

Nature at Its Best:

A Proposal to Conserve the **Woodbend Natural Area**
in Edmonton's North Saskatchewan River Valley



Presented by the
North Saskatchewan River Valley Conservation Society
October 6, 2008



[Edmonton's] river valley is on loan from future generations.

Ribbon of Green Concept Plan, City of Edmonton

Preserve, Protect, Enhance

Imagine this ... the entire river valley is linked and accessible to all, young and old, as one of the largest metropolitan river valley parks in the world.

Vision statement, River Valley Alliance.

Edmontonians had the foresight to see the importance of preserving our natural areas many years ago. This has been reflected in the many City of Edmonton projects and initiatives that reduce our impact on the environment. Signing this Commitment [to preserve biodiversity] positions Edmonton as a global leader in supporting the highest standards of environmental preservation and sustainability.

Mayor Stephen Mandel. "Edmonton signs historic biodiversity commitment." City of Edmonton news release, 29 August 2008.

The City of Edmonton will balance ecological and environmental considerations with economic and social considerations in its decision making and demonstrate that it has done so.

City of Edmonton Policy C-531, Natural Areas Systems.

The North Saskatchewan River Valley is the most critical component for wildlife movement and ecological processes in Edmonton. It also represents a significant biological corridor for the region connecting Edmonton to the east and west. Accordingly, it has been identified as a regional biological corridor. Overall, the ecological connectivity of the North Saskatchewan River Valley must be protected and should be restored where it has been degraded. It is important to note that the river itself represents a barrier to most wildlife movement and that connectivity is required along both sides.

Natural Connections Strategic Plan: Edmonton's Integrated Natural Areas Conservation Plan, page 21.

The Woodbend Natural Area

Located in Edmonton's southwest corner between Winterburn Road (215 Street) and the North Saskatchewan River, the Woodbend Natural Area covers an area of approximately 150 hectares, which is largely privately owned. It lies within a larger eco-region of some 250 hectares that includes Big Island and the City of Edmonton's Significant Natural Area NW394, known as "Sand Dunes/White Birch Woodlot".

The Woodbend Natural Area is Edmonton's largest and most complex natural area, containing:

- a distinctive riparian complex of wetlands and springs;
- a rich and diverse fishery and an important backwater channel in the river;
- habitat of the Capital Region's largest population of deer; other wildlife;
- ecologically vital connectivity to ravines and woodlands, Big Island, and the City of Edmonton's "Sand Dunes/White Birch Woodlot" natural area.

The Proposal

The North Saskatchewan River Valley Conservation Society ("NSRVCS" or "Society") proposes to preserve the Woodbend Natural Area, in perpetuity, for its intrinsic value and for the purposes of:

- public enjoyment;
- conservation education; and
- scientific research.

Because a considerable portion of the area is currently privately owned, the Society will endeavour to secure the non-public land under conservation trusts by working with existing owners, government bodies and other entities, including local and regional land trust organizations.

The Rationale

To an increasing extent, urban citizens have fewer opportunities to enjoy an unmitigated wilderness experience. Edmonton is one of the few cities in the world in which such an experience is easily accessible, and has been recognized by ICLEI, the international partnership for local government sustainability. ICLEI recruited Edmonton as one of 21 international partners – and the only Canadian city – to participate in an international urban biodiversity initiative that is profiled in Edmonton's *2008 Biodiversity Report*.¹

Unfortunately, Edmontonians risk losing one of the most important, and last remaining, large undisturbed natural areas within municipal boundaries. This same area has been proposed for gravel extraction – heavy industrial mining that would destroy the area's natural attributes beyond recovery. Though it has been proposed that the area would be reclaimed for programmable parkland when the mine is closed, the prime wildlife habitat would have been destroyed and the wetlands, fisheries and biodiversity irreparably damaged.

There are several examples throughout the river valley of industrial and mining activity in Edmonton's past, particularly gravel extraction. The resulting disturbed lands are now largely

¹ Other cities include Amsterdam, Barcelona, Bonn, Cape Town, Johannesburg, Nagoya, São Paulo, Zagreb and more (www.iclei.org/lab).

Nature at Its Best

North Saskatchewan River Valley Conservation Society

monoculture ecosystems – that is, golf courses or municipal parks with few, if any, natural components. The Woodbend Natural Area is the last remaining natural area of significant size in Edmonton’s river valley. It is the City’s most extensive, largely undisturbed natural resource. Such resources cannot be recreated, especially amid a growing urban population.

