

# The Green Acreages Guide Primer

Stewardship for Small Acreages



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## Disclaimer

The information provided in this publication is written from a Canadian prairie perspective, with a specific focus on the legislation of and available resources within the Province of Alberta as of December 2011. For more information on local conditions and legislation in other jurisdictions, contact the appropriate agencies in your area. The intent of this document is to provide explanatory and interpretive information only. This material is not a replacement for regulatory documents and is not to be used or referenced as such. Land Stewardship Centre accepts no responsibility or liability for any loss or damage that any person may sustain as a result of the information in, or anything done or omitted in reliance on, this document.

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## About Us

Land Stewardship Centre is a not-for-profit charitable organization that works with, and develops informative resources for individuals and organizations which own, or are responsible for managing land and its associated natural resources. For more information visit [www.landstewardship.org](http://www.landstewardship.org).



Photo Credit: Claudette Lacombe

## Introduction

Alberta's rural landscape is changing. Ownership of small acreages, hobby farms and recreational properties is growing, and property owners are searching for information on how to manage their properties in a way that protects their investment and protects the environment.

### Become a Better Steward

As a landowner you want to do the right thing for your property. The Green Acreages Guide Primer can help you get started. Developed especially for acreage, hobby farm and recreational property owners, this handy Guide will help you better understand what it means to be a rural property owner and identify stewardship practices that will help you conserve and protect the valuable natural assets associated with your property.

### Make the Most of Your Rural Property

Appropriate property management can protect your investment in your acreage or recreational property. Well managed, productive and attractive properties are more appealing to buyers, and working with the environment will save you time and money. The Green Acreages Guide provides landowners with a better understanding of what it means to make informed decisions and adopt responsible management practices.



Photo Credit: David Fairless



# Life in Rural Alberta

While owning an acreage can be a very fulfilling lifestyle choice, it is important to know that living in the country is a different way of life than living in the city.





## Rural Communities

Rural Alberta is composed of rich and diverse communities that consist of farms, ranches, commercial, industrial and natural areas. All have different needs but all can exist together when consideration is given to these different needs.

As a landowner, you make decisions every day that affect the landscape. Having a basic understanding of local ecology and an awareness of ecological functions can provide you with the knowledge to make informed decisions about your property.

Landscapes and ecosystems are always changing through the complex interactions between people, plants, animals and the environment. How an ecosystem developed can tell you a lot about how it works, and how changes made to it might affect the landscape and local ecology. Even seemingly small changes, like clearing trees along a stream, will have larger consequences for the soil, water and animals in the area.

### What You Can Do

In rural areas, your neighbours can have an effect on your property, just as you can have an effect on theirs. It is a good idea to view your acreage at different times of the day or week. This will give you an idea of the types of traffic patterns or surrounding activities that you may experience or which may have an impact on your property.



### Did You Know

A watershed is an area of land that drains into a particular body of water. Understanding where you are in the local watershed will help you understand how the water flows on and around your property, whether you are upstream or downstream of major users and the potential for pollution to enter local bodies of water.

Ecozones are large areas of land with similar topography, climate, vegetation and wildlife. If you understand your place within an ecozone, you can recognize the types of landscapes and ecosystems that occur naturally in your area. This knowledge will help you determine appropriate plant species for your property.



Photo Credit: Lois Gilchrist



Photo Credit: Owen Jung

# Know Your Neighbourhood

Acreages are often developed on land previously used for agriculture and they often have working farms nearby. Farmers frequently work around the clock, especially during seeding time in the spring and harvest time in the fall. Operations like baling hay are often done at night or at irregular hours and preparing fields for planting can cause dust, especially during dry, windy weather. Pesticides are used as a farm management tool to control weeds and insects that cause damage to crops. These are all normal aspects of farm life; be aware of them before you buy a property near a working farm. You will also need to be aware of and address issues such as possible weed transfer from your property to cultivated fields and pets that may interfere with livestock.

Transportation and utility corridors are areas that have been set aside to meet future needs for infrastructure like roads or power lines. There is no guarantee that existing land uses will continue indefinitely, so it is your responsibility to be aware of potential future development.

Resource companies have the right to develop resources located under private property and to install pipelines or other infrastructure on or under private property. Be aware of your rights and responsibilities regarding resource extraction and transport on your property, as well as the obligations these companies have to consult with landowners and accommodate their concerns as much as possible.



## Did You Know

The *Alberta Agricultural Operation Practices Act* (AOPA) specifies generally accepted agricultural practices and states that agricultural operators cannot be considered a nuisance when carrying out these practices. The Act provides guidelines that farmers and ranchers must operate within to mitigate odour, noise, dust, smoke and other disturbances resulting from an agricultural operation.



## Who Can Help

Your local municipal office will have Area Structure Plans and other documents to help you determine property zoning and future developments that may be planned. If your property is adjacent to another municipality, check with that municipal office as well.



## Questions to Ask

- Where are the legal property boundaries and are all buildings, structures and fences within the boundaries?
- Do all existing buildings conform to local zoning by-laws? It is within a municipality's rights to require landowners to remove structures that do not conform to zoning requirements.
- Are there any easements, including conservation easements, registered against the property?
- Are there any environmental or municipal reserves adjacent to your property?



## Rules and Regulations

It is your responsibility to be aware of any relevant legislation or regulations (federal, provincial and municipal) that affect you or your property. In general, this will usually include municipal regulations like bylaws, zoning regulations and requirements under Municipal Development Plans.

Permits are required for most building, development and renovation projects. For a controlled burn, you will need a fire permit. Contact the planning and development department of your municipal office for the appropriate forms and help in completing the forms.

There are different kinds of easements and rights-of-way that may be applied to a property. For example, easements can be given to utility companies for the right to bury cables, and install and access utility lines. A conservation easement is a voluntary legal agreement between a landowner and a qualified conservation organization that conserves an area of land in perpetuity. Easements are registered on the land title and apply to all future owners of that land. A right-of-way is defined as the right to pass over property owned by another, or the strip of land over which facilities such as highways, railroads, pipelines or power lines are built. A right-of-way, even if it passes over private property, is considered the property of the utility owner and not of the landowner.



### Did You Know

● Environmental reserves prevent development on potentially unstable land. Environmental reserve land is not private property; it belongs to the municipality. It cannot be developed or altered by private landowners in any way. This means you are not allowed to cut down any trees, clear any vegetation or build any structures on the reserve land.





