable Cities and Communities

Goal: Make cities and human settlements inclusive, safe, resilient and sustainable

Matching ESG Goals:

- Generating social & economic growth
- Advancing health & wellbeing
- Developing deeply ingrained Indigenous relationships



Restoring degraded land can have a positive impact on communities through creating safe, resilient, and sustainable natural spaces.

Indicator 11.a.1: Number of countries that have national urban policies or regional development plans that (a) respond to population dynamics; (b) ensure balanced territorial development; and (c) increase local fiscal space

The forests we plant provide areas for recreation and traditional land use within the community. Our funding partners finance the rewilding costs including seedlings, planting, and labour, allowing communities to allocate more funds to services and infrastructure.

Project Forest Golden Ranches provides recreational opportunities in the ecologically unique Beaver Hills UNESCO Biosphere. Visitors to the forest can boost the local economy by increasing revenue from tourism-related activities such as accommodation, transportation and food services.

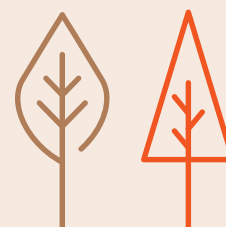
Rewilding projects require labour to complete, including but not limited to:

- Mechanical site preparation
- Seed collection
- Tree planting
- Vegetation management
- Survival assessment survey and data collection
- Cover crop deployment

By investing in rewilding, Project Forest funding partners are creating employment opportunities. The income earned by individuals through these jobs can have a positive economic impact, leading to increased tax revenues for the government and expanding **local fiscal space**.

Local fiscal space

is defined as the sum of financial resources available to a government for the improved delivery of basic services without any prejudice to the sustainability of a government's financial position (Heller, 2005).



Positive Impact

| UN SDG 3 - Good Health and Well-Being

Goal: Ensure healthy lives and promote well-being for all, at all ages.



Planting a forest can have several positive impacts on ensuring healthy lives and promoting well-being for all ages.

Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

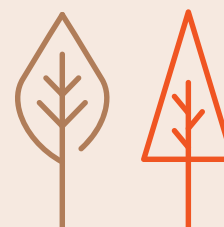
Forests act as natural air filters by absorbing pollutants and particulate matter from the atmosphere. Trees remove harmful gases by absorbing them through their leaf stomata, filtering these chemicals from the air. Particulate matter is intercepted by the tree's surfaces. When it rains, the particles are washed off and carried to the ground. Planting forests can help improve air quality, by reducing the exposure of communities to harmful pollutants. (Nowak et al., 2014)

In addition to improving air quality, forests provide opportunities for people to connect with nature, enjoy recreational activities, and experience the positive physical and mental health effects of spending time outdoors. They also provide various ecosystem services that indirectly contribute to our health and well-being.

Some of the important ecological services provided by forests include:

- cleaning water through water filtration
- cleaning air through oxygen production and absorption of pollutants
- rebuilding of soils and restoration of nutrients
- holding back floodwaters and releasing needed water into rivers and streams
- absorbing CO2 from the atmosphere
- maintaining biodiversity by providing habitat for countless species

These services all indirectly impact human health and well-being.



Positive Impact

| UN SDG 6 - Clean Water and Sanitation

Goal: Ensure availability and sustainable management of water and sanitation for all



The forests we plant can have positive impacts on ensuring the availability and sustainable management of water.

Indicator 6.3.2: Proportion of bodies of water with good ambient water quality.

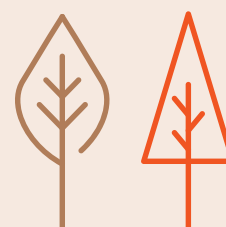
Forests filter, purify and improve the quality of our water. Tree roots help retain soil and reduce the transport of pollutants into water bodies. Planting forests in watershed areas can contribute to protecting water quality, ensuring access to clean water for communities. (NRCAN, 2021)

Project Forest Golden Ranches is located within the Beaverhill watershed, a subwatershed of the North Saskatchewan River watershed. The Beaverhill watershed contains forests and wetlands and supports a diverse range of plants and animals. People use the Beaverhill subwatershed for a variety of recreational activities including bird watching, hiking, canoeing, cross-country skiing, snowmobiling, and horseback riding.

While planting forests alone cannot solve all our water-related challenges, they do offer nature-based solutions to help achieve sustainable management of our water resources.

Target 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

Forests act as natural sponges and filters, absorbing rainfall and gradually releasing it while purifying it as it passes through the ecosystem. By restoring forests, we can enhance water quality, reduce erosion, and promote water retention in the landscape.



Partners

| Funding Partners



Project Forest Golden Ranches

Our work is not possible without you.

Thank you to the Project Forest Golden Ranches funding partners!



