

►► Energy and Mining

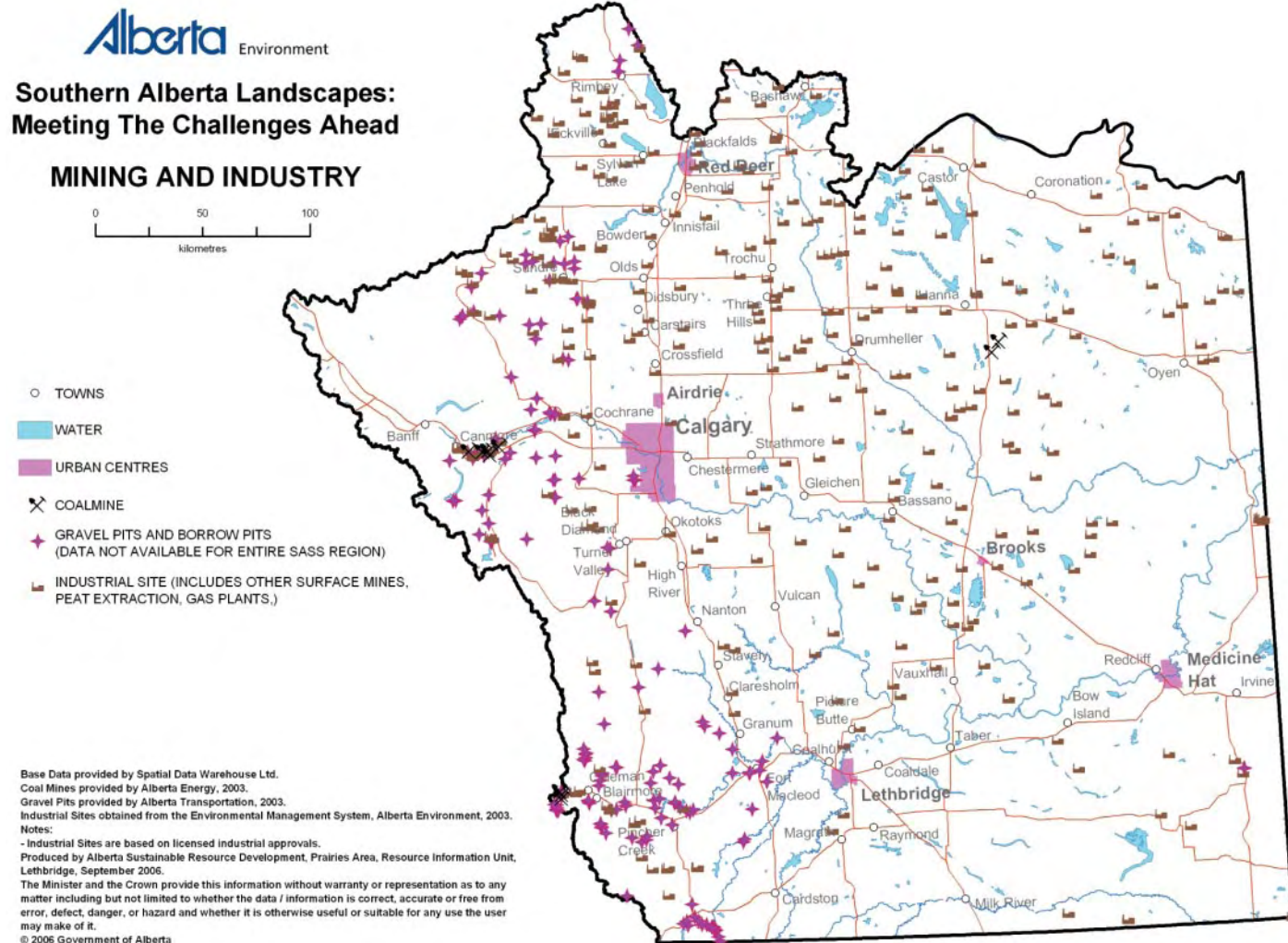


Figure 50. Mining and Industry in the SAL Region

►► Forestry



Approximately 16% of the SAL region is classified as forest, including the closed forests of the foothills and mountains, in depressions, on steep, north-facing slopes, and along stream courses in the plains portion of the study area and in the Cypress Hills.

HISTORY

Management of the forests in southern Alberta evolved during the 20th century. Key events include:

- In 1930 the ‘Transfer of Resources Act’ established the Forests Division within the Department of Lands and Mines.
- In 1948 the Eastern Rockies Forest Conservation Board was established, ensuring watershed protection in the Crowsnest, Bow River and Clearwater Forests.
- The “Green Area”, where most of the Eastern Slopes lies, was also established in 1948, giving policy direction for Eastern Slopes management.
- The Alberta Forest Service was established in 1953 to manage the province’s forests.
- In 1955, North Western Pulp and Power Ltd. started Alberta’s first pulp mill in Hinton.
- The quota tenure system was established in Alberta in 1966, via the Forests Act. A quota allocation is a legislated commitment of a percentage of the Annual Allowable Cut within a particular Forest Management Unit.
- During the late 1980s, through the 1990s and into 2001, a number of Forest Management Agreements were established throughout the province. Within Alberta, there are currently 20 Forest Management Agreements.
- From the 1970s through the 1990s, the Eastern Slopes Policy and Integrated Resource Planning were implemented. Allocation of forested land through a zoning system recognized activities sharing the same land base. This resulted in the separation, or exclusion, of land uses in areas of highest conflict (e.g., Prime Protection), and recognized that sometimes single or no use is appropriate.