## Rural Utilities and Services

Before you buy an acreage, find out what services the municipality provides and which services you are responsible for.

The more remote your acreage is, the less likely you are to have access to services like mailbox letter and newspaper delivery, dust abatement on gravel or unpaved roads and snow removal.

Telecommunications including cellular phone, cable and internet service may also be less reliable than in urban centres. Check with the local municipal office or private companies for the types of services available. Remember, even if the service is available, the quality may not be the same as in the city, especially for internet and cell phone service.

Acreages can be more susceptible to power disruptions caused by adverse weather, and it may take longer to restore power to remote areas. If you have a long driveway to the road, consider the effort required to clear it after a snowfall. You may also need an all-wheel-drive vehicle to safely travel on rural roads after snowstorms.

### Questions to Ask

- ▶ Does your acreage have a fire hydrant nearby? If not, you should maintain a dugout or other water source sufficient for fire-fighting needs.
- ▶ Do you know your rural address in case you need to tell emergency responders?
- ▶ Do you know what emergency response times are likely to be? Response times will usually be longer in rural areas.



The range and availability of utilities and services offered in rural areas varies by municipality.





## Questions to Ask

- Is the property serviced by municipal sewer systems?
- If it is not, do you have installation and maintenance records for the septic system?
- Do you know how often the septic tank needs to be pumped?
- Do you know where the septic leaching bed is located?



# Waste Management

In many cases, municipal sewer services are not available in rural areas and on-site septic systems are required. If municipal wastewater services are available, it is possible that only low pressure wastewater service is provided. With this type of system, only the liquid wastewater is discharged into the sewer main, and landowners must remove solid waste with septic tanks and pumps. Septic systems require regular maintenance to ensure they are functioning properly.

Most municipalities do not offer curb-side garbage pick-up to acreage and rural property owners. Residents can haul their garbage to landfills or transfer stations that serve their local area. Hours of operation, types of garbage accepted, fees charged and permits required vary across the province. Your municipal website should have this information. Your other option is to hire a private waste disposal service.

In addition to landfills and waste transfer stations, most municipalities in Alberta accept material for recycling. Recycling centres generally accept paper, plastic, metal and glass. Many municipal waste collection facilities also accept electronics, tires, used oil, oil filters and containers, old paint and paint containers. Check with your municipal office for more information on local recycling facilities.



## ? Did You Know

- ▶ Toxic Round-up Days or Hazardous Waste Roundups, held throughout the province, will accept paints, solvents, batteries, used oil and compact fluorescent light bulbs.
- ▶ The Pesticide Container Management Program maintains over 100 sites throughout the province where used pesticide containers can be dropped off. Do not throw pesticide and herbicide containers in the garbage; any residue in these containers can contaminate landfills.
- ▶ Most municipalities have recycling collection sites for old paint, tires and electronics.

## Composting 101

Composting vegetable peels, grass cuttings, leaves and twigs removes more than a third of the material that goes to landfills. Compost is an excellent soil conditioner, improves the water holding capacity of soil, adds nutrients to soil and improves soil texture. A thin layer of compost spread evenly over a lawn and raked in acts like a natural fertilizer.

Composting works best when there is an equal mixture of “green” nitrogen sources and “brown” carbon sources. Fruit and vegetable scraps and fresh grass clippings are good sources of nitrogen, while straw and dried leaves are good sources of carbon.



## Signs of Trouble

- ▶ Has the property ever been flooded? Flooding increases the risk of well contamination.
- ▶ Is the well more than 25 years old? If so, it may need to be upgraded to meet current construction standards.
- ▶ Are there unpleasant odours, sediment, or slime buildup on household plumbing fixtures? This can indicate water well problems.
- ▶ Are there pet or livestock wastes, chemicals, or fuel present within 50m of a well? Contaminants from these sources can leach into well water.
- ▶ Are there signs of underground storage tanks for oil, aviation fuel, gasoline or other hazardous liquids, such as pipes sticking out of the ground? These are potential contamination sources.



## Domestic Water

### Know Where Your Water Comes From

If your acreage is not serviced by a municipal water supply, you will need either a well or cistern. Either system can be costly to install and both require regular maintenance.

A well must be drilled by a licensed driller and properly sited where it can be easily accessed for cleaning, testing and repair. Ensure wells are an appropriate distance away from septic systems, livestock areas and low-lying areas where water collects. Understand how wells are designed and how they work, learn about common well problems and know what to watch for to feel more confident with the process of managing and maintaining your water well.

If your property has a cistern, you will either need to haul water or pay a contractor to refill the tank periodically.

### Questions to Ask

- ▶ Is the property serviced by municipal water systems?
- ▶ If it is not, do you have installation and maintenance records for the well or cistern?
- ▶ Do you have a well drilling agreement?
- ▶ Do you know how often the cistern needs to be refilled?
- ▶ Are there any unused wells on the property? If so, they must be either properly decommissioned or regularly maintained.



# Stewardship

Stewardship is the recognition of our collective responsibility to retain the quality and abundance of our land, air, water and biodiversity and to manage this natural capital in a way that conserves all of its values: environmental, economic, social and cultural.



House  
Garage  
Barn  
Shed  
Stable  
Driveway  
Sidewalk  
Paths  
Roads  
Trails  
Fences  
Lawn  
Flowerbeds  
Fields  
Pastures  
Treed areas  
Lakes  
Ponds  
Streams  
Creeks  
Ravines  
Rivers  
Wetlands  
Water wells  
Water lines  
Septic system  
Sewer lines  
Gas lines  
Oil lines  
Power lines  
Property boundaries

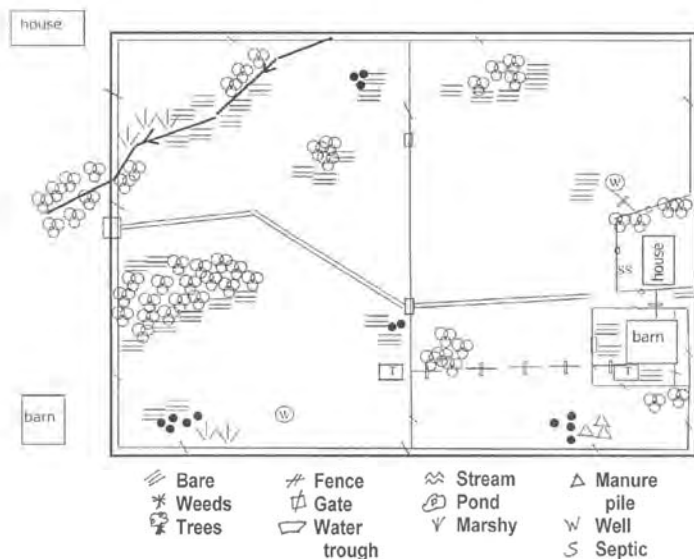
## Protect Your Investment

As a landowner you want to do the right thing for your property. With the right information you can develop a better understanding of what it means to make informed decisions to conserve and protect the valuable natural assets associated with your property.