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Appendix A - Annual Monitoring Report

Afforestation Survey Cover Page				
Project site: Golden Ranches				
Survey Date(s)	Oct 31 – Nov 1, 2024	Total Plots	138	
		Planted Area	49.7 ha	
Stocking Calculations				
Type of Plot	# of Plots	% of Plots	Meet Final Criteria	% of Plots
SR with Acceptable Conifer trees	22	15.9	0	0
SR with Acceptable Deciduous trees	15	10.9	1	0.7
SR Acceptable Shrubs	25	18.1	12	8.7
SR with Acceptable Conifer & Deciduous trees	2	1.4	0	0
SR with Acceptable Conifer trees & Shrubs	19	13.8	6	4.3
SR with Acceptable Deciduous trees & Shrubs	8	5.8	4	2.9
SR with Acceptable Conifer & Deciduous trees & shrubs	6	4.3	3	2.2
NSR-LIG with Conifer	10	7.2	0	0
NSR-LIG with Deciduous	3	2.2	0	0
NSR-LIG with Shrub	4	2.9	0	0
NSR-LIG with Conifer & Deciduous	0	0.0	0	0
NSR-LIG with Conifer & Shrubs	1	0.7	0	0
NSR-LIG with Deciduous & Shrubs	1	0.7	0	0
NSR-LIG with Conifer & Deciduous trees & shrubs	0	0.0	0	0
NSR -No Acceptable Woody species present	22	15.9	0	0
Acceptable Stocking Summary				
Plot Stocking Status	# of Plots	% of Plots		
SR Plots	97	70.3		
NSR-LIG Stocking	19	13.8		
NSR (excludes NSR-LIG)	22	15.9		
Total Stocking (SR + NSR-LIG):	116	84.1		
Herbaceous Vegetation Observed on Site			Noxious Weeds	
Grass spp.			Canada thistle	
Common alfalfa			Bull thistle	
Clover spp.			Sow thistle	
Dandelion			Common tansy	
Horsetail			Yellow toadflax	
Common yarrow			Sweet clover	
Common cattail				
Strawberry				
Shrubby cinquefoil				
Aster spp.				
Project Comments:				
At the time of surveying, stocking efforts appeared successful as 84.1% of plots were acceptably stocked (SR and NSR-LIG).				
Competitive vegetation and noxious weed species remain a concern for the project area.				
Damaged and dead seedlings were observed by the surveyors at numerous plots, some from wildlife browsing, poor or wet soil conditions, or competitive above and below-ground vegetation.				

Plot	Tree & Shrub Stocking												Status	Tallest in Plot		Risk factors	
	Acceptable		Acceptable		Acceptable		Under Height		Under Height		Under Height			Species	Height (cm)	Evidence of: Damage, Disease, Competition,	Noxious Weeds
	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number					
GR_001	Willow spp.	3	White Spruce	1			Willow spp.	1					SR	Willow spp.	94	grass	
GR_002							Willow spp.	1					NSR-LIG	Willow spp.	36	grass	thistle
GR_003							Lodgepole Pine	1	White Spruce	2			NSR-LIG	Lodgepole Pine	26	grass	tansy, thistle
GR_004	Honeysuckle	1					White Spruce	1					SR	Honeysuckle	79	grass	canada thistle
GR_005	White Spruce	1											SR	White Spruce	33	Grass	Canada Thistle
GR_006	Willow spp.	1											SR	Willow spp.	126	Broken tips Grass	Canadian thistle
GR_007	Willow spp.	1					Willow spp.	1					SR	Willow spp.	69	Broken tips Grass	Canadian thistle
GR_008							White Spruce	1					NSR-LIG	White Spruce	19	Grass	Canadian thistle
GR_009	White Spruce	1					Red Osier Dogwood	1					SR	White Spruce	51	Dogwood has dead branch Grass	Canadian thistle, bull thistle
GR_010	White Spruce	1											SR	White Spruce	31	Grass	Canadian thistle, bull thistle
GR_011													NSR	See "Additional Plots"		Grass	Canadian thistle, bull thistle
GR_012	Willow spp.	2	White Spruce	1			White Spruce	1					SR	Willow spp.	135	MAJOR herbivory damage grass	canada thistle, sow thistle
GR_013	Willow spp.	3					Willow spp.	1					SR	Willow spp.	83	Grass	Thistle
GR_014													NSR	See "Additional Plots"		Grass	Thistle
GR_015													NSR	See "Additional Plots"		Grass	Thistle