The Woodbend Natural Area presents a unique opportunity to preserve natural lands in the river valley that are largely unchanged since Edmonton became a gathering place for fur traders and Native Canadians. Protecting the Woodbend Natural Area would:

- represent a significant commitment by the City to its own conservation goals;
- provide an economical and accessible wilderness experience for the public’s pure enjoyment of nature within the City of Edmonton; and
- preserve an environmentally significant and vulnerable area for conservation education and scientific research.

In its “Plan of Action for the Capital Region River Valley Park,” the River Valley Alliance states, regarding the stretch of the North Saskatchewan River valley that includes the Woodbend Natural Area:

The natural beauty of the river valley is showcased in this planning area.... The objective is to preserve a treasure of nature amidst a growing urban population. People will be able to see and touch nature at its best, walk along trails, catch a glimpse of waterfowl at Big Island, launch a canoe for a closer look at the river, and just enjoy everything nature has to offer in the valley.²

In recent years, the RVA has made much of a study that ranked Edmonton’s river valley as third among the top ten urban parks in North America, behind only Golden Gate Park in San Francisco and Central Park in New York City.

The Woodbend Natural Area comprises a sensitive ecological system that is unique in the City of Edmonton. The Society proposes to protect the Woodbend Natural Area through a land trust arrangement so that its potential for public enjoyment, conservation education and scientific research can be realized today and by future generations.

The Society will work with the City of Edmonton, the River Valley Alliance and other stakeholders to achieve the common goal to “preserve nature at its best.”

Environmental Attributes

The Woodbend Natural Area includes a flood plain and riparian flats along the river, a steep-sided ravine to the south, and upland habitats. The broader Woodbend eco-region also includes Big Island, a wooded strip along the river from Big Island to the main Woodbend Natural Area, and the City of Edmonton’s Significant Natural Area 384, the “Sand Dunes/White Birch Woodlot.” The environmental attributes of these areas are summarized below and described in detail in the companion document *Edmonton’s Natural Jewel: The Woodbend Natural Area*.

The Woodbend Natural Area also contains the following.

- Edmonton’s largest natural riparian floodplain.

² “A Plan of Action for The Capital Region River Valley Park,” River Valley Alliance (approved by Edmonton City Council 4 July 2007). <http://www.rivervalley.ab.ca/area-2/>.

Nature at Its Best

North Saskatchewan River Valley Conservation Society

- Edmonton's largest and only natural riparian wetland, fed by numerous springs and by groundwater from the river, an important staging area for migratory birds.
- A rich environment for numerous wildlife species, including large and small mammals, amphibians, and at least 20 species of birds.
- Edmonton's only intact sand dunes, including a parabolic ("blowout") dune.
- A large white birch woodland, one of Edmonton's few birch-dominated stands.
- Notable river features, including a deep-water channel and back channels.
- Critical fish spawning area and *refugia* in a fish biodiversity hotspot that hosts 27 species, including the endangered lake sturgeon.
- Edmonton's largest riparian herds of white-tailed and mule deer, as well as moose. The natural area is an invaluable connective corridor for wildlife, particularly deer and moose, and is vital to the entire river valley system.
- A dense white spruce forest, rich in mosses, on the north facing slope, and a south-facing slope containing Edmonton's only known natural occurrence of common juniper.
- A remnant of habitat unusual to the region.
- Habitat and many ecological features uniquely suited for scientific research and conservation.

The Importance of Natural Areas and Natural Connections

41% of the [North Saskatchewan] river valley is protected but [privately owned] natural areas in the river valley in the southwest and northeast are under development pressure.

Page 10, *Natural Connections Strategic Plan: Edmonton's Integrated Natural Areas Conservation Plan.*

Natural areas throughout Edmonton are threatened by intense development pressure as the City responds to rapid economic growth and corresponding population increases. Development pressure is particularly heavy in the southwest, as has been noted in *Natural Connections* and other City reports and documents. Edmonton's natural areas network and its ecological connectivity are at risk as a result of rapid urban development.

Edmontonians have always embraced their parks and natural areas, but they have also begun to understand the value of natural areas in their own right and for the ecological services they provide.

The loss of natural areas does not simply put at risk citizens' proximity to nature. Natural areas provide many benefits that tend to go unrecognized. They intercept rainfall, reducing the need for stormwater infrastructure. Wetlands filter out pollutants, reducing the need for water treatment. Trees and other vegetation remove carbon dioxide from the air, reducing the impacts of emissions. Without natural systems, costly infrastructure must be built to replicate them.