CURRENT STATUS

The total volume of timber harvested from public land in Alberta increased from four million m³ in 1970 to 20.3 million m³ in 1995.¹ This does not include the additional harvest from private lands, which totalled more than three million m³ in 1995. The total area harvested increased from 176 km² in 1970 to an estimated 560 km² in 1996, approximately 0.25% of the productive forested land base. The increase in harvest in recent years is due largely to the harvest of hardwoods, such as aspen, to manufacture wood pulp, paper and strandboard products. Despite the increase, the level of harvest from public owned lands remains below the current provincial Annual Allowable Cut of 22.1 million m³.²

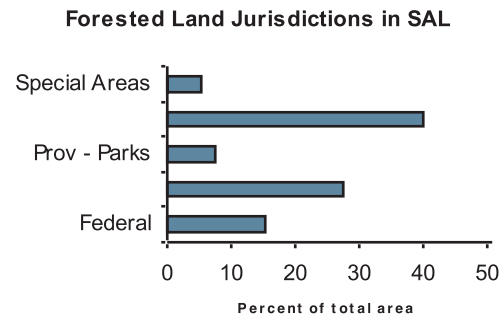


Figure 51. Forested Land Jurisdictions

A relatively small proportion (16%) of the SAL landscape is forested, and of that, only 48% is actively managed for timber. The provincial government, through Public Lands, Provincial Parks and Special Areas, manages most of this land production (see Figure 51). This includes management of the majority of the pine and spruce-fir forests. The federal government manages the largest proportion of white spruce, in Banff National Park.

Freehold landowners manage significant portions of the remaining land base, including the greatest portions of cottonwood/riparian complexes and hardwood forests.

The remainder of the forested area is in parks, prime protection zone 1³, or is withdrawn from the active land base because of proximity to water bodies, steep slopes and other limiting conditions.

¹ Source: Canadian Forest Service 1997a

² Source: Alberta’s State of the Environment Report: Terrestrial Ecosystems

³ Zone 1 is the Prime Protection Zone of the Eastern Slopes. It contains high-elevation forests and steep rocky slopes.

►► Forestry

Within the SAL project boundary there are:

2 Forest Management Agreements,
2 Community Timber Programs, and
4 Coniferous Timber Quotas.

As well, there are two primary forest product manufacturing facilities (sawmills) - Spray Lakes Sawmills Ltd. and its subsidiary, Crowsnest Forest Products Ltd. - and numerous smaller manufacturing facilities, including sawmills, round-wood processing facilities, log home manufacturers, and remanufacture plants.

CURRENT IMPACTS ON THE FOREST LANDSCAPE

Pressures and demands on the forest landscape are expected to grow as populations increase, and with them the demands for recreation and natural resources. Other impacts on the forest landscape include:

- Mountain Pine Beetle – current populations are on the increase in the Bow Corridor area. The last major epidemic was in the Crowsnest area in the early 1980's.
- Diseases – such as dwarf mistletoe, are prevalent in fire-origin lodgepole pine stands within the region.
- Access Management – off-highway vehicle use is steadily increasing and concomitant issues relating to watershed protection, vegetation and soil conservation, wildlife protection and user-conflicts are also increasing.
- Random Camping – garbage disposal, human waste disposal, fire prevention and protection (abandoned camp fires), rowdy behaviour, public safety, watershed protection, wildlife protection, and vegetation damage are among the issues that are less controlled in random camping than in designated camping sites.
- Community Protection – protection of forest communities and adjacent developments from the threat of wildfires. More housing developments are being built within forest environments, where wildland/urban interface fires are a threat.
- Cattle grazing and riparian management.
- Landbase maintenance – including losses and fragmentation due to other developments, such as oil and gas.
- Wildlife habitat maintenance.



GRAZING DISPOSITIONS

Grazing dispositions occur on more than six million acres of public land in Alberta. An additional 8100 km² of land in the Rocky Mountains Forest Reserve is designated for grazing use through allotments. Public land provides over 1.6 million Animal Unit Months (see Glossary) of forage each summer to about 14% of all Alberta's beef cattle. Grazing leases, which account for most of the public land grazing, are long-term authorizations to individuals, corporations or associations. Lease size ranges from an average of less than a section 2.6km² in central Alberta to almost three sections 7.8km² in the southern Alberta grasslands. Grazing allotments are large areas of forested range in the central and southern foothills of the Rocky Mountains. They have minimal fencing, are defined by natural barriers such as rivers and mountain ranges, and cattle only graze a small portion in any given summer.⁴

⁴ Source: Alberta Sustainable Resource Development http://www3.gov.ab.ca/srd/land/APL_Grazing_Stats.html

►► Tourism, Parks and Recreation

Alberta is legendary for its natural wonders, including the Canadian Rockies, pristine rivers, badlands, world-renowned dinosaur digs, abundant wildlife, golden prairies, grassy foothills, rugged wilderness, and a unique aboriginal heritage.

Alberta is Canada's fourth most popular tourist destination and is internationally recognized for its diverse, high quality tourism products, resorts and experiences. Four of Canada's 13 UNESCO World Heritage Sites – the Canadian Rocky Mountain Parks (including Banff National Park) Dinosaur Provincial Park, the Head-Smashed-In Buffalo Jump complex, and Waterton-Glacier International Peace Park - are in the SAL area. Tourism revenues are evenly distributed throughout the province with Edmonton and area, Calgary and area, Canadian Rockies and the remainder of the province each representing about one quarter of the total revenues.¹

This section looks at Parks and Protected Areas in the SAL region, and the tourism and recreation facilities both within and outside those areas.



PARKS AND PROTECTED AREAS

HISTORY AND DEVELOPMENT

Southern Alberta is the birthplace of Canada's system of National Parks. Banff, Alberta was Canada's first national park, established in 1885. Waterton Lakes was designated Canada's fourth national park in 1895.

The earliest provincial parks were established by Order-In-Council in 1932. Although Cypress Hills was not formally established as a provincial park until 1951, Elkwater Lake in the Cypress Hills area was included in the capital budget for parks in 1929.

Early parks in the SAL region were small recreation sites. These provided local residents with nearby scenic spots to swim and picnic. Similar recreation sites were developed by other agencies. Wayside campsites were built along the highways to serve the motoring public. Most of these have been closed and replaced by municipal parks.

Recreation areas were often created in response to environmental concerns. Forest recreation areas were constructed in the mountains and foothills to control litter, localize impacts and minimize the risk of forest fires created by random camping. Campsites and picnic areas built on the irrigation reservoirs provided recreational access to the water and helped control shoreline erosion.

Other sites were preserved for their archaeological significance. Writing-On-Stone was reserved for park purposes in 1935, in recognition of the petroglyphs and pictographs for which it is now famous. Dinosaur Provincial Park, first opened to the public in 1959, was recognized as a World Heritage Site in 1979, the first site under a provincial level of jurisdiction to receive this international designation.

Kananaskis Country, established in 1977, was the first initiative in the province to integrate preservation, outdoor recreation, heritage appreciation and tourism, the four goals of the parks and protected areas program.