GR_016	White Spruce	1					White Spruce	1					SR	White Spruce	30	Grass	Thistle, lots of common tanzy
GR_017	White Spruce	1											SR	White Spruce	30	Grass	Canada Thistle
GR_018													SR	See "additional sites"		Grass	Canada thistle
GR_019	White Spruce	2											SR	White Spruce	33	grass	canada thistle
GR_020							White Spruce	1					NSR-LIG	White Spruce	23		canada thistle
GR_021	Honeysuckle	1	White Spruce	1	Willow spp.	2							SR	Honeysuckle	67	grass	thistle
GR_022	Willow spp.		White Spruce	2			White Spruce	2	Willow spp.	1			SR	Willow spp.	51	one spruce crown dead grass	sow thistle
GR_023	Trembling Aspen	2					Wild Rose	2			Prickly rose	1	SR	Trembling Aspen	165	Grass	Thistle
GR_024	Willow spp.	1											SR	Willow spp.	71	Grass	Canadian Thistle
GR_025													NSR	See "Additional Plots"		Grass	Canadian Thistle
GR_026													NSR	See "Additional Plots"		Struggling white spruce sapling -one surviving branch. Grass	Canadian Thistle
GR_027	Willow spp.	1					Trembling Aspen	3					SR	Willow spp.	65	Leaf damage by insects Grass	Canadian Thistle
GR_028							Red Osier Dogwood	1					NSR-LIG	Red Osier Dogwood	40	Leaf damage by insects or rabbit possibly Grass	Canadian Thistle, tangy outside of plot
GR_029	Willow spp.	36	Trembling Aspen	4			Willow spp.	3	White Spruce	1			SR	Trembling Aspen	110	Leaf damage by insects Grass	Canadian Thistle,
GR_030	Willow spp.	9					Willow spp.	7					SR	Willow spp.	119	Grass	Canadian thistle
GR_031													SR	See "Additional Plots"		Grass	Thistle
GR_032													NSR	See "Additional Plots"		Grass	Thistle
GR_033	White Spruce	1					White Spruce	1					SR	White Spruce	30	grass	tansy, thistle
GR_034							White Spruce	4			Prickly rose	1	NSR-LIG	White Spruce	26	Browning lower needles Grass	Thistle
GR_035	White Spruce	1											SR	White Spruce	38	grass	canada thistle, sow thistle
GR_036	Wild Rose	1					Wild Rose	1					SR	Wild Rose	84	grass	canda thistle
GR_037	White Spruce	1											SR	White Spruce	39	grass	thistle
GR_038	White Spruce	1					White Spruce	1					SR	White Spruce	49		
GR_039													NSR	See "Additional Plots"			
GR_040													SR	See "Additional Plots"			tansy
GR_041	Willow spp.	1					Saskatoon	1					SR	Willow spp.	79	grass	Canada thistle
GR_042	Willow spp.	1											SR	Willow spp.	63	grass	canada and sow thistle
GR_043													NSR	See "Additional Plots"		grass	canada and sow thistle, tansy
GR_044													SR	See "Additional Plots"		Grass	Thistle
GR_045							Willow spp.	1					NSR-LIG	Willow spp.	56	grass	tansy, thistle
GR_046	Raspberry	5	White Spruce	1			Raspberry	4					SR	Raspberry	69	Grass	Thistle, common tanzy
GR_047	Balsam Poplar	7											SR	Balsam Poplar	228	grass	canada thistle
GR_048													NSR	See "Additional Plots"			
GR_049	Willow spp.	1	Trembling Aspen	1	White Spruce	1							SR	Trembling Aspen	88	grass	thistle
GR_050													NSR	See "Additional Plots"		Thistle	
GR_051													NSR	See "Additional Plots"			
GR_052	Trembling Aspen	1											SR	Trembling Aspen	83	grass	thistle
GR_053	Willow spp.	2					Willow spp.	1					SR	Willow spp.	114	Willow galls grass	thistle
GR_054	Trembling Aspen	1					Saskatoon	1	Red Osier Dogwood	2			SR	Trembling Aspen	76	herbivore damage on dogwood grass	tansy, toadflax
GR_055	Balsam Poplar	1											SR	Balsam Poplar	164	grass	tansy, thistle
GR_056	Willow spp.	1	White Spruce	1			White Spruce	1					SR	Willow spp.	95	grass	tansy, canada thistle
GR_057	Willow spp.	2	Balsam Poplar	2									SR	Balsam Poplar	78	Tips of some branches nibbled/broken off Grass	Thistle, common tanzy