A central tenet of conservation science is "network connectivity," which recognizes that natural areas should be managed within the context of the surrounding landscape and their relation to one another. Connectivity is a measure of the extent to which plants and animals can move between natural areas or the degree to which the landscape facilitates or impedes movement among resources, promoting genetic exchange to maintain viable populations. The most important activities toward which conservation must be directed are the preservation of core areas and

connectivity, both essential to maintaining biodiversity. The North Saskatchewan River valley, and in particular the southwest reaches of the river valley, were identified by the City in its 2006 *State of Natural Areas Project* report as a “primary core area” requiring special attention (“Executive Summary,” page 19).

The Society’s vision is entirely consistent with that of the City’s *Natural Connections Strategic Plan*: “A system of conserved natural areas, ecologically and effectively managed, connecting the river valley with tableland natural areas, restored green spaces and regional natural areas, recognized and supported by the community of Edmonton as a valued asset” (*Natural Connections*, page 27).

Why the Woodbend Natural Area Requires Protection: Adverse Impacts

The Woodbend Natural Area is threatened by industrial and mining activity in the floodplain. Such activity would have an adverse rippling effect on every ecological segment of this Natural Area and on the surrounding eco-region.

The single greatest adverse impact of floodplain mining would be the fluctuation of water levels in the City’s only riparian wetland. The wetland developed with natural water level fluctuations, the precursor to its rich wetland biodiversity. Mining and dewatering of the groundwater aquifer beneath the wetland could result in more dramatic fluctuation in water levels. Should long periods of extreme dryness persist, wetland communities might become less diverse and be reduced in size by encroaching upland vegetation. Wetlands cannot endure without water for five to ten years without being severely altered. Mining impacts on water levels could be sufficiently severe to significantly alter the entire wetland system. It is impossible to predict with certainty the impacts on the springs and associated ponds; however, due to their connectivity to the larger cut off channels in the wetland, they would likely be adversely affected by industrial activity.

North Saskatchewan River fish are under considerable threat from development in the watershed and changes to the river environment. The greatest adverse impact of industrial activity within the floodplain area is the alteration or destruction of the side-channel refugia located along the west bank of the river. This would very likely affect fish biodiversity in this stretch of the river. For example, mining operations would increase siltation during the early spring and autumn – normal periods of clear river water – and smother fish eggs. Mining around the wetlands would disrupt groundwater flows and damage the overwintering and oversummer side-channel refugia. Additional threats, especially in this area of high fish biodiversity, are unacceptable.

The river valley in this Natural Area is an important wintering area for white-tailed deer, mule deer and moose, as documented by the Alberta Fish and Wildlife Division. Although deer may occupy extensive upland areas in summer, they are often forced to occupy restricted ranges with overhead coniferous cover (thermal shelter) during winter. Tributary ravines and low elevation terraces adjacent to the river provide critical winter habitat for both deer species. Maintenance of these core habitat areas and travel corridors that enable safe movement from surrounding agricultural lands are essential for the survival of these populations. All forms of mechanical habitat disturbance that alter the availability of overhead cover or food (shrubs and saplings) will have adverse effects on these wintering areas. Deer are also intolerant of human disturbance during late winter when the rigours of cold and limited food make them more vulnerable. It is therefore important when winter concentrations are identified that adverse impacts resulting from incompatible land uses be avoided.

Proponents of gravel extraction have suggested most ungulate numbers will return to pre-disturbance population levels once the mined area has been reclaimed. Although there is some evidence that white-tailed deer populations recover over the long term in other jurisdictions, this has not been demonstrated in other areas of Edmonton that remain deer-free despite full reclamation. Recovery also depends upon a healthy remnant population, given the extensive habitat destruction, traffic increase and disruption of migrational pathways. It is, instead, much more likely that numbers will not recover from these combined insults and that moose and mule deer numbers, especially, will show a marked decline.

A sustainable ecosystem depends on its wildlife. Though large animals typically receive greater attention from wildlife enthusiasts, deer are not merely desirable in their own right. Deer also perform many important ecological functions that serve to maintain native vegetative, including herbivory, seed dispersal, soil compaction and nitrification. Without regular ungulate use, the ecological trajectory of the river valley and ravine system would be radically changed, and, over time, the diversity of indigenous plant species would diminish.