¹ Source: Strategic Tourism Marketing Council <http://www.industry.travelalberta.com/strategicplan/overview/index.cfm>

►► Tourism, Parks and Recreation

CURRENT STATUS

Today, the parks and protected places network in southern Alberta includes a spectrum of areas ranging from intensively developed recreation sites to pure wilderness. These areas preserve natural landscapes, ecological processes and associated biological diversity. As well, they provide opportunities for heritage appreciation, outdoor recreation and heritage tourism.



Parks and protected areas account for 7.2% of the land base, or 10,011 km² of the SAL region, compared with 12.4% for Alberta as a whole. Almost seven million visitors come to the 206 parks and protected areas in the SAL region annually. About 80% of visitation to the provincial network is to sites in southern Alberta, and 40% of total provincial park visitation is to Kananaskis Country, with 36% to Fish Creek, Aspen Beach, Sylvan Lake, Jarvis Bay, Cypress Hills, Midland, and Dinosaur Provincial Parks.

Major tourism programs are offered in Cypress Hills Provincial Park, Dinosaur Provincial Park, and Peter Lougheed Provincial Park. There are staffed interpretive programs in Beauvais Lakes Provincial Park, Bow Valley Provincial Park, Chain Lakes Provincial Park, Writing-On-Stone Provincial

Park, and in Kananaskis Country. Similar programs are provided in Banff and Waterton Lakes National Parks. Midland Provincial Park at Drumheller is the site of the Royal Tyrell Museum of Palaeontology, regarded by many as the best dinosaur museum in the world.

Figure 52 shows the parks and protected areas in the SAL region, including the Eastern Slopes Integrated Planning Zone 1: Prime Protection Area, south of the Bow Corridor.

Figure 53 shows the number of sites in each type of park and protected area in the SAL region and the area (in km²) they occupy.

