

Working in Native Grassland

A primer for Project Managers and Contractors

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Principles for Minimizing
Surface Disturbance in
Native Grassland



Principles, Guidelines and Tools for all
Industrial Activity in Native Grasslands
in the Prairie and Parkland Landscapes
of Alberta

Alberta

Background

The Government of Alberta has long recognized the need to conserve native grassland ecological resources for future generations. Industrial activity, agriculture, recreation and conservation interests are often competing to use the same piece of land. Working together with these stakeholder groups, the oil and gas industry and government regulatory authorities have developed principles, guidelines and tools that reduce the footprint of industrial activity in this multiple use landscape.

Project managers and contractors must understand where they are working, the applicable regulatory authority and the operating conditions that apply for the proposed activity. [Principles for Minimizing Surface Disturbance in Native Grassland](#), [Principles, Guidelines and Tools for all Industrial Activity in Native Grassland in the Prairie and Parkland Landscapes of Alberta \(AEP 2016\)](#), provides the background and direction for industry.

What does “Minimizing Surface Disturbance in Native Grassland “ imply?

The overarching principle is to:

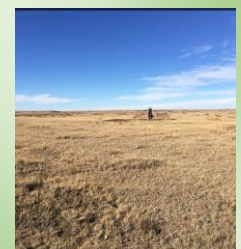
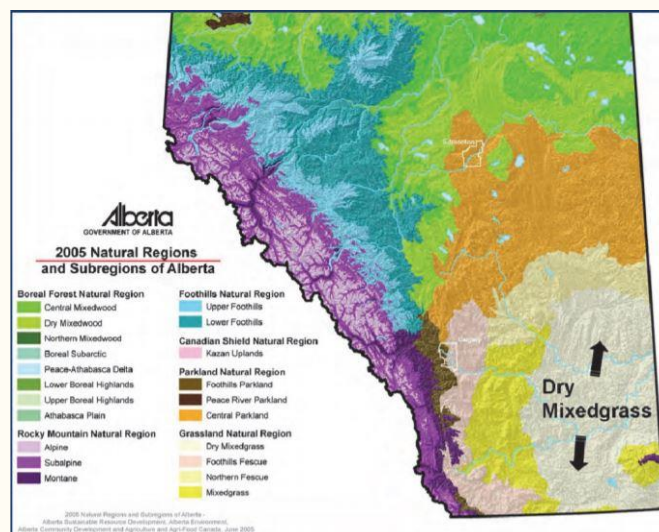
- Avoid native grassland;
- If avoidance is not possible, then reduce the area of impact to the soils, native plant communities, wildlife and water resources; and
- Develop practical activity-specific methods that will allow for the eventual restoration of disturbed native plant communities.

Why is project location important?

The remaining native grasslands are located within the Grassland, Parkland and portions of the Rocky Mountain Natural Regions of Alberta. Classification is based on climate, soils, terrain, and native plant communities. Each Natural Region presents unique challenges for industrial activity.



*Dry Mixedgrass Natural
Subregion (Gramineae
Services)*



*Reduced disturbance
wellsite on native
Grasslands (Conrad, J)*



Regulatory Agencies and Resources

The Alberta Energy Regulator (AER) is responsible for regulating the life cycle of oil, oil sands, natural gas, and coal projects in Alberta through the [Responsible Energy Development Act](#). The [OneStop \(AER\) application system](#) is what industry must use for new applications on Public Lands and reclamation certification closure on both private and public lands.

The [AER Manual 007: Principles for Minimizing Surface Disturbance in Native Prairie and Parkland Areas \(April 2014\)](#) provides best management practices to minimize disturbance of native prairie and parkland areas on both private and public land associated with petroleum industry development.