### Identify What You Have

The first steps to effectively managing your property are to assess what you have available on your property and then set goals for what you would like to achieve. Clearly defined goals will help you develop a plan to achieve your goals without wasting time, money and effort.

Start by developing a property map – a visual representation of your property that lays out dimensions and locations of various features. This image of your property will help you visualize the natural assets and state of the property, and where things are located in relation to each other. A property map should also include features on neighbouring properties that may affect your acreage such as drainage ditches, points of access, septic tanks, livestock areas and sensitive habitats.



### Did You Know

Stands of healthy, native vegetation can increase property values and create a more attractive landscape. Any ponds, creeks or other water sources on your property are valuable riparian areas. Remember, it is easier and more economical to enhance and protect existing water sources than it is to establish or restore a wetland.

# Setting Goals

## Know What You Want to Do

Property goals help you articulate what you want from your acreage. Once you have set goals for your property, you can figure out what information you already have and what information you need to develop a plan to achieve your goals.

Consider your original reasons for moving to an acreage to help you define what you want from your property and shape the goals you set. It is important to set both short-term and long-term goals. Short-term goals are those you will focus on accomplishing over the next year or two. They may include activities like landscaping a yard, inspecting the well or septic system or fencing around sensitive habitats. These are the steps you take to accomplish your long-term goals. Long-term goals are the goals you have for your property five to ten or more years into the future. They define the overall vision you have for your property.

## Things to Consider

- ▶ How much time can you spend managing and maintaining your property?
- ▶ How much money can you realistically afford to spend?
- ▶ What technical help and information sources do you have access to?
- ▶ Can you accomplish your goals in phases? If so, consider setting annual goals to accomplish your objectives over several years.
- ▶ Have you budgeted for ongoing yearly maintenance and potential emergencies like a broken septic system?

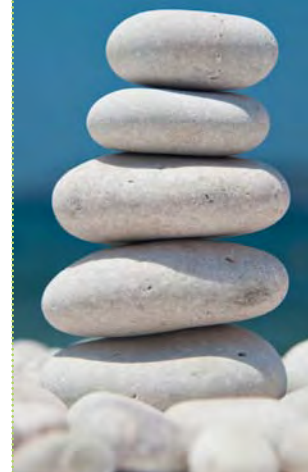


## Who Can Help

- ▶ Federal, provincial or municipal agencies have developed publications on various stewardship topics including:
  - ▶ Beneficial Management Practices
  - ▶ Responsible water well management
  - ▶ Weed control
  - ▶ Woodlot management
- ▶ Agricultural fieldmen working with local municipalities are an invaluable source of local and regulatory information.
- ▶ Private consultants can answer questions and offer expertise in many areas.

## Taking Stock

Photos are an effective way to document your property and any changes you make. Select photo sites from which to take pictures and date the pictures to create a record of your progress.



## Things to Consider

- If stewardship groups exist in your community, consider joining one of them. Existing groups may include watershed stewardship groups, local river or creek stewardship groups, native plant groups, or endangered species protection groups.
- If you want to protect or restore habitat, try to work with your neighbours. Working together, you can create larger habitat areas, which are more useful to both plants and animals.
- Other stewardship groups can be a good source of information on how to get started, where to find helpful information, and who can help answer questions you might have.



## Community Stewardship

People often have the passion to take action on an issue of concern to them but are unsure how to get started. One way to achieve this is to take personal action and make stewardship a priority by becoming a steward of your own property.

Another option is to join an existing or form a new community stewardship group, and put individual action to work for the community. Communities are often better positioned to say what their collective needs and priorities are relative to a given issue, and in many ways, community stewardship groups can be more adaptive and innovative than large organizations in achieving stewardship outcomes.

Alberta's community-based stewardship groups have embraced that responsibility and are actively developing and implementing local initiatives and projects that are helping to conserve and protect our natural resources.



### Did You Know

The Alberta Stewardship Network Program was created and exists to serve and support the needs of grassroots stewardship groups by identifying funding opportunities, supporting the development of volunteer recruitment and training opportunities, and providing access to relevant, current and useful stewardship resources.



# Water

Whether it is in the form of a lake, river or the groundwater beneath us, water is one of the earth's most precious resources and an essential element that sustains all living things. Without water, land becomes uninhabitable.





## Water

Water resources are some of the most important features of an acreage property. Water is required for all living things, and adequate quality and quantity are crucial to support intended uses on the landscape, whether for human or animal consumption, irrigation or wildlife habitat.

Surface water exists as open bodies of water on the surface of the land. Surface water provides a source of drinking water not only for animals but also for many communities that draw their water directly from nearby rivers. Surface waters provide important habitat for many species of fish, birds, mammals, reptiles and amphibians.

Groundwater begins as rain and snow that soaks into the ground. It exists in the small spaces between particles of soil, sand, gravel and rock.

### What You Can Do

- ▶ Manage water runoff on your property to effectively control contamination and other water quality problems.
- ▶ Properly decommission any abandoned or unused water wells on your property.
- ▶ Do not apply fertilizers or pesticides near wells, dugouts or other surface water.
- ▶ Ensure new wells are designed, drilled and constructed by a licensed well driller.





## Water Quality

Water contamination occurs when substances added to water alter the quality of the water in a way that affects either the organisms living in the water, or the suitability of the water for uses such as recreation, watering livestock, and drinking.

Organic pollution includes runoff from barnyards, malfunctioning septic systems, and dead plants and animals. Inorganic pollutants include minerals and salts dissolved in water, and silt suspended in water from sources like runoff from yards and fields, sand and salt used on roads in the winter, erosion from fields and banks and industrial wastes.