Assessment Survey Tally Card

Plot	Tree & Shrub Stocking												Status	Tallest in Plot		Risk factors	
	Acceptable		Acceptable		Acceptable		Under Height		Under Height		Under Height			Species	Height (cm)	Evidence of: Damage, Disease, Competition,	Noxious Weeds
	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number					
GR 058							Lodgepole Pine	1					NSR-LIG	Lodgepole Pine	20	was weed whipped grass	tansy - weed whipping made it more voracious
GR 059													NSR	See "Additional Plots"		Grass	Thistle, lots of common tanzy
GR 060	White Spruce	1											SR	White Spruce	39	grass	thistle
GR 061													NSR	See "Additional Plots"		Insects bite marks on leaves Grass	Canadian thistle
GR 062							Raspberry	1	Trembling Aspen	1			NSR-LIG	Trembling Aspen	52	Insects bite marks on leaves Grass	Canadian thistle
GR 063	Willow spp.	1					Willow spp.	1					SR	Willow spp.	61	Grass	Canadian thistle
GR 064	White Birch	1											SR	White Birch	126	Grass	
GR 065							White Spruce	1					NSR-LIG	White Spruce	29	Grass	Canadian thistle
GR 066							White Spruce	2					NSR-LIG	White Spruce	25	Grass	Canadian thistle
GR 067	White Spruce	1	Trembling Aspen	1									SR	Trembling Aspen	65	Grass	Canadian thistle
GR 068	Willow spp.	16	Balsam Poplar	2									SR	Willow spp.	118	Grass	Canadian thistle
GR 069							Lodgepole Pine	1					NSR-LIG	Lodgepole Pine	17	Grass	Canadian thistle
GR 070	Willow spp.	3					Willow spp.	3					SR	Willow spp.	118	Tips of some branches nibbled/broken off Grass	Thistle, common tanzy
GR 071	White Spruce	1											SR	White Spruce	51	Grass	Canadian thistle
GR 072							White Spruce	1					NSR-LIG	White Spruce	25	Grass	Canadian thistle
GR 073	White Birch	2					White Birch	1					SR	White Birch	71	stepped on	thistle
GR 074													NSR	See "Additional Plots"		Grass	
GR 075							Trembling Aspen	1					NSR-LIG	Trembling Aspen	48	Grass	Canadian thistle
GR 076													NSR	See "Additional Plots"		Grass	Common tansy, thistle
GR 077							White Birch	1					NSR-LIG	White Birch	58	Grass	Common tansy, thistle
GR 078	White Birch	1											SR	White Birch	90	Grass	Common tansy, thistle
GR 079	White Spruce	2					White Spruce	1					SR	White Spruce	46	Grass	Common tansy, thistle
GR 080													NSR	See "Additional Plots"		Grass	Common tansy, thistle
GR 081	Willow spp.	14	Balsam Poplar	1			Balsam Poplar	1	Willow spp.	1	Prickly Rose	1	SR	Willow spp.	160	Grass	Common tansy, thistle
GR 082	White Spruce	1											SR	White Spruce	33	Grass	Common tansy, thistle
GR 083	White Spruce	2											SR	White Spruce	39	Grass	Common tansy, thistle
GR 084	White Spruce	1											SR	White Spruce	30	grass	thistle
GR 085													NSR	See "Additional Plots"			tansy,thistle
GR 086	White Birch	1											SR	White Birch	74	grass	thistle
GR 087	Wild Rose	2											SR	Wild Rose	60	grass	tansy
GR 088							White Birch	2					NSR-LIG	White Birch	56	grass	alfalfa, thistle
GR 089							White Spruce	1					NSR-LIG	White Spruce	25	chlorosis grass	thistle
GR 090	Willow spp.	28											SR	Willow spp.	240	willow galls grass	canada thistle
GR 091	Willow spp.	19											SR	Willow spp.	164	galls grass	thistle
GR 092	Balsam Poplar	4	Willow spp.	4			Balsam Poplar	1					SR	Willow spp.	124	galls grass, clover	thistle, tansy
GR 093	Willow spp.	14	Balsam Poplar	2	Tamarack	1							SR	Balsam Poplar	140	galls grass	thistle
GR 094	White Spruce	3											SR	White Spruce	48	all 3 spruce have drooping/browned branches grass	thistle
GR 095	White Birch	1											SR	White Birch	74	Grass	Common tansy, thistle
GR 096													NSR	See "Additional Plots"		Grass	Common tansy, thistle
GR 097							Willow spp.	1					NSR-LIG	Willow spp.	53	grass	sweet clover
GR 098	White Spruce	1					White Spruce	1					SR	White Spruce	31	grass	thistle
GR 099	Willow spp.	4					Willow spp.	2					SR	Willow spp.	101	grass	tansy, thistle
GR 100	Willow spp.	3											SR	Willow spp.	176	willow galls grass	thistle
GR 101	Tamarack	1											SR	Tamarack	94	very dense grass	thistle
GR 102	Balsam Poplar	1											SR	Balsam Poplar	147	grass	thistle
GR 103	Balsam Poplar	1	Willow spp.	3									SR	Willow spp.	84	grass	thistle
GR 104	White Spruce	1	Balsam Poplar	1			White Spruce	1	Balsam Poplar	1			SR	Balsam Poplar	85	Grass	Common tansy, thistle
GR 105													NSR	See "Additional Plots"		grass	tansy
GR 106	Willow spp.	2	Tamarack	1									SR	White Spruce	98	Grass	
GR 107													NSR	See "Additional Plots"		Grass	Canadian thistle
GR 108	Balsam Poplar	1											SR	Balsam Poplar	75	Grass	Canadian thistle
GR 109	Willow spp.	5	White Spruce	1			Willow spp.	2					SR	Willow spp.	89	Grass	Canadian thistle
GR 110	Willow spp.	9	Balsam Poplar	2	Tamarack	2	Willow spp.	2					SR	Willow spp.	116	Grass	Canadian thistle
GR 111	Willow spp.	17	Balsam Poplar	5	White Spruce	1							SR	Willow spp.	158	Grass	Canadian thistle
GR 112	Willow spp.	12	Trembling Aspen	1	Tamarack		Willow spp.	2					SR	Willow spp.	161	Grass	Canadian thistle
GR 113	Balsam Poplar	1											SR	Balsam Poplar	92	grass	canada and bull thistle, toadflax