Parks and Protected Areas - SAL

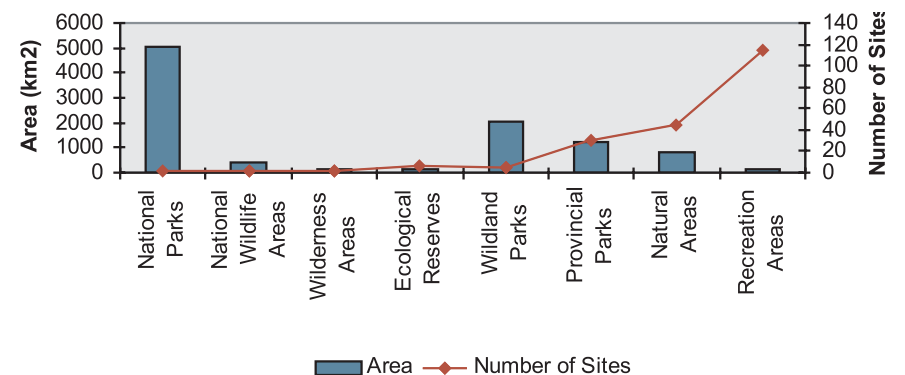


Figure 53. SAL Region Parks and Protected Areas

►► Tourism, Parks and Recreation

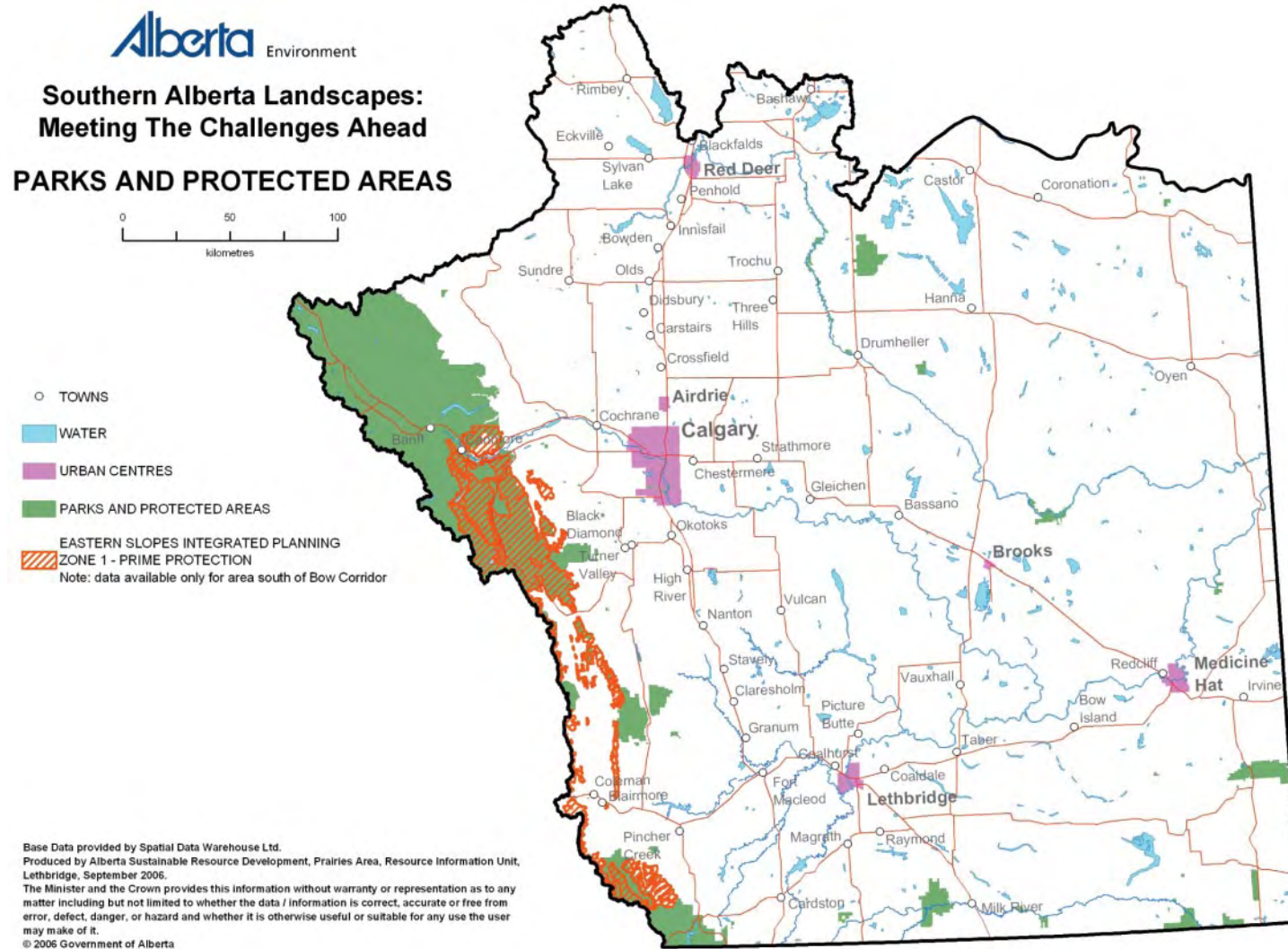


Figure 52. Parks and Protected Areas SAL Region

►► Tourism, Parks and Recreation

TOURISM AND OUTDOOR RECREATION FACILITIES

Figure 54 shows the locations of ski areas, golf courses and campgrounds in the SAL region.

Figure 55 shows the number of campsite nights occupied in each of the Parkland, Prairie and Southern East Slopes geographical areas of the SAL region (excluding the national parks), for the years 1987 through 2000. Not surprisingly, the number of campsite nights is significantly higher in the Southern East Slopes, as this is foothills and mountain country and a popular area for campers. It is interesting to note how stable the numbers have remained during the years since 1987-88.