Phosphorus from fertilizers is especially harmful. Rain and lawn watering can wash excess phosphorus into water bodies, which can lead to algae blooms. These blooms are unattractive, can kill large numbers of fish and some can be poisonous.



### Did You Know

Under the *Water Act* in Alberta, the provincial government owns all water in the province. You need an approval from Alberta Environment and Sustainable Resource Development before you undertake any activity within a water body. This includes any activity that alters the flow of water or affects the aquatic environment, such as the construction of dams, crossings, culverts, dugouts or berms. You also need an approval to drain a water body.





Photo Credit: Kristin Kuss

## Lake Properties

Many of the factors that you need to consider as an acreage owner also apply as the owner of a recreational lake property. A healthy waterfront is crucial to a healthy lake. As the owner of a lake property, you have a responsibility to help maintain the health of the lake. Once you understand how a lake functions, you can better understand the role you play to maintain a healthy lake.

Alberta's lakes are naturally rich in nitrogen and phosphorus and support many plant species. Cattails, reeds and sedges provide protection for spawning fish and amphibians, as well as nesting habitat for many species of water birds. Shoreline vegetation protects the shore from erosion by slowing waves as they wash onshore.

Aquatic plants, such as pondweed, duckweed and algae, are part of the natural ecosystem of the lake, but excessive algae growth, called an algal bloom, can occur during summer months. The major cause of algae blooms is excess phosphorus leaching from fertilizer applied to lawns or fields around the lake or leaking septic systems. Some species of algae can be poisonous to pets and livestock. When large masses of algae die, the decomposition process uses up oxygen in the water and results in fish kills. The best way to prevent algal blooms is to limit how much fertilizer you use on your lawn, maintain a buffer of natural vegetation between your property and the lake and ensure your septic system is in good condition.



If your lakeshore does not have a natural sand beach, it is not a good idea to create one. As waves wash sand into the lake, it destroys fish spawning habitat and increases the rate of shore bank erosion. If there are any contaminants in the sand, they will enter the lake. Weed seeds or invasive species can also be transported in sand.

Landowners with property that extends to the bank or shore of a body of water have the right to access that water body but not to restrict access by others. In practice, a permit is not usually required to construct a seasonal pier, which is removed at the end of open water season, as long as it does not interfere with the ability of others to access the water. However, there may be exceptions if sensitive habitats have been identified or if the municipality restricts such developments. Permanent structures require a permit.

## What You Can Do

- Maintain a buffer of natural vegetation between your lawn and the lake to help reduce wind and water erosion, keeping sediment, nutrients and contaminants from washing into the water.
- Keep in mind that construction along the shore of a lake can increase the risk of erosion and result in destruction of wildlife habitat and deterioration of water quality.

Photo Credit: Crystal Korth



## Did You Know

Under Alberta's *Public Lands Act*, the province owns the bed and shores of all permanent, naturally occurring water bodies on public and private land. Landowners need a permit before altering or modifying the shore or lake bed below the bank in any way.

If you undertake any activity that alters or harms fish habitat, you require an approval under the federal *Fisheries Act*. If you undertake activities that may disturb migratory birds or their nests, you need a permit under the federal *Migratory Birds Convention Act*.





## Did You Know

- ▶ Fish rely on calm shallow water with aquatic plants like cattails, sedges and reeds to spawn and shelter their young.
- ▶ Overhanging tree branches shade streams and rivers, keeping the water cooler during hot, sunny days.
- ▶ Root systems of perennial grasses and deeper rooted shrubs hold soil, keeping it from being washed into the water.
- ▶ Excess soil and sediment in the water can destroy fish spawning grounds and nutrients in the soil can result in algal blooms.



## Who Can Help

The Alberta Riparian Habitat Management Society, also known as Cows and Fish, helps landowners understand how improvements in riparian management can enhance landscape health and productivity.

## Signs of Trouble

- ▶ Bare ground can be a result of soil compaction caused by human and animal activity. Wet soil, like the soil around bodies of water, is especially prone to compaction.
- ▶ Invasive weeds can outcompete native species. Weeds usually do not have root systems able to hold the soil together as well as native riparian plants, leading to erosion.
- ▶ Eroded banks and slope instability can be caused by human and animal activity, vegetation removal and erosion from wind and water. Problems with eroded banks and slope instability can be very expensive to fix.

# Riparian Areas

Riparian areas are the strip of land next to streams, rivers, lakes and wetlands. The variety of soil types, moisture and temperature found in riparian areas creates the ideal environment for different types of plants and animals to exist together in a small area, making riparian areas extremely productive.

Healthy riparian areas perform many crucial functions on the landscape:

- ▶ Riparian areas act as “sponges” that absorb and slowly release water. This maintains the surface flow in rivers and streams and keeps them from drying out, especially important during droughts.
- ▶ Trees, shrubs, dense deep-rooted grasses and sedges hold the soil together with their roots, which helps to stabilize slopes and banks and reduce erosion.
- ▶ Riparian areas maintain and enhance water quality, mainly by trapping sediment and nutrients. Riparian vegetation slows the flow of contaminated water and allows more time for it to be absorbed into the soil.
- ▶ Riparian areas provide habitat for fish and other species that live in the water, as well as nesting sites, shelter or drinking water for many species of birds, insects and mammals. The shore and shallow water provide another habitat for plants like cattails, rushes and reeds, and shore nesting birds.
- ▶ Riparian areas connect other habitat types and provide important corridors that allow wildlife movement and dispersal.





# Biodiversity

Biodiversity, or biological diversity, refers to the variability among living organisms. Biodiversity shapes the ecosystems that support living resources, including wildlife, fisheries and forests.





## Trees and Woodlots

A woodlot is any area with trees, either planted or natural. It can be any size, ranging from a stand with a few trees to a large natural stand that covers several acres. Although many acreages have woodlots, owners may not always consider the specific management requirements of these areas. Woodlots provide many ecological benefits such as erosion protection, habitat for plants and animals and air quality improvement. In addition, a properly managed woodlot can provide economic benefits. Timber harvesting is the main economic benefit, but the value of non-timber resources, such as maple syrup, mushroom cultivation and nuts, can also be important. A well-managed, healthy woodlot will add to your property value.