Plot	Tree & Shrub Stocking												Status	Tallest in Plot		Risk factors	
	Acceptable		Acceptable		Acceptable		Under Height		Under Height		Under Height			Species	Height (cm)	Evidence of: Damage, Disease, Competition,	Noxious Weeds
	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number					
GR 114	Willow spp.	3	White Spruce	1									SR	Willow spp.	151	willow galls and blight? grass	thistle, tansy
GR 115	White Spruce	1											SR	White Spruce	44	grass	tansy!!!! and thistle
GR 116													NSR	See "Additional Plots"		dense grass	thistle
GR 117	White Spruce	2	Willow spp.	18									SR	Willow spp.	148	Leave insect damage on poplar Grass	Canadian thistle, common tansy
GR 118	Trembling Aspen	1											SR	Trembling Aspen	104	Leave insect damage on poplar Grass	Canadian thistle, common tansy
GR 119	Balsam Poplar	1	Willow spp.	3									SR	Balsam Poplar	100	Leave insect damage on poplar Grass	Canadian thistle, common tansy
GR 120	Balsam Poplar	1	Willow spp.	11									SR	Willow spp.	142	willow galls grass	thistle
GR 121	Willow spp.	4					Willow spp.	1					SR	Willow spp.	90	grass	
GR 122	Willow spp.	7											SR	Willow spp.	147	willow galls grass	canada thistle
GR 123													SR	See "Additional Plots"		grass	thistle
GR 124	Willow spp.	2											SR	Willow spp.	108	galls grass	sweet clover
GR 125	White Spruce	3	Willow spp.	1									SR	Willow spp.	61	grass	tansy
GR 126	White Spruce	1	Willow spp.	1			Willow spp.	1					SR	Willow spp.	79	pest(blight?) grass	tansy, thistle
GR 127	Willow spp.	3	White Spruce	1	Balsam Poplar	1							SR	Balsam Poplar	90	grass	thistle
GR 128	Tamarack	2					Willow spp.	1					SR	Tamarack	86	grass	thistle
GR 129	Willow spp.	1											SR	Willow spp.	66	very dense grass	
GR 130	Trembling Aspen	3											SR	Trembling Aspen	119	grass	
GR 131	Willow spp.	16	Tamarack	1									SR	Willow spp.	128	Grass	
GR 132	Willow spp.	5	White Spruce	2									SR	Willow spp.	145	Grass	Canadian thistle
GR 133							White Spruce	1					NSR-LIG	White Spruce	43	Grass	Canadian thistle
GR 134	White Spruce	1					Willow spp.	2					SR	Willow spp.	51	Grass	Canadian thistle
GR 135	White Spruce	2	Willow spp.	7			Willow spp.	2					SR	Willow spp.	111	Grass	Canadian thistle, cut back common tansy
GR 136	White Spruce	1	Willow spp.	1			Raspberry	5					SR	Willow spp.	75	Grass	Canadian thistle, common tansy
GR 137	Tamarack	1	Willow spp.	2									SR	Tamarack	76	Grass	Canadian thistle, common tansy
GR 138													NSR	See "Additional Plots"		Grass	Canadian thistle, common tansy

Plot	Tree & Shrub Stocking												Status	Tallest in Plot		Risk factors	
	Acceptable		Acceptable		Acceptable		Under Height		Under Height		Under Height			Species	Height (cm)	Evidence of: Damage, Disease, Competition,	Noxious Weeds
	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number					
GR_011a	Lodgepole Pine	3											SR	Lodgepole Pine	57	Grass	Canadian thistle, bull thistle
GR_011b													NSR			Grass	Canadian thistle, bull thistle
GR_014a													NSR			Grass	Thistle
GR_014b	White Spruce	2					White Spruce	1					SR	White Spruce	47	Grass	Thistle
GR_015a													NSR			Grass	Thistle
GR_015b													NSR			Grass	Thistle
GR_018a	Willow spp.	1					White Spruce	1					SR	Willow spp.	100	Grass	Canada Thistle
GR_018b	Wild Rose	1											SR	Wild Rose	82	Grass	canada thistle, sow thistle
GR_025a													NSR			Grass	Canadian Thistle
GR_025b													NSR			Grass	Canadian Thistle
GR_026a													NSR			Grass	Canadian Thistle
GR_026b	Willow spp.	1					Willow spp.	1					SR	Willow spp.	89	Leaf damage by insects , Grass	Canadian Thistle
GR_031a	Willow spp.	2											SR	Willow spp.	89	Grass	Thistle
GR_031b	Willow spp.	2											SR	Willow spp.	87	Grass	Thistle
GR_032a													NSR				Thistle
GR_032b													NSR			Grass	Thistle
GR_039a													NSR				yellow toadflax
GR_039b													NSR				sos thistle
GR_040a							Willow spp.	1					NSR-LIG	Willow spp.	59	Grass	tansy, toadflax, thistle
GR_040b	Willow spp.	1					Willow spp.	1					SR	Willow spp.	70	Grass	tansy, toadflax, thistle
GR_043a	Wild Rose	1					Wild Rose	2					SR	Wild Rose	65	Grass	canada and sow thistle, tansy
GR_043b													NSR			Grass	canada and sow thistle, tansy
GR_044a	Willow spp.	1											SR	Willow spp.	42	Grass	Thistle, common tanzy around plot
GR_044b	White Spruce	1											SR	White Spruce	30	Grass	Thistle
GR_048a													NSR				
GR_048b	White Spruce	2	Raspberry	1									SR	Raspberry	83	Canada Thistle	
GR_050a													NSR				
GR_050b													NSR			Grass	
GR_051a													NSR				
GR_051b													NSR				
GR_059a							Honeysuckle	1					NSR-LIG	Honeysuckle	51	Grass	Thistle, lots of common tanzy
GR_059b													NSR			Grass	Thistle, lots of common tanzy
GR_061a	White Birch	1											SR	White Birch	81	Insects bite marks on leaves , Grass	Canadian thistle
GR_061b													NSR			Grass	Canadian thistle
GR_074a													NSR			Grass	
GR_074b													NSR			Grass	
GR_076a	White Spruce	2											SR	White Spruce	41	Grass	Common tansy, thistle
GR_076b													NSR			Grass	Common tansy, thistle
GR_080a													NSR			Grass	Common tansy, thistle
GR_080b	Willow spp.	6	Balsam Poplar	1					Prickly Rose	1			SR	Willow spp.	139	Grass	Common tansy, thistle
GR_085a													NSR			Grass	thistle, tansy