SAL Occupied Campsite Nights

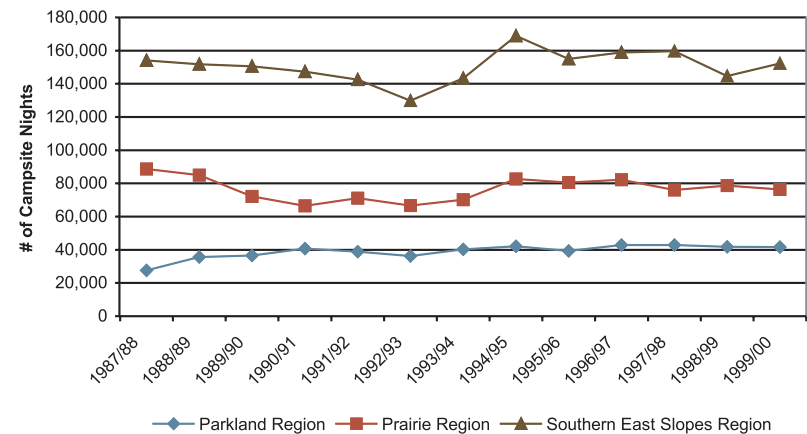


Figure 55. SAL Occupied Provincial Campsite Nights

►► Tourism, Parks and Recreation

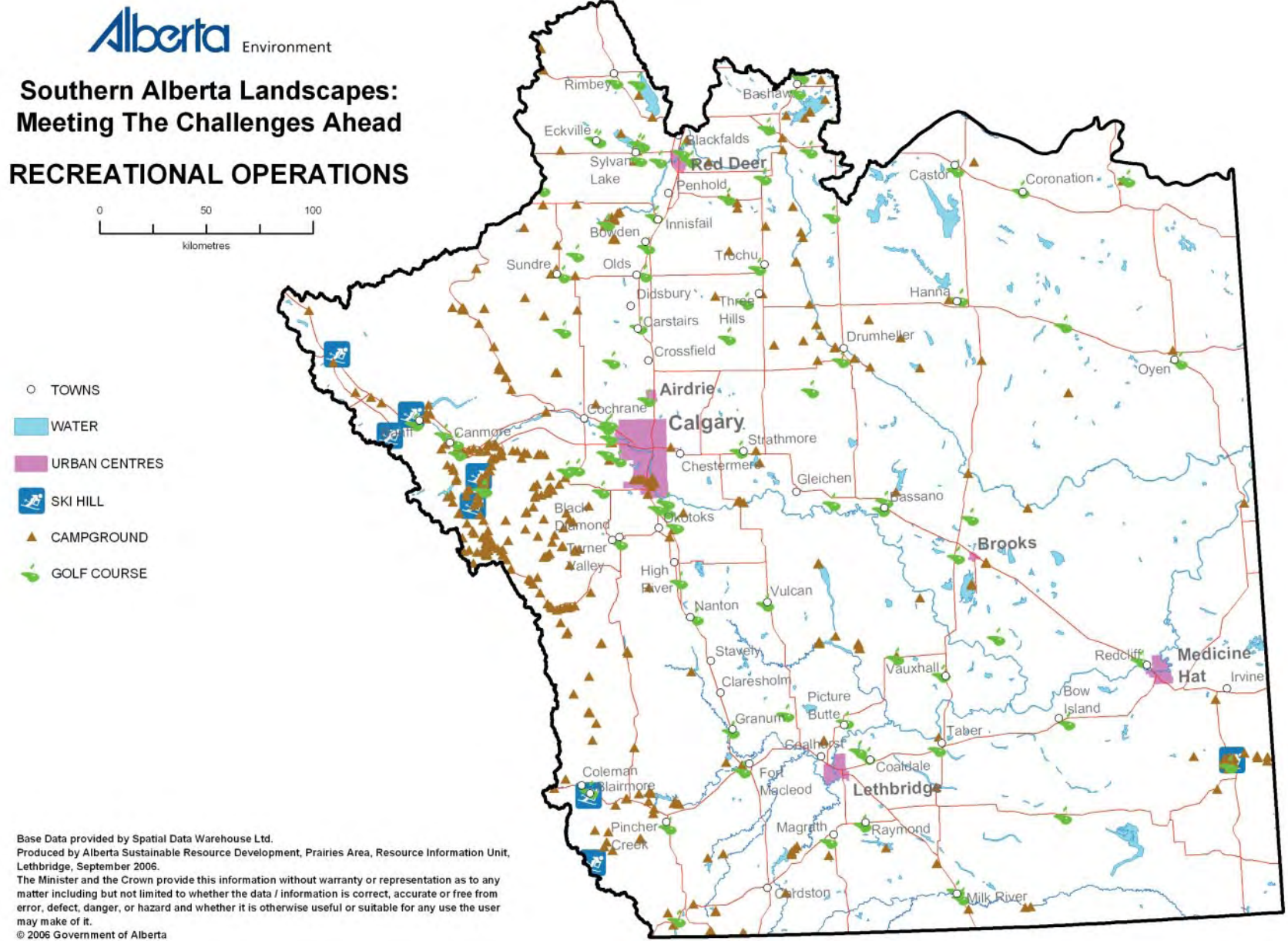


Figure 54. SAL Region Recreational Operations

►► Tourism, Parks and Recreation

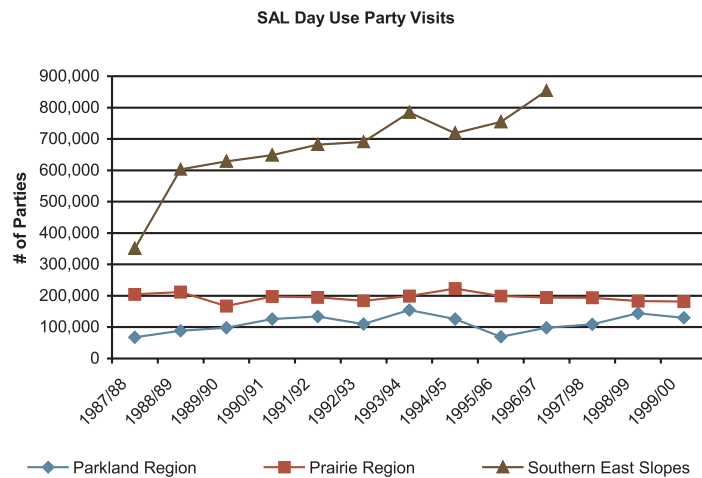


Figure 56. SAL Day Use Party Visits

Figure 56 shows the number of parties using provincial recreational facilities in the SAL region during the day. Again, numbers in the Southern East Slopes region are significantly higher than in the Parkland and Prairie regions, and in this case show a significant increase in numbers of parties, from about 310,000 in 1987/88 to about 850,000 by 1998/99.

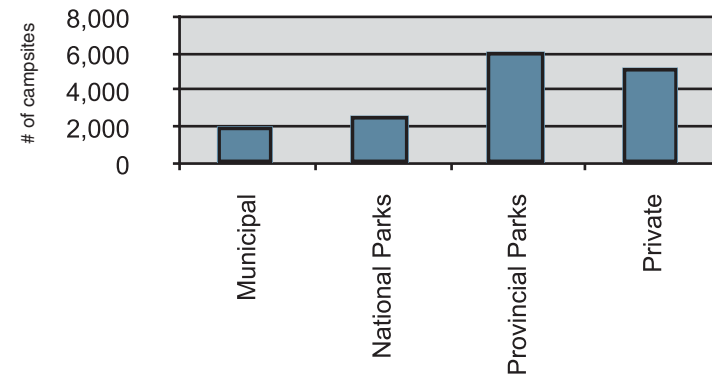


Figure 57. Campsite Ownership in SAL Region

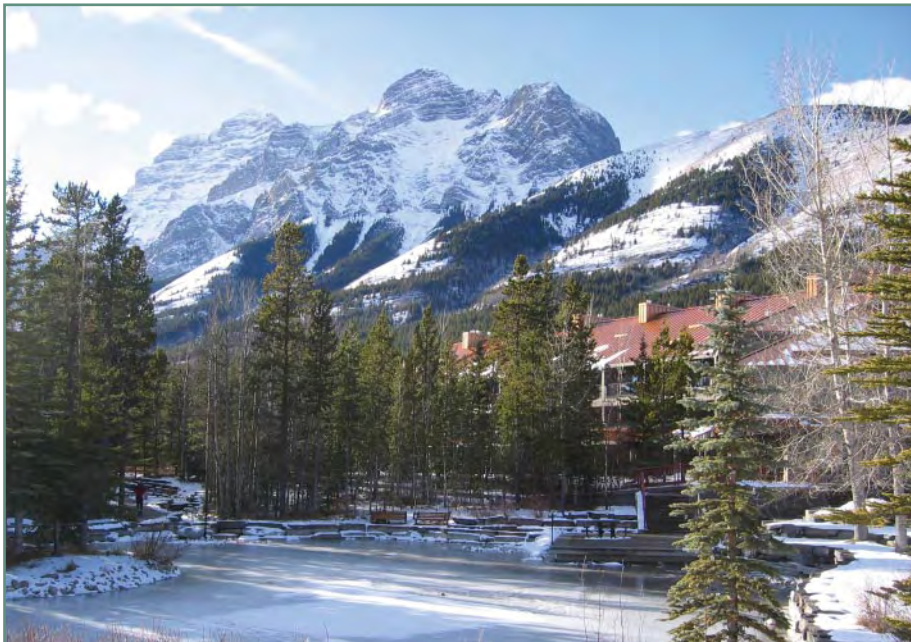


Figure 57 compares campsite ownership in the SAL region. In total, there are 182 campgrounds and 16,000 campsites, covering an area of 4,830 km².

Skiing is a growing industry in the SAL region due to easy access to the Rocky Mountains and the Eastern Slopes. There are 12 major ski areas – Fortress Mountain, Nakiska, Canyon, Drumheller, Hidden Valley, Pass Powderkeg, Wintergreen, Canada Olympic Park, Castle Mountain, Sunshine Village, Lake Louise, and Mount Norquay – with a total of 4012 hectares on which people can ski.

Golf is another tourism growth industry in the SAL region, with 91 golf courses currently operating. Together they offer 1,250 holes and cover an area of approximately 4,400 hectares.

►► Summary

The anthropogenic and natural features of the southern Alberta landscape are intricately connected to form a jigsaw puzzle of many overlapping pieces and layers.

The natural landscape of Grasslands, Parkland, Foothills, Rocky Mountains, and Boreal Forest, once home to relatively small populations of First Nations people and vast populations of bison and other plants and animals, now show the footprint of farming and ranching, oil and gas development, rural settlements and urban cities, tourism and forestry.

The waterways of the South Saskatchewan, Battle and Milk River Basins, fed by glaciers, snow and rainfall, were carved from the landscape during thousands of years. Today, water from the rivers serves multiple purposes: irrigation agriculture, mining, industry, and human consumption, not to mention preservation of the riparian ecosystem. Dams and diversions on southern Alberta rivers have made it possible to achieve a high standard of living in the region, yet with 80% of the province's population having access to just 20% of the water, southern Albertans are recognizing that this precious resource has its limits.