A healthy woodlot has many different species and a diverse age composition. Young trees and saplings indicate that trees are healthy enough to regenerate, while older, bigger trees provide shelter and food. Standing or fallen dead trees are also important habitat for some birds and animals and, as they decay and break down, they recycle their nutrients back into the soil for new growth.



### Did You Know

Shelterbelts and windbreaks are rows of trees and shrubs that provide shelter from wind for buildings and fields. Although the terms can be used interchangeably, shelterbelts generally protect homes and other buildings, while windbreaks protect fields. Shelterbelts and windbreaks block and slow wind, which keeps heated buildings warmer, helps reduce erosion, and trap snow, which increases soil moisture. They provide good habitat and travel corridors for wildlife, and shade and protection for livestock.



If you do not have trees or a woodlot on your acreage, you can use regeneration to establish one or improve an unhealthy woodlot. Natural regeneration uses existing seeds and root sprouts, while artificial regeneration uses direct seeding and tree planting.

- ▶ Natural regeneration occurs when there are enough trees to provide a source of seeds or root sprouts to develop young trees. This is a low cost method that ensures the trees are adapted to local conditions. Aspen and balsam poplar are good candidates for natural regeneration because they produce seed every year and will produce root sprouts in full sunlight conditions.
- ▶ Artificial regeneration is a good choice if natural regeneration is not successful or if there are specific tree species that you would like to grow. Direct seeding is best suited to large cleared areas and conifer tree species, which produce many seeds that are well suited to regeneration on cleared sites. If there are no natural seed sources, like standing trees, available in your woodlot, choose seeds from local sources because they will be suited to your local conditions. Tree planting works best in smaller areas where you need to replace individual trees or small groups of trees because of the time and labour needed to plant seedlings.



Photo Credit: Doug Friebe

## ➔ Who Can Help

Woodlot extension specialists, forestry consultants or local forest industry firms interested in working with private landowners can tell you about the most common tree and shrub species in your area, pests or diseases you need to know about, local markets and harvest options.



## ? Did You Know

As a landowner, you are responsible for managing and controlling weeds on your property. The *Weed Control Act 2010* is enforced by municipalities which appoint weed inspectors to check properties for evidence of weed infestations. If a prohibited noxious weed is found on your property, the weed inspector can issue a weed notice stating the plant must be destroyed.



## ➔ Who Can Help

The Alberta Invasive Plants Council provides information on weeds, including publications with pictures, descriptions and control options.

Agricultural fieldmen can provide information on local weed problems or special weed concerns in your area. Your local Agricultural Service Board office is also a good source of information on control and prevention of weed infestations. They will also have information about who is responsible for controlling weeds along municipal roadsides.

Weed identification guidebooks are a good source of information. Any guide you use should be specific to Alberta. Most guidebooks will include an index at the beginning that lists plants by flower colour. Once you have a match, or a few possible matches, you can compare other traits like leaf shape and size, stem type and plant height.

## Weeds

Many weeds and invasive plants in Canada were originally introduced as crops or ornamental garden plants. On acreage properties, weeds can reduce the productivity of land, increase the risk of erosion by outcompeting deeper rooted species and some poisonous plants can harm livestock or pets.

In Alberta, the *Weed Control Act 2010* designates 46 plants as prohibited noxious weeds and 29 plants as noxious weeds.

Prohibited noxious weeds are not yet widely established in Alberta but have been identified as weeds in other jurisdictions and may be found invading some sites. These plants can spread very quickly and are highly competitive. You are required to destroy all parts of prohibited noxious weeds, including their seeds, to prevent their establishment.

Noxious weeds are found throughout Alberta and are not likely to be eradicated. However, you must use reasonable means to prevent their spread as much as possible.

Some weeds are easily recognizable while others are more difficult to identify and can be confused with native plants. For example, purple loosestrife, a prohibited noxious weed, can be confused with fireweed, a native plant that is not a weed. Even if a plant is not listed as a noxious or prohibited noxious weed, it may not be the best choice to use in acreage landscaping. For example, caragana has been used for a long time in shelterbelts and along driveways, but it is an extremely aggressive species and can choke out native species or spread to areas where it is not wanted.

# Weed Control

In general, weeds take advantage of disturbed sites and spread quickly. The best way to control weeds on your property is not to let them get established. Weeds will invade most readily on disturbed or bare ground but there are simple precautions you can take to minimize disturbance.

- ▶ Weed seeds can be transported on vehicles and machinery, so pressure wash them before they are brought onto your property.
- ▶ After construction or after disturbing large areas, plant grass, trees or other vegetation, and implement weed control practices like pulling weeds, mowing and using herbicides.
- ▶ If left unmanaged, roadsides can be a source of weeds onto your property. Mowing, pulling and appropriate herbicide use are the best options to control weeds along roadsides.
- ▶ An overgrazed field or pasture is more susceptible to weed invasion so limit the number of animals on a field.
- ▶ If possible, buy certified weed free hay that comes from fields inspected for noxious weeds.

You have many options available to control weeds including cultural, biological and chemical weed control. What works to control one weed may not work for another, so choose the control method that works best in a particular situation.

- ▶ Cultural weed control emphasizes land preparation and variety selection to control conditions that favour weeds. Use only good quality, inspected seeds and plants that do not contain weeds. Transplanted seedlings are more competitive with weeds than plants grown from seeds, but a high seeding rate can help suppress weeds, especially on lawns. Healthy vegetation will resist weed invasions so give your plants enough sunlight, space and water, and pull or mow weeds before they have a chance to flower and produce seeds.
- ▶ Biological weed control uses other plant or animal species that naturally limit the growth and spread of weeds. Biological control is usually done by trained specialists hired by municipalities. If you are interested in biological controls, contact your agricultural fieldman for more information.
- ▶ Chemical weed control alone may not be the best option for acreage properties. Herbicides are most effective if combined with other methods to control weeds before they become established. Contact your agricultural fieldman for more information about using herbicides.



## Did You Know

The best defence against weeds is a healthy, diverse plant community. Plan for how you will introduce desirable plants once the weeds are gone. Otherwise, the weeds will reinvade the area and you will have to deal with the problem all over again.



## Did You Know

Biodiversity refers to biological diversity or the variety of living organisms that make up an ecosystem. A diverse system is more stable and better able to cope with changing conditions. A stable ecosystem is less likely to degrade as a result of drought, pest damage or human activity.