Plot	Tree & Shrub Stocking												Status	Tallest in Plot		Risk factors	
	Acceptable		Acceptable		Acceptable		Under Height		Under Height		Under Height			Species	Height (cm)	Evidence of: Damage, Disease, Competition,	Noxious Weeds
	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number	Species	Number					
GR_085b	Raspberry	2	White Birch	1									SR	Raspberry	74	Grass	thistle, tansy, toadflax
GR_096a							Raspberry	1					NSR-LIG	Raspberry	52	Grass	Common tansy, thistle
GR_096b													NSR			Grass	Common tansy, thistle
GR_105a	Willow spp.	1											SR	Willow spp.	70	Grass	tansy
GR_105b													NSR			Grass	tansy
GR_107a	White Spruce	1											SR	White Spruce	63	Grass	Canadian thistle, common tansy
GR_107b													NSR			Grass	Canadian thistle, common tansy
GR_116a													NSR			Dense grass	thistle, tansy
GR_116b													NSR			Dense grass	thistle, tansy
GR_123a	White Spruce	1	Willow spp.	1									SR	Willow spp.	90	Grass	thistle
GR_123b	White Spruce	1	White Spruce	1									SR	Willow spp.	118	Galls, grass	
GR_138a													NSR			Grass	Canadian thistle
GR_138b							Willow spp.	1					NSR-LIG	Willow spp.	55		Canadian thistle



Golden Ranches Survey Plot Status Fall 2024

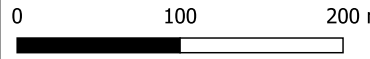
Project Partners:



- Plot Status
- SR-S (Orange circle)
 - SR-DS (Yellow circle)
 - SR-D (Light yellow circle)
 - SR-CS (Green circle)
 - SR-CDS (Brown circle)
 - SR-CD (Light green circle)
 - SR-C (Dark green circle)
 - NSR-LIG-S (Orange diamond)
 - NSR-LIG-DS (Yellow diamond)
 - NSR-LIG-D (Light yellow diamond)
 - NSR-LIG-CS (Brown diamond)
 - NSR-LIG-C (Green diamond)
 - NSR- (White circle)
 - Project Boundary (Red outline)



Date Created: 2025-02-05
Project CRS: EPSG:3400
Source: Google Satellite
Created By: Tree Time Services Inc.
Scale: 1:3,000





Golden Ranches 2024 Survey Fill Plant Area

Project Partners:



Plot Status	NSR-LIG-DS
SR-S	NSR-LIG-D
SR-DS	NSR-LIG-CS
SR-D	NSR-LIG-C
SR-CS	NSR-
SR-CDS	Fill Plant Area
SR-CD	Project Boundary
SR-C	
NSR-LIG-S	



Date Created: 2025-02-05
Project CRS: EPSG:3400
Source: Google Satellite
Created By: Tree Time Services Inc.
Scale: 1:3,000

0 100 200 m



Site Photos

Plot GR_001



Plot GR_012



Plot GR_021



Plot GR_033



Plot GR_041



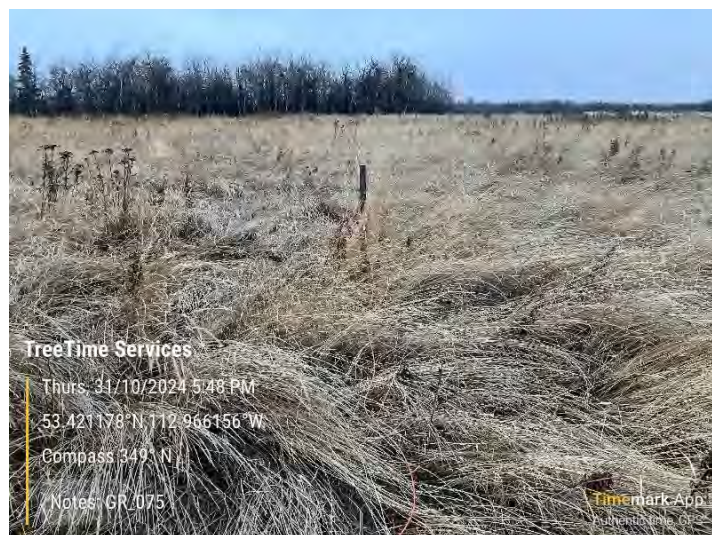
Plot GR_058



Plot GR_060



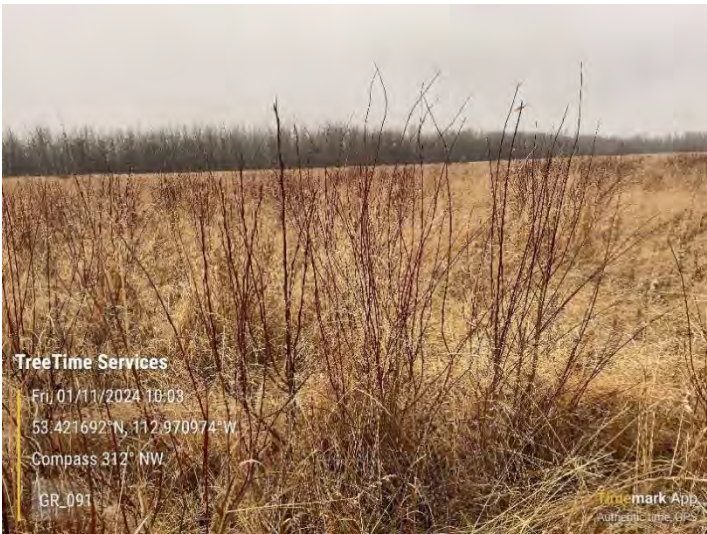
Plot GR_075



Plot GR_086



Plot GR_095



Plot GR_102



Plot GR_113



Plot GR_125



Plot GR_133



Project Forest Monitoring Assessment Summary Sheet

Project Name	Golden Ranches
Applicability	Trajectory of re-wilding success
Landowner	NCC
Site Location	53.420853,-112.968777
Year Planted	2021
Assessment #:	3