While the SAL region has a relatively small human population – about 1.5 million persons, or on average 13 people per km² – the impacts on the landscape of that population and their endeavours are having a significant impact on native plants and animals. The SAL region landscape is currently about equally split between natural landscapes and cropland. Roads, railways, oil and gas activity, agriculture and urban growth all have an effect on wildlife. Birds such as burrowing owls, loggerhead shrikes, piping plovers and Sprague's pipits have been designated species at risk due to the effects of pesticides, cultivation, and loss of food sources and habitat. Grizzly bears, which require huge tracts of land for their range, are dwindling in numbers, and swift foxes have been all but eradicated in southern Alberta. The northern leopard frog has been affected by the introduction of invasive plants and animals and the prairie rattlesnake populations are known to have declined in recent years.

On the other hand, tourists from around the world are attracted to the parks and protected areas in the SAL region, both provincial and national, because of their scenic beauty and the natural assets of the region. Four of Canada's 13 UNESCO World Heritage Sites are in the SAL region, and people come to hike, camp, golf and ski. Access roads and railways make these places readily accessible.

Forestry is a relatively small industry in the SAL region, with only about 16% of the region classified as forest. But forests also attract people, and there is significant population growth occurring on the Eastern Slopes of the Rockies, particularly just west of Calgary. Calgary itself is growing by about 17,000 people a year, and the other four cities in the region, Red Deer, Airdrie, Lethbridge, and Medicine Hat, show continuing growth that is not expected to stop any time soon.

Southern Alberta's landscapes have provided its people with beauty, resources and opportunities to have a high standard of living while protecting these environmental gifts. With the cumulative effects of increasing development on these landscapes, it will be up to southern Albertans to work together to determine the strategic, regional outcomes we want for the present and future of this richly diverse part of the world, and the means by which we will achieve them.



►► Glossary Glossary of Terms as Used in the State of the Landscape Report

A

Airshed:⁸ A geographic area that, because of emissions, topography and meteorology, typically experiences similar air quality.

Allocation (water):² The volume, rate and timing of a diversion of water. When water is redirected for a use other than for household purposes (use by an owner of property adjacent to a water body or from an aquifer), it is referred to as an allocation. All water users (except for household users) apply to Alberta Environment for a licence to use a set allocation of water.

Animal Units: Calculating livestock production on the basis of animal units (AU) rather than numbers of animals allows better comparisons in terms of feed and grazing land needed and manure production. One AU is defined as a 1000 lb. (450 kg) beef cow, with or without a nursing calf. A mature bull is the equivalent of 1.3 AU; a yearling steer or heifer is 0.67 AU and a weaned calf is 0.5 AU. An AU is calculated by multiplying the number of animals by the appropriate AU factor for the specific type of animal.

Animal Unit Months (AUMs): The amount of forage required by one animal unit (AU) for one month. An AUM is calculated by multiplying the AU for a particular animal by the number of days in the month.

Anthropogenic: Caused or influenced by human activities.

Anthropogenic Edge: The boundary between disturbed or developed land and natural habitat. The juxtaposition of the human landscape affects the natural environment for some distance from the edge. The resultant edge can alter the temperature, light intensity, plant and animal migration patterns and other aspects of the natural ecosystem.

Anthropogenic Footprint: A measurement of the land physically influenced by people; associated primarily with emerging transportation networks, cities and towns, rural residences and cropland, recreational developments and acreages, well sites, pipelines, and acreages.

Apportionment, Master Agreement:² Schedule A of the 1969 Master Agreement on Apportionment for the South Saskatchewan River between Alberta and Saskatchewan allows Alberta to “divert, store or consume” from the river system each year, a volume of water equal to one-half of the apportionable flow of the South Saskatchewan River at the Alberta-Saskatchewan boundary. The remaining volume of flow must be allowed to pass downstream into Saskatchewan. The exception to this general rule is that Alberta is entitled to divert, store or consume a minimum of 2.1 million acre-feet in any year. The effect of this exception is that during years when the volume of natural flow is less than 4.2 mil-

lion acre-feet (a rare occurrence), Alberta may pass less than one-half of the apportionable flow to Saskatchewan. If at any time during a year Alberta wants to divert, store or consume more than half the apportionable flow, a flow rate of 1500 cubic feet per second (cfs) must be maintained at the Saskatchewan border, unless the natural flow is less than 3000 cfs, in which case half the natural flow must be passed. There is no policy in Alberta concerning the amount of water each sub-basin of the South Saskatchewan River Basin must contribute to the Saskatchewan apportionment.

Approval:¹ A permit issued to operate municipal facilities and industries.

Aquatic Environment:² (As defined in Alberta’s Water Act) The components of the earth related to, living in or located in or on water or the beds or shores of a water body, including but not limited to all organic and inorganic matter, and living organisms and their habitat, including fish habitat, and their interacting natural systems.

B

Barrel: Crude petroleum and the refined products made from crude oil are measured either by volume, in cubic metres, gallons or US barrels, or by weight, in tonnes or tons. The loose rule of thumb for conversion is that a barrel a day is roughly 50 tonnes a year,

but the relationship varies according to density and product. One US barrel is considered the equivalent of 0.15899 cubic metres (1 m³ = approximately 6.29 barrels.)

Basin:¹ A geographic area drained by a single major river, including its tributaries, lakes and other water bodies. Same as watershed. (Also see river basin.)

BAC / Basin Advisory Committee:² A group established in river basins and sub-basins to provide advice for water management planning. Members of the BACs represent all sectors interested in water management in the sub-basin. Typical sectors represented in a BAC include irrigation agriculture, non-irrigation agriculture, ecosystem protection/environmental, First Nations, industry, municipal, and recreation.

Best Management Practices (BMPs):⁸ Management practices or techniques recognized to be the most effective and practical means for meeting goals, while minimizing adverse environmental and other effects. Also called Beneficial Management Practices.

Biodiversity:¹ Variety of life forms and processes (including species, communities and gene pools) in an environment. (Or the number of different types of living organisms, including bacteria, animals and plants, within an ecosystem.)