Photo Credit: Lindsay Gelpin

## Wildlife Habitat

Wildlife is an integral part of a natural ecosystem and, if you understand how to coexist, you can safely enjoy your property. The type of wildlife you are likely to see depends on your location in the province and the extent of development around you.

In Alberta, the *Species at Risk Act* identifies species that are threatened or at risk, and provides regulatory protection for endangered species and their habitats. Habitat loss is one of the main threats to wildlife populations. Without adequate healthy habitat, wildlife species become more vulnerable to disturbances like disease and predators. Habitat protection also protects the other plants and animals that an endangered species relies on to survive.

You can help maintain and improve wildlife habitat on your property. If you have wooded areas on your property, create travel corridors between them to increase their usability for wildlife. Isolated habitats have less value than areas that are connected to other habitats or water sources. Another option to encourage wildlife is to provide nesting habitat for birds. Each species has unique requirements, but generally a source of water and a relatively undisturbed site are needed.

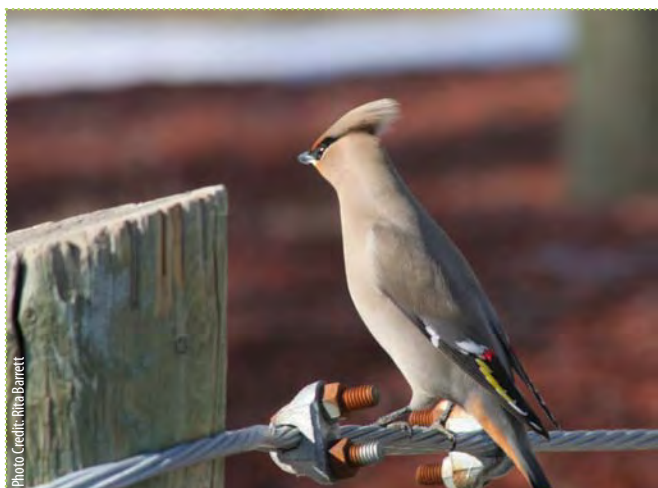




## What You Can Do

### To attract songbirds:

- ▶ Plant evergreen tree species like spruce and juniper for year round shelter.
- ▶ To attract waxwings, grosbeaks and jays include berry producing shrubs like dogwood, cranberry and saskatoon, fruit trees like apple, cherry and mountain ash and nut trees like beaked hazelnut and bur oak.
- ▶ To attract woodpeckers, nuthatches and flickers, leave standing dead trees, stumps and logs in the landscape if safe to do so.
- ▶ Meadow plants and tall grasses provide nesting sites and seeds for pheasants and sparrows.
- ▶ Keep cats indoors or provide protection for birds. Place bird baths on pedestals and plant thorny shrubs, like hawthorn or raspberry, around feeders.



### To attract pollinators like bees, hummingbirds and butterflies:

- ▶ Cavity nesting bees will nest in dead logs with holes drilled in them.
- ▶ A variety of colours, flower shapes and blooming times will attract pollinators. Native plants that attract hummingbirds include fireweed, harebell, giant hyssop, meadow blazingstar and wild bergamot.
- ▶ Flowering trees and shrubs provide pollen in early spring before other flowers bloom. Apple, blueberry, dogwood, cherry and willow are good choices.
- ▶ Fall blooming flowers like aster and goldenrod provide pollen for bees that are active later in the fall.



## Who Can Help

There are many wildlife guides available if you want to learn more about Alberta's wildlife. Naturalist clubs also offer seminars and field trips for people interested in bird watching and wildlife observation. Your municipal agricultural fieldman can offer suggestions for prevention and control of nuisance wildlife such as pocket gophers, Richardson ground squirrels and coyotes.



Photo Credit: David Fairless

## Living With Wildlife

You are much more likely to encounter wildlife on your acreage than in a more developed area. This can be an enjoyable and exciting experience, but it can also cause problems with pests or problem wildlife.

People and wildlife usually do not bother each other, but there are precautions you can take to avoid potential problems. The safest way to observe wildlife is from a distance. Never approach a wild animal, especially if it has its young with it. If an animal feels threatened, it may act to protect itself and its young.

Prevention is the best option to deal with problem wildlife. Limit habitats and conditions that encourage problem wildlife. To control rodents like mice and rabbits, mow tall grass or weeds. Without this cover, they are vulnerable to natural predators that will control their populations.

To discourage scavengers like coyotes and crows, do not leave pet food and other food sources where nuisance animals can access it. To protect field crops from geese, you can set up bait stations with feed to draw them away. You can also set up sacrifice plots; crops that are planted specifically to draw wildlife away from valuable crops.

Natural repellents include unpalatable plant species planted around and within more desirable crops to discourage grazing by deer, elk and moose. Chemical repellents that have an unpleasant odour or taste prevent damage from wild animals. Fences are an option to exclude larger animals, like deer and elk, from areas where they can cause damage. Wire or mesh screen wrapped around the trunk of individual trees can prevent deer, beaver and rodent damage.

Trapping and removal may be necessary for animals like bears or cougars that can be dangerous to people. Contact professional wildlife control officers if you see these animals around your acreage. Removing nuisance animals like deer or beavers is usually not an effective long-term solution because, as long as the conditions exist to encourage the wildlife, more will come.

# Livestock

Animal ownership can be enjoyable, but it is also a major responsibility. If you do not understand the responsibilities, costs and time required to maintain animals, it can lead to problems for both your property and your livestock. Before you decide to purchase livestock, make sure that your property is zoned to allow the type of animal you want to own. If it is, check for any limitations on the number of animals you are allowed to keep.

## Livestock Needs

Most livestock need some form of winter shelter, such as a stable or barn. Individual stalls may be needed for horses, and larger stalls needed for pregnant or nursing animals. Consider what is needed for access, feed, maintenance and cleaning of animals. You may need to tend to sick or injured livestock in bad weather or at night, so locate your facilities accordingly.

Good quality fresh forage provides all the nutrition livestock need. In addition, livestock need a reliable source of clean water like a creek, stream, dugout or well. To minimize the risk of water contamination, you can construct access ramps to let livestock access dugouts or creeks. A low-sloped, narrow point in the stream is ideal for a stream crossing and gravel provides a hard, stable surface for livestock or equipment to cross without blocking the flow of water. You can also install pipelines and solar, wind or gravity pumps to provide water away from the water body.