Finally, it must be noted that the principles of ecological connectivity, on which the City's entire conservation plan is based, strongly suggest that destruction of the Woodbend Natural Area to permit gravel extraction would also have a negative effect on existing natural areas designated and protected by the City, such as Big Island and the Sand Dunes/White Birch Woodlot natural area, reducing the ability of both additional elements within the network to sustain Edmonton's biodiversity for which the City has recently been internationally recognized.

The Society's Vision

Recreation

A trail system would be designed to direct visitors to appropriate areas and away from sensitive ones. Recreational use would be limited to hiking, walking, and bird watching. No vehicle traffic would be permitted. Interpretive signage would describe indigenous and invasive flora and fauna.

Educational Opportunities

An interpretive centre would be built where naturalists and historians could research, teach and enjoy natural ecosystems. It would be located where it is minimally intrusive but accessible, possibly at the top of the bank near the sand dunes. The educational value of locating the interpretive centre near the three landscape segments (floodplain, ravine and tableland) would be outstanding. Students at all levels would benefit from access to this natural, outdoor classroom, experiencing a unique learning opportunity. Some thought has been given to the potential offered by the area as a centre for the study of natural areas management and/or urban park management.

Accessibility

Located minutes south of Highway 627 (Garden Valley Road) and east of Highway 60, this landscape is accessible by automobile—or by boat, should a landing be included in plans for the area. The river valley lowlands can be accessed at the south end of the truncated 199 Street, and the upland habitats of the Sand Dunes/Woodlot Natural Area would be readily accessible from 215 Street (Winterburn Road). Provision for parking, including school buses would be required so that Edmontonians and their guests can visit and enjoy the area.

Nature at Its Best

North Saskatchewan River Valley Conservation Society

It is anticipated that the trail system would offer all-season universal access, including wheelchair accessibility to suitable paths. Paths would be constructed to last with minimal environmental impact in mind.

Ecological Integrity

With the establishment of a land trust, protection of the area is paramount. Industrial and mining activity and ATV recreational use would be prohibited. It is hoped, and intended, that following the acquisition of lands associated with one residential property, vehicular access to the area via 199 Street would terminate at the bottom of the hill.

Legacy

While the Society was created to support the conservation and protection of Edmonton's river valley, its first task is to preserve and protect the Woodbend Natural Area for purposes of public enjoyment, education and research.

North Saskatchewan River Valley Conservation Society

Late in 2007, residents of the Woodbend community learned a large gravel project was proposed for the river valley in the environmentally significant Woodbend area. As concern grew, the "Community Gravel Pit Opposition Committee" was formed. This citizens' group initiated a petition advocating a thorough environmental assessment. The petition has since been signed by approximately 7,000 Albertans.

Organizers soon concluded that the potential adverse impact of such a precedent setting land-use issue put at risk the entire North Saskatchewan River valley. Though Edmonton had been admirably served by the Edmonton Nature Club and Legacy Lands Conservation Society, it quickly became apparent there was no organization with the express purpose of advocating for the conservation of the river valley. Organizers incorporated the North Saskatchewan River Valley Conservation Society to intervene on behalf of Edmontonians regarding land-use policy issues concerning the river valley and tributary ravines. Membership in the Society has to date reached approximately 250 and includes members from across the Capital Region and other parts of Alberta.

The Society is actively supported in its work by a number of conservation organizations, many of which are represented on the Board of Directors. The supporting organizations are listed below:

- Alberta Wilderness Association;
- Canadian Parks and Wilderness Society;
- Edmonton Nature Club;
- Legacy Lands Conservation Society;
- Sierra Club of Canada, Prairie Region;
- Water Matters Society of Alberta; and
- Western Canada Wilderness Committee.

Achieving the Woodbend Natural Area Vision

Realization of the Woodbend Natural Area will require support in many forms.

Financial Support

Funds will be required to secure the land, whether through direct ownership or the establishment of conservation easements. The Society will prepare budgets and solicit funding support. It is anticipated that funds so generated will be channeled through an existing local land trust organization.

Planning

Considerable effort will be required to plan for and manage the Woodbend Natural Area, including expert professional advice, and planning for use, layout, access, stewardship and maintenance need to be developed.

Close coordination and cooperation with the City of Edmonton's Office of Natural Areas and other City personnel will be essential. Other stakeholders will be consulted and engaged as appropriate, including area residents, conservation organizations, the River Valley Alliance, the Province of Alberta, and others.

References

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