First and last name of qualified surveyors (or as attached):

Andrea McRae, Sienna Vance

Disturbance Areas and areas to be removed from reforestation project area(s):

Yes, 1 ha has been removed from the project area due to ATCO line maintenance close the south and east boundaries of the project area. The maps reflect the chance and removal of ATCO line area.

As per the Project Forest Monitoring Program, all area(s) impacted by forest fire, insects, or industrial development will be removed from the afforestation project area. No such disturbances were recorded.

Summary of Preventive and Corrective Actions:

Two NSR areas have been identified and may be considered for fill planting, however Total Stocking (SR + NSR-LIG) is at 84.1%.

There is a reasonable likelihood that a sufficient percentage of NSR-LIG sites will become SR sites within the coming years.

Declaration:

I do hereby declare that this submission:

- a) Adheres to all components of the required Quality Assessment/Quality Control program,
- b) Includes only surveys that have been conducted according to the methods detailed in the Project Forest – Golden Ranches Reforestation Monitoring Program, and,
- c) Complies with the requirements for report timing and format.

Validated/Signed by:



Print Name:

Lindsay Dent

Registration #

1838

Company:

Tree Time Services Inc.

Date:

January 17, 2024

Appendix B - Restoration Overview



Golden Ranches Restoration Overview

Prepared by:
Project Forest



This document provides an overview of the restoration plan for Project Forest at the Golden Ranches property of NW 24-51-21 W4M. Timing and exact quantities of seedling are approximate.

Site Restoration Plan

Species and stock types

We will be using the following species and stock types for this planting:

Table 1: Species recommended for planting at Golden Ranches site

Species	Stock Type	Stock Size
White spruce	Plug - 1+0	410A
Black spruce	Plug - 1+0	410A
Balsam poplar	Plug - 1+0	415D
Trembling aspen	Plug - 1+0	415D
Larch/Tamarack	Plug - 1+0	412A
White birch	Plug - 1+0	415D
Lodgepole Pine	Plug - 1+0	410A
Willow spp.*	Plug - 1+0	412D
Buffaloberry**	Plug - 1+0	415D
Saskatoons**	Plug - 1+0	412D
Prickly wild rose**	Plug - 1+0	415D

***Note:** Willow spp. refers to a mix of native willow species.

****Note:** Potential shrub species that may be deployed if available, others local to the area may be considered.

Site preparation and maintenance

Unlike many planting areas, there is no site preparation required for the soil conditions or current vegetation. Due to continual cultivation and a loamy soil, the soil is currently suitable for planting.

To reduce the establishment of weeds and forage grasses in the bare soil, we will establish a cover crop be established prior to planting. The recommended seed mix for a cover crop would be a Central Parkland Native Seed Mix (Reference – **Table 2**) blended with an annual rye grass.

The annual rye grass would quickly establish on the site to prevent weed establishment. This would provide a short-term cover crop as the other species take more time to establish and cover the site.

Table 2: Central Parkland Native Seed Mix

Species	Percentage of Mix
Slender Wheatgrass	25%
Northern Wheatgrass	15%
Fringed Brome (ultracoat)	15%
Green Needlegrass	15%
Canada Wild Rye (ultracoat)	10%
Indian Ricegrass	10%
Alkaligrass	10%

Note: An annual rye if added would make up 10% of the total seed mix.

Maintenance

The only recommended maintenance activity would be for weeds. As weeds establish onsite, a backpack sprayer could be used a few times annually to remove them as needed. Closer to the roads where the conifers will be exclusively planted, more aggressive annual weed spraying may have to occur.

Planting strategy/techniques

The planting strategy would be dividing the site into three different areas (Reference **Appendix A**) based on their topography and relative amount of wind protection. These areas would reflect their suitability for different species and their relative planting proportions.

Area 1

This area is primarily the north west of the site and is mostly a lower elevation relative to the rest of the site. Much of this area is on a slope with a northern and western aspect. At the bottom of the slope is a poorly drained area with a coarser soil texture relative to the rest of the site.

Table 3: Recommended Species for Golden Ranches Area 1

Species	Proportion	Comments
Willow	20%	Planted in the wetter areas, mostly in the north
Balsam poplar	20%	A few larger clusters and scattered throughout site
White spruce	20%	Distributed throughout the site
Black Spruce	10%	Planted in the wetter areas, mostly in the north
Larch	30%	Planted in the wetter areas, mostly in the north

Area 2

This area is the exposed ridge that runs through the centre of the site on an east to west orientation. As this is the most exposed area, it is the most stressful to seedlings. There will be less snow on this area, and more desiccation during winter. Conifer seedlings will be planted in protected spots. Deciduous species will be planted here as they are less prone to winter kill and desiccation as they have no foliage in winter.