## Questions to Ask

- How much forage does your property produce? The more forage available from your property, the less feed you will have to buy.
- How long do you store feed? Feed that has been stored for a long time or has been exposed to the elements may lose some nutritional value.
- Are there fences around livestock fields and pastures? Fences keep livestock on your property and can keep potentially dangerous wildlife out.
- Have you accounted for care specific to horses? Horses need regular care by a farrier for hoof care and horseshoes. You should also plan for regular hoof trimming and periodic shoe resetting.
- Do you know what types of vaccines and veterinary care are needed for your animals? Veterinary care includes annual vaccinations for rabies, West Nile and tetanus and additional vaccinations for pregnant animals.



Photo Credit: Christine Sweet



## What You Can Do

- Know how many pets you are allowed to have on your rural property.
- Ensure you license your dog and cat if required by local bylaws.
- Small dogs and cats may also need to be protected from predators like coyotes or large birds of prey.
- Country pets can potentially be exposed to skunks, raccoons and other wildlife, which can carry rabies and other diseases, so keep your pets' vaccinations up to date.
- Contact your municipal office if you require more information about animal by-laws or animal control services.



## Pets

The open and natural spaces associated with an acreage, hobby farm or recreational property can be an excellent place for pets such as dogs and cats. Pet ownership is a responsibility in itself, but when you live on an acreage, pet ownership comes with its own unique set of challenges and responsibilities.

To protect residents and pets, and to ensure all members of a community can enjoy the rural lifestyle, municipalities establish by-laws which outline pet owners' responsibilities, and which identify the number of dogs, cats or other animals that are permitted on residential or agricultural property. Many municipalities also require dogs, and in some cases cats, to be licensed.

As a pet owner, it is your responsibility to keep your pets on your property. When you are off your property, your pet must be under your control at all times. If left uncontrolled, pets can disturb neighbouring livestock or create a nuisance. Be aware that stray or nuisance animals may be impounded by bylaw enforcement officers if they trespass on neighbouring properties and, as a result, you may be fined for pet related offences.





# Land

Land is fundamental to life as we know it. It provides the foundation for our homes, supports the production of food and forage, is our sole source of non-renewable natural resources, sustains wildlife and biodiversity, and offers diverse scenic and rustic environments for our personal enjoyment.



## Manage Your Landscape

The landscape choices you make on your property will determine the time and effort required to maintain it. Certain landscape choices can affect how susceptible your property is to weed infestations, erosion and other problems.

Match your landscape choices to specific conditions on your property. This will save you time, money and effort to maintain your plants. Plant areas of your yard that are low-lying and wet with species that need moist conditions to grow. Plant areas that are sunny, hot and dry with species that thrive in these conditions so that you do not need to use extensive irrigation. This will mean less work for you to maintain the landscape and more time to enjoy your property.



## What You Can Do

- ▶ Use mulch to minimize water loss from evaporation.
- ▶ Use native plant species. They do not need to be fertilized or watered as often as non-native species and using native plants reduces the chance of accidentally introducing weeds.
- ▶ Use groundcovers or native turf grasses instead of extensive lawns. Many groundcovers need very little care and do not need to be mowed.
- ▶ Try to limit turf lawns to areas where it serves a purpose, such as a play area for children.
- ▶ Use drip irrigation hoses, which deliver water directly to the surface of the soil, rather than spraying it into the air where it can be lost to wind and evaporation.
- ▶ Fertilize flower beds, trees and shrubs in early summer after buds begin to open. Fertilizer application late in the season can force new growth that will not have time to mature before winter.
- ▶ Fertilize lawns no more than twice a year, once in the fall and once in early to mid-summer. More frequent applications encourage excessive growth and make it more likely that unused fertilizer will be washed through the soil and potentially contaminate drinking water.





## Soil



The type of soil you have affects almost every aspect of your property management, including how well your soil holds water, what types of plants will grow best and the nutrient richness of your soil.

A soil survey can provide you with information on your soil type and help determine management options that will work best for your property. A soil test provides information about your specific soil characteristics and its nutrient requirements. You can use this information to determine the correct amount of fertilizer to apply and how appropriate a given site is for a particular purpose. For example, if a soil test tells you there is heavy clay soil in a given area, you may decide to use it for a building site rather than a pasture or garden. Test your soil before you start any landscaping project, such as planting a woodlot or pasture.

While a soil test will provide you with specific information on soil properties, you can also assess the quality without a full soil test. The presence of earthworms is a good gauge of overall soil health. A soil with many earthworms is high in organic matter, the main food source for earthworms. Worm tunnelling helps aerate the soil and provides channels for plant root growth. A soil with high organic matter content also holds and releases nutrients and water very well, which supports plant growth.

### Signs of Trouble

Bare ground can indicate a soil problem caused by:

- ▶ Excessive soil acidity or alkalinity, either from a natural cause, such as mineral seeps, or caused by contamination such as motor oil spills, pesticide or herbicide spills and solvent contamination. Contaminated soil may have to be removed or remediated before it will support plants.
- ▶ Sandy soils, which drain quickly, or clay soils, which hold water. Both conditions make it difficult for plants to grow.
- ▶ Excessive activity, which can compact soil. A compacted soil does not allow water to infiltrate and makes it difficult for plant roots to penetrate and grow.





# Grazing Management

A good grazing system avoids grazing when plants are vulnerable, like early spring when new growth is starting, and leaves enough plant cover to protect soil from erosion. It incorporates periods of rest for grazed areas to recover and allows plants to regrow.

If you have a pasture on your property in poor condition, it is usually less expensive to improve, or renovate, it than to establish a new pasture. Because many pasture quality problems are caused by poor grazing management and overgrazing, matching the intensity of grazing to the forage available and then resting the pasture after grazing gives plants a chance to recover.

If you choose to establish a new pasture, either because what you have is in very poor condition or renovation has not been successful, keep in mind that it will usually cost more, will be more disruptive and will require that you keep animals off it for up to a year or more.