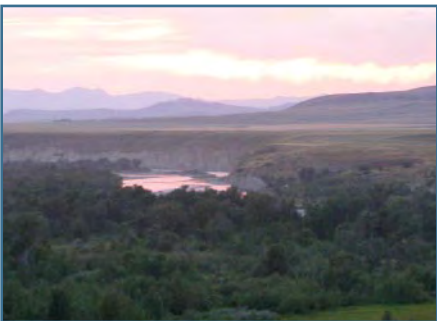
►► Glossary Glossary of Terms as Used in the State of the Landscape Report

C

Carbon Dioxide Sequestration (Carbon Sequestration): Carbon dioxide sequestration is a process by which carbon dioxide is removed from the atmosphere and stored indefinitely, in order to reduce the build-up of this principal greenhouse gas in the atmosphere and slow down the process of global warming. This may be done by increasing biomass (planting trees and grasses), by changing farming practices, by injecting it underground, or by increasing phytoplankton growth in the oceans.

Census Division:⁵ A group of neighbouring municipalities joined together for the purposes of regional planning and managing common services (such as police or ambulance services). These groupings are established under laws in effect in certain provinces and territories of Canada.

Climate:¹ A combination of all elements that characterize the atmosphere, especially those related to weather; a generalized statement or average of prevailing weather conditions.



Climate Change:¹ A long-term change in the average weather of a region.

Conservation: The careful utilization of a natural resource in order to prevent depletion.

Contaminant:¹ A substance in water, air or soils that is not normally present. Usually used for substances of concern for aquatic or human health, although it may include naturally occurring substances.

D

E

Ecological Footprint:⁸ An indicator of the magnitude, duration, frequency and distribution of environmental stressors and natural resource consumption associated with an activity.

Ecology:¹ The study of the inter-relationships among living things and their environment.

Ecoregion:¹ A contiguous geographic area with similar environmental conditions and therefore, similar plants and animals.

Ecosystem:¹ A community of animals, plants and bacteria and their interactions with each other and with their chemical and physical environment.

Edge Effects: See Anthropogenic Edge

Effluent:¹ Wastewater discharged to a stream, usually from a pipe.

Endangered Species: A species in danger of extinction from its entire natural range.

Environmental Effects:¹ Harmful effects on the environment from human activities.

Environmental Goods and Services:⁸
(i) Goods and services that are used, or can potentially be used, to measure, prevent, limit or correct environmental damage (both natural or by human activity) to water, air, soil, as well as problems related to waste, noise and ecosystems. This includes technologies used to reduce resource use, energy, emissions and waste. Critical to the definition is the end-use of the goods and services for environmental purposes.

(ii) Those products, often called public goods, which have environmental benefits but have no value in the traditional marketplace. Therefore they provide no direct economic return for producers. Examples include clean air, clean water, water supply, carbon storage, biodiversity, healthy soils and scenic vistas.

Environmental Quality:⁸ A measure of the status of the environment, overall or in relation to a medium such as air, water, or land, or to the needs of its inhabitants.

Ethane: A colourless, odourless gas (C₂H₆) produced chiefly from natural gas and as a byproduct of petroleum refining. Its chief use is as petrochemical feedstock for ethylene production. Most ethane production is to exact industry specifications, (to differentiate it from butane and propane,) hence is called specification ethane.

Extirpated Species: A species that no longer exists in a given part of its natural range, but still exists in other areas.

F

Footprint: A measure of how much land and water an individual, city, region, or humanity as a whole requires to produce the resources it uses and to absorb all the waste it generates, using prevailing technologies.

Fragmentation: The process of reducing the size and connectivity of an ecoregion or habitat. The resulting reduction in the total habitat area, the isolation of patches of habitat from each other and the increase in edge effects can affect the ability of organisms to maintain healthy populations and to survive.

G

Green Area:³ The unsettled portion of the province, primarily forest lands not available for agricultural development other than grazing.

►► Glossary Glossary of Terms as Used in the State of the Landscape Report

Greenhouse Gas Emissions:⁴ The release of greenhouse gases from the combustion of fossil fuels used for energy production. These emissions can affect climate and introduce pollutants that impact on air quality.

Greenhouse Gases: Gases, such as carbon dioxide or methane, which can contribute to climate change.

H

Habitat: The sum of the environmental conditions in which an organism lives, or the physical and biological environment that provides essential food, water and shelter for an organism.

I

Instream Flow:² The rate of flow in a river, without reference to its purpose.

Instream Flow Needs (IFN):² This is the scientifically determined water quantity or level, flow rate, and water quality required in a river or other body of water to sustain a healthy aquatic environment and to meet human needs such as recreation, navigation, waste assimilation or aesthetics.

Invasive (and Alien) Species: Alien species are defined as species of plants, animals and micro-organisms introduced outside their natural past or present distribution. Alien species

become invasive when they establish and spread in the new environment and threaten the native species, the environment, the economy, or some aspect of society. Alien species are also known as exotics, non-indigenous species, non-native species, or foreign species. They are sometimes called weeds or pests.

Irrigation District:² An organization that owns and manages a water delivery system for irrigation for a given region. In Alberta, there are 13 irrigation districts, all within the SAL region. Some irrigation districts convey water for other purposes, such as municipal use and stockwatering.

J, K

L

Land:⁴ Land refers to soil, surface water, groundwater and natural habitats. Impacts to land include the adverse effects on the environment that may occur from construction activities, agricultural activities, development of the urban environment, and contamination.

M

Model:¹ A computer program used to describe and make predictions about natural events.

Multiple Use: Management of a land area to support integrated use including timber and non-timber interests such as water, grazing, industrial development, recreation and wildlife.

N

Natural Capital:⁸ The value and utility of natural assets that is critical to our economic prosperity and quality of life. Like other forms of capital, natural assets require careful stewardship and investment for their value to grow and pay dividends over the long-term.

Natural capital consists of three components:

- Natural resource capital – stocks of renewable and non-renewable resources (e.g., minerals and energy, forests, water, fisheries)
- Ecosystems or environmental capital – systems that provide essential environmental goods and services such as our atmosphere and the waste assimilation provided by wetlands; and
- Land – the space in which human activities take place.