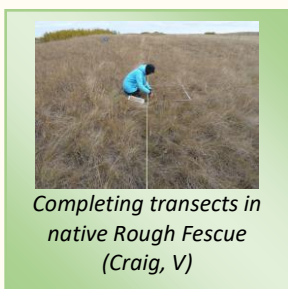
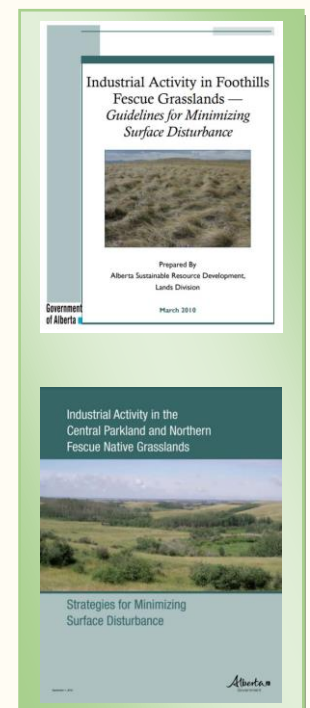
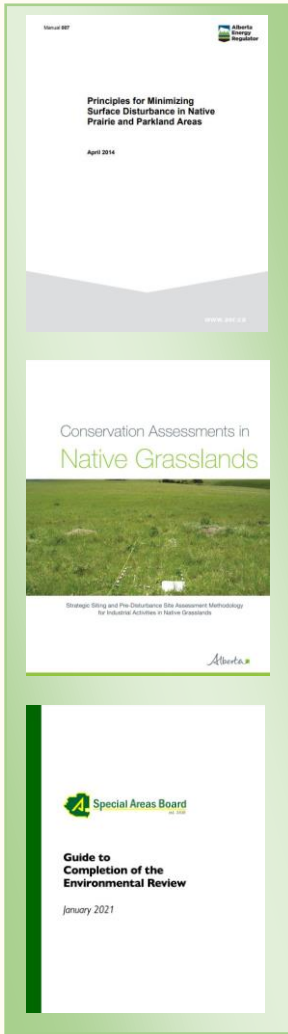
Alberta Environment and Parks provides guidance for conducting conservation assessments in: [Conservation Assessments in Native Grasslands: Strategic Siting and Pre-Disturbance Site Assessment Methodology for Industrial Activities in Native Grasslands \(AEP 2018\)](#)

[Special Areas Board](#), the municipal government for a large portion of east central Alberta, requires a specific environmental review process for all proposed industrial development on Special Areas Board regulated public land and has specific policies, guidelines and operating conditions for existing industrial activity.

Rough fescue grasslands are very difficult to restore following industrial activity. Specific guidelines apply to these native grasslands in the Northern Fescue, the Foothills Fescue, the Foothills Parkland and the Montane Natural Subregions.

To assist industry in obtaining approvals and maintaining compliance:

Early engagement of qualified environmental professionals with native grassland assessment training and reclamation experience is recommended to provide valuable assistance to project teams. These professionals have the tools and expertise to ensure that development and operating conditions can be met and costly mistakes avoided. Professional signoff is required for reclamation certification.



Completing transects in native Rough Fescue (Craig, V)



Access and Work Plan

Use Respect, contact the landowners, occupants or grazing lease holders prior to entering the project lands. Discuss with the landowners or grazing lease holders the best route to access the site. Do not travel outside the agreed to access.

Schedule the timing of activities to comply with identified wildlife timing constraints, or implement mitigation measures to ensure no impact to sensitive species. [Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta \(GoA 2011\)](#)



Contingency planning to avoid to soils, vegetation, and habitat (Ball, N)



Prairie wildfire (Ball, N)

Best Management Practices

All access and on lease work must be conducted under **suitably dry or frozen ground conditions**. Contingency planning for all activities is required for sudden rainfall events or unstable winter conditions such as Chinooks to prevent rutting, admixing, and compaction of unstripped soils.

All equipment and vehicles must be cleaned prior to entry to ensure no transmission of soil and vegetative material from previous sites. Equipment and vehicles must be recleaned before entering the next site.

The Contractor must have in place a Hazardous Materials Handling and Spill Response Plan, trained employees and the materials required to implement the plan.



The Contractor must have in place a Fire Control Plan, with trained staff and the equipment required to efficiently implement the plan. Grassland wildfires are possible at any time of the year **including winter months**. Comply with local municipal guidelines and notifications. The Canadian Association of Petroleum Producers have Best Management Practices listed on their website.