## What You Can Do

- ▶ Don't overgraze pastures. Pasture grass less than 8 to 10 cm tall (3 to 4 inches) is a good sign that the field is overgrazed. Bare ground has no protection against erosion by wind or water. This stresses plant roots and allows weeds to invade.
- ▶ Fence the grazing area into separate fields or manipulate the placement of water and mineral supplies. This distributes animals more evenly in and between pastures.
- ▶ Graze grasses after their peak growth time to avoid damage.
- ▶ Incorporate a rest period to let plants replenish their stored energy.
- ▶ Make sure plants toxic to livestock are not present in your pasture.

## Who Can Help

- You can get specific information on livestock requirements from breeders or veterinarians.
- Agricultural fieldmen or other qualified professionals can provide information and help you develop a pasture establishment and management plan.



## Pasture Management

Pasture management balances the need to protect soil, vegetation and water with livestock grazing needs. Healthy pasture requires less work to maintain and is a sustainable resource.

Forage plants are the plants livestock feed on and include grasses, forbs and some shrubs. You can seed a pasture with native species or tame species that are bred for nutritional quality, fast growth and resistance to damage from grazing. The plants you choose as forage will depend on the state of the pasture when you start, what type of livestock you have and your goals. Native species are generally better adapted to local growing conditions and many native grass species are well suited to grazing. If you choose tame species, keep in mind that some are invasive.

The benefit of this approach is that you will have the opportunity to choose the plant mix that best meets the feed requirements of your livestock and the growing conditions in your area. You can plant a mix of species that mature at different times to provide season-long grazing.

## Did You Know

Carrying capacity is used to describe the number of animals an area can sustain. You can find the carrying capacity of specific plant communities in plant community guides or you can consult with a professional who can assess your property to determine the carrying capacity. Sites that are dry, have sensitive habitats or soils prone to erosion reduce the carrying capacity, as do areas that are inaccessible to livestock, such as steep slopes, water bodies and areas with dense understory.



# Air

Clean air is something all living things need. It is vital to healthy lives and a healthy environment.





## Air Quality

When you think of the many ways that your activities affect the landscape on and around your property, effects on air quality may not immediately come to mind. However, there are many ways in which your everyday activities impact the air quality both in your community and inside your home. The quality of air inside your home can have health implications for you and your family. If you are aware of these impacts, you can take steps to improve air quality.

Many substances contribute to reduced air quality. Emissions of carbon monoxide, ozone, nitrogen oxides, sulfur dioxide and fine particulate matter are some of the most common substances that can negatively impact human health and ecosystems.

Odours and emissions from acreages are seen as a minor contributor in comparison to larger farms. However, some activities on acreages can include agriculturally-related operations, such as the application of fertilizers, pesticides or manure. Emissions can be reduced or managed by applying beneficial management practices (BMPs), management practices that reduce or eliminate the environmental risk associated with specific activities.

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### ? Did You Know

Most of the air quality management regulations in Alberta are targeted at industries, rather than individuals, simply because industries generally have greater emissions. But it is important to remember everyone's actions affect air quality. On the local or neighbourhood scale, your actions can directly impact the quality of the air you breathe.

Choices you make in and around your home can have a large impact on your emissions to the air. To reduce your emissions restrict your use of wood burning appliances and replace older residential wood burning appliances with newer, more efficient technology.

Transportation-related emissions also impact air quality. You can reduce your vehicle emissions by:

- ▶ Turning off your engine, even for short periods, to reduce idling time.
- ▶ Inflating your tires to the recommended pressure.
- ▶ Avoiding rapid acceleration and braking.
- ▶ Choosing to drive 100 km/hour, rather than over this limit, while highway driving.
- ▶ Monitoring your use of small engines and off-road vehicles.

## Who Can Help

- Health Canada provides information on indoor air quality concerns and guidelines.
- The Alberta Air Quality Health Index is a tool designed to help you understand what air quality means to your health.
- Clean Air Strategic Alliance Data Warehouse contains archived air quality data from monitoring stations operated by Alberta Environment and Sustainable Resource Development, airshed groups and Environment Canada.

Photo Credit: Deb Webster



## Further Resources

Agriculture and Agri-Food Canada

<http://www.agr.gc.ca/>

Agroforestry and Woodlot Extension Society of Alberta

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/apa3312](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa3312)

Alberta Agriculture and Rural Development

<http://www.agric.gov.ab.ca/app21/>

Alberta Environment and Sustainable Resource Development

<http://environment.alberta.ca/index.html>

Alberta Invasive Plants Council

<http://www.invasiveplants.ab.ca/>

Alberta Lake Management Society

<http://www.alms.ca/>

Alberta Recycling

<http://www.albertarecycling.ca/>

Alberta Riparian Habitat Management Society  
(Cows and Fish)

<http://www.cowsandfish.org/>

Alberta Stewardship Network Program

<http://www.landstewardship.org/ASN/>

Alberta Water Well Drilling Association

<http://www.awwda.com/>

Association of Alberta Agricultural Fieldmen

<http://www.aaaf.ab.ca/>

Clean Air Strategic Alliance

<http://www.casahome.org/>

Government of Alberta Municipal Affairs:

Municipalities and Municipal Officials

[http://www.municipalaffairs.alberta.ca/mc\\_how\\_do\\_i\\_municipalities.cfm](http://www.municipalaffairs.alberta.ca/mc_how_do_i_municipalities.cfm)

Green Acreages Guide Workbook

<http://www.landstewardship.org/green-acreages-guide/>

Land Stewardship Centre

<http://www.landstewardship.org/>

Stewardship Directory

<http://stewardshipdirectory.com/>

Working Well: Water Well Management for Well Owners

<http://environment.alberta.ca/01317.html>



Photo credit: Ronda Hermann



## Looking for More?

**This Primer is just the beginning;** an introduction to the basics of owning and managing your rural property. When you are ready to roll up your sleeves and really dig into stewarding your acreage or rural recreational property, then you'll need the **Green Acreages Guide Workbook**, which will help you take stewardship to the next level.

The self-directed Workbook is organized into chapters. Each chapter begins with an overview of an issue and background information, includes relevant legislation, provides examples of beneficial management practices and offers sources of additional information. What's more, each chapter includes worksheets that give you the opportunity to identify and evaluate your property and natural assets, and then choose the best and most applicable management options for your situation.

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The Green Acreages Guide Workbook is available from Land Stewardship Centre for \$29.95 plus GST.

Visit [www.landstewardship.org](http://www.landstewardship.org) for more information and to order your copy today.