The species selection in this area would be a mixture of more deciduous and stress tolerant species.

Table 4: Recommended Species for Golden Ranches Area 2

Species	Proportion	Comments
White spruce	25%	Planted behind residual tree stand
Lodgepole Pine	10%	Planted behind residual tree stand
Balsam poplar	15%	Planted throughout the area
Trembling aspen	15%	Planted throughout the area
White birch	35%	Planted throughout the area

Area 3

This area is composed of the southern and eastern portion of the property. It is bordered by the ridge and property boundaries. This area is a bit more protected than the ridge, though not as much as Area 1. There are some lower, wetter spots, and ditch plugs were installed changing the immediate soil moisture conditions in smaller areas.

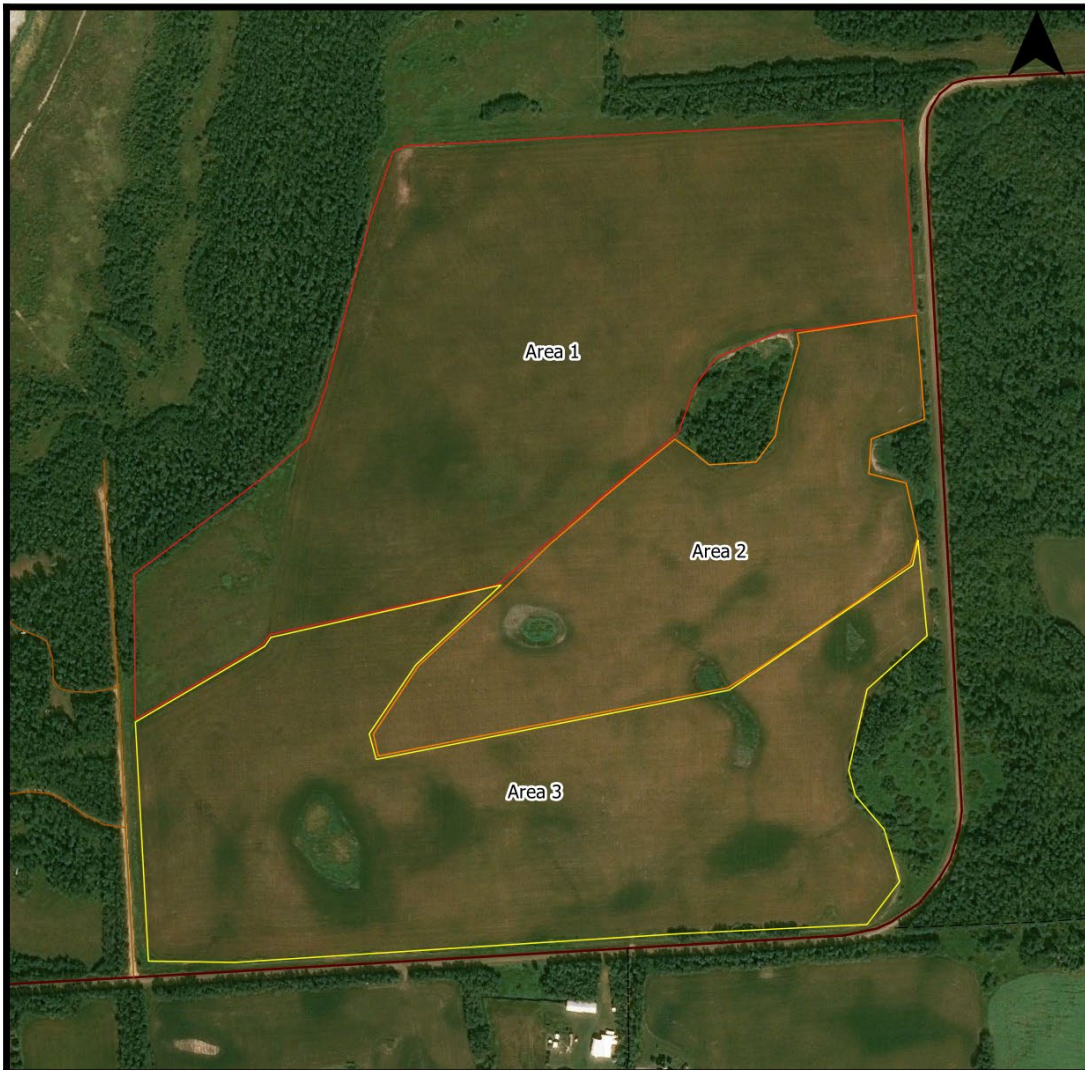


Closest to the road will be exclusively conifer. This area will have the highest weed presence and require the most aggressive management activities. The wetlands will have willows planting around them.

Table 5: Recommended Species for Golden Ranches Area 3

Species	Proportion	Comments
White spruce	40%	A couple of larger clusters throughout area
Lodgepole pine	30%	A couple of larger clusters throughout area
Trembling aspen	20%	A couple of small clusters throughout area
Willow	10%	Plant along the wetter areas

Appendix A – Map of Planting Area



Project - NCC Golden Ranches
Location - 369131E 5920898N
Overview
Projection - UTM NAD 83 Zone 12
Scale - 1:5000

0 0.1 0.2 0.3 km

Areas

- Area 1 - 20.26 ha
- Area 2 - 10 ha
- Area 3 - 18.43 ha