The Contractor must have in place a Traffic Control Plan that minimizes the amount of traffic required to implement the work. On minimal disturbance sites, implement one-way traffic control and confine the traffic to the two-track gravelled access trail. Efficiently organize the equipment and vehicles within the work space to reduce the disturbance to the soils and native plant communities.

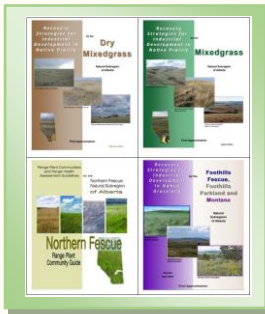


Traffic Control Plan in place implementing one-way traffic control on a two-track gravelled trail (Conrad, J)

Where necessary for the completion of specific construction activities, site- specific soil conservation and handling must be planned in advance. Consultation with experienced professional agrologists who are familiar with the project area soils and minimal disturbance soil handling procedures is recommended. Reducing the time lapse between stripping and replacement of topsoil increases the successful re-establishment of native vegetation on these disturbed areas, therefore increasing site stability and advancing reclamation.



Soil Assessment and Conservation Planning (Neville, M)



Reclamation and Recovery Strategies

The **Recovery Strategies for Industrial Disturbance Project** provides context and recommendations for project planning and completion with a view to the recovery and eventual restoration of industrial disturbances in native grasslands. The manuals are prepared to address the unique challenges faced in each Natural Subregion. [Manuals are available through the Grassland Restoration Forum website.](#)

Conduct a post- construction site assessment following the completion of the work. Ensure all remedial reclamation required is in compliance with project specific conditions for approval.

The use of non-native agronomic species during interim and final reclamation in native grassland is prohibited. [Problem Introduced Forages on Prairie & Parkland Reclamation Sites \(R&R/03-5\)](#); [Special Areas](#)

[Policy 06-06: Invasive Introduced Forages on Reclamation Sites](#)

Assess the site for weeds as regulated by the Alberta Weed Control Act. Design and implement a weed control plan. **Weed control remains the responsibility of the leasee until reclamation certification at abandonment**

Avoid importing topsoil, which can result in the importation of weeds and incompatible soil properties that compromise reclamation certification. Ensure that imported soil is weed free and that the soil quality matches the soil quality adjacent to the disturbed site.

Native plant communities have evolved and thrive under reduced soil nutrient and moisture conditions. The use of fertilizer or manure as soil amendments promotes growth of non-native plants and increases the risk of weeds and non-native agronomic species invasion on disturbed native grassland sites. **Fertilizer or manure increase the potential for weed and invasive agronomic species invasion.**

During final reclamation at abandonment do not remove two track gravel access trails unless required on a site-specific basis by AER. The native grasses fill in the tracks over time.



*Erosion control
(Neville, M)*

*Experienced
professional
assistance is
advised*



*Wild seed harvester
(Neville, M)*

Pre-construction planning is required when geotextiles and or matting are used to protect unstripped grassland. Planning must consider the type of geotextiles or matting used, the time frame required to complete the work at the site, a removal plan to allow the grassland to recover during the growing season and a contingency plan for adverse weather conditions.

Erosion and sediment control plans may be required for erosion prone soils, steep slopes and adjacent to wetlands and/or watercourses.

The size of the surface soil disturbance, and condition of the native plant community surrounding grassland will direct which recovery strategy is appropriate for the site. Consult the appropriate [Recovery Strategies Manual](#) for the Natural Subregion where the project is located.

For disturbances requiring seeding, identify the seed mix based on the soils and associated native plant community surrounding the disturbance and information gathered from post construction site assessments. Guidance on suitable mixes can be found in the appropriate [Recovery Strategies Manual](#) for each Natural Subregion. Guidance on selecting and assessing native seed is provided in the publication [Plant Material Selection and Seed Mix Design for Native Grassland Restoration Projects \(TCS 2016\)](#), available on the Grassland Restoration Forum website.



*Minimal disturbance -
geotextiles & matting
(Wilkinson, M)*

The Foothills and Northern fescue grasslands are very difficult and time consuming to restore. Wild harvested seed and or nursery raised plant material may be required.

Design and implement a monitoring program and secure funding for remedial reclamation where required to meet reclamation certification requirements.