Natural Flow:² Natural flow is the flow in rivers that would have occurred in the absence of any man-made effects or regulation of flow. For purposes of water management, natural flow is a calculated value based on the recorded flows of contributing rivers, a number of factors

concerning the river reaches (e.g. evaporation, channel losses, etc.) and water diversions. This is also known as “reconstructed flow” and “naturalized flow”.



Natural Region:⁶ A group of contiguous landscapes that contain similar landforms, hydrology, geology, soils, climate, plants and wildlife.

Non-point Source: A diffuse source of water pollution that does not discharge through a pipe or other specific source; as contrasted with a point source.

Nutrient:¹ A substance essential for the growth of living organisms. In water, it usually refers to nitrogen and phosphorus, the same chemicals used to make a garden grow.

O

Oil Sands: Deposits of bitumen, a molasses-like oil that is extracted through drilling and the use of steam heat. They are contained in sand deposits beneath 140,800 km² of northeast Alberta. Less than 3% of the initial established resource has been extracted to date.

►► Glossary Glossary of Terms as Used in the State of the Landscape Report

P

Partner:⁸ An individual or organization that shares the costs, risks, benefits, power, and/or resources necessary to achieve a common objective. Partners resolve problems through mutual agreement.

Partnership:⁸ A relationship in which individuals or organizations share resources and responsibility to achieve a common objective, as well as share any resulting rewards or recognition. It often includes a formal contract, new resources and shared risks and rewards. The structure includes a central body of decision-makers whose roles are defined. The links are formalized. Communication is frequent, the leadership is autonomous and the focus is on specific issues. There is group decision-making in central and task groups. Partnerships are a form of collaboration.

Pesticides: Chemical compounds used to destroy unwanted species, including herbicides, insecticides, fungicides, and rodenticides.

Petajoule: A measure of energy equivalent to 1 million gigajoules (1,000,000,000,000 joules) or approximately 30 million kilowatt hours.

Pollution:¹ The contribution of substances from human activities that may make the environment less suitable for desired uses.

Protected Areas: Areas such as provincial parks, federal parks, wilderness areas, ecological reserves, and some recreation areas that have protected designations according to federal and provincial statutes. Protected areas are land and freshwater or marine areas set aside to protect diverse natural and cultural heritage.

Public Awareness:⁸ This refers to information sessions, web postings for information, social marketing, advertising and promotion of information, attitudes, values and behaviours to create a climate conducive to social and behavioural change.

R

Reclamation:¹ The process of converting disturbed land to its former uses and productivity. Similar to restoration, which is a more general term defining the process of returning any site to a prior condition.

Resources:⁴ Anything that is of use to humankind.

Resources, Non-renewable:⁴ Substances which have built up over geological time and can only be replaced over geological time. Non-renewable resources can be managed sustainably if the use rate does not exceed the rate at which they can be substituted with comparable renewable resources, and if critical natural capital is not eroded.

Resources, Renewable: Natural substances that are depleted at a rate slower than the rate at which they regenerate. Renewable resources include oxygen, fresh water, and timber. However, even these resources can become non-renewable if used at a greater rate than the environment's capacity to replenish them. For example, groundwater may be removed from an aquifer at a rate greater than the sustainable recharge.



Riparian Area:² The area along streams, lakes, and wetlands where water and land interact. These areas support plants and animals, and protect aquatic ecosystems by filtering out sediments and nutrients originating from upland areas.

River Basin:² An area of land drained by a river and its associated streams or tributaries. Alberta's Water Act identifies seven major river basins within the province:

- Peace/Slave River Basin
- Athabasca River Basin
- North Saskatchewan River Basin
- South Saskatchewan River Basin
- Milk River Basin
- Beaver River Basin
- Hay River Basin

Runoff:¹ Water that moves across land or through soils during snowmelt or rainstorms.

S

Sediments:¹ Soil particles that have been transported from their original location by wind or water. They may be in suspension or have settled to the bottom of a stream, lake or delta.

South Saskatchewan River Basin (SSRB):² The SSRB includes the sub-basins of the Red Deer River, Bow River, and Oldman River (including the South Saskatchewan).

Species at Risk:⁷ Plants or animals being extirpated, endangered, threatened, or of special concern.

Stream: A natural, flowing body of surface water, such as a river or creek, of any size, seasonal, temporary or permanent. Sometimes used as a synonym for creek or brook.

Stocking Rate: The number of animals that can graze an area of pasture while maintaining the health of soil, plants, wildlife and livestock.

Sub-basin:² A part of a river basin drained by a tributary or having characteristics that are significantly different from other areas in the basin.

►► Glossary Glossary of Terms as Used in the State of the Landscape Report

Surface Water:² Refers to water bodies such as lakes, ponds, wetlands, and streams. It may also refer to sub-surface water with a direct and immediate hydrological connection to surface water (for example, water in a well beside a river).

Sustainability:⁸ The process of managing biological resources (e.g., timber, fish) to ensure replacement by regrowth or reproduction before another harvest occurs; a balance between economic growth and environmental and natural resource protection.

Sustainable Development:⁴ Defined by the Brundtland Commission as "development that meets the needs of the present, without compromising the ability of future generations to meet their own needs."

T, U, V

W

Water Quality:¹ The chemical, biological and physical characteristics of water, usually with respect to its suitability for a particular purpose.

Water Quality Guideline: A numerical concentration or narrative statement for a substance or characteristic recommended to support or maintain a designated water use. It is assumed that if the guideline is exceeded, there could be risk to aquatic life or other uses.

Watershed:⁸ All lands enclosed by a continuous hydrologic-surface drainage divide and lying upslope from a specified point on a stream.



Sources of glossary definitions include:

¹ from the Northern Rivers Ecosystem Initiative – Synthesis Report glossary

² from Background information for public consultation on the SSRB draft water management plan

³ from The Economic Impact of the Alberta Forest Industry, Alberta Forest Products Assn., 2005

⁴ from ImagineCalgary, The City of Calgary Environmental Management, Sustainable Calgary and the Canada West Foundation
http://www.imaginecalgary.ca/public/reading_room/glossary/index.php

⁵ from Statistics Canada, <http://www12.statcan.ca/english/census01/Products/Reference/dict/geo008.htm>

⁶ from Alberta Natural Heritage Information Centre

⁷ from Government of Canada, www.pnr-rpn.ec.gc.ca/nature/endspecies/sar/db08s01.en.html

⁸ from Sustainable Resource and Environmental Management