SAGE
Southern Alberta Group for the Environment

"It is better to weep with wise men than to laugh with fools."

Spanish Proverb

April 1st, 2016

SAGE Meeting every third Wednesday, April 20th, 2016 at the Lethbridge Public Library downtown, 7 to 9 p.m.

Take part in the **Clean Community Challenge** by taking action to make Lethbridge a cleaner, more beautiful place to live! www.lethbridge.ca/living-here/clean-community/Pages/default.aspx

Try out the City of Lethbridge's new Waste Wizard.

Minister Phillips on the Castle

Minister Shannon Phillips has been meeting with stakeholders to form some consensus on the goals regarding the creation of a wilderness area and provincial park in the Castle.

Concerns include random camping, off-highway vehicle (mis) use, hunting, wildlife management, recreation, invasive species vectors, habitat, biodiversity, and headwaters protection. The Minister has suggested that headwaters protection and conservation are widely supported in the province and that the government will make science-evidenced decisions. The timeline for the process is expected to end by early 2017.

The Government of Alberta has created a Science Strategy to provide science-based evidence so as to support informed decision making. SAGE has previously encouraged the government in to support better monitoring of key indicators for fine-scale assessments of cumulative impacts. The Ministry has also promised to create a Vegetation Management Strategy for the region, similar to the one completed in the Kananaskis.

Local Energy Poll

The Citizen's Research Lab at Lethbridge College conducted a poll on energy and the carbon tax in Alberta.

Regarding the Carbon Tax, the question was "As part of its climate change strategy, the Alberta government is planning to introduce a carbon tax in Alberta beginning next year. Please tell me how much you support or oppose the introduction of a carbon tax in Alberta. (Optional Read: the carbon tax will require Albertans to pay 4.7-cents more per liter of gas at the pumps in 2017, and 5.5 cents more per liter of diesel, plus an extra $320 to heat their homes in 2017, rising to $470 by 2018.)"

The polling results show a split, with 56.6% disagreeing and 43.4% agreeing. Interestingly, there was a strong correlation between the opinion on the Carbon Tax and political support, with roughly 75% of conservative voters disagreeing, and 70% of progressive voters agreeing.

In the same poll, Lethbridge supports the phase out of coal-fired generation with 56.7% agreeing and 43.3% against. Like the Carbon Tax question, partisan differences were significant in the results.

Full results can be found at www.lethbridgecollege.ca/

Coming Soon to Wastebridge!

You may remember ...

Don't Worry, Just Throw Away That Thing
Waste, Waste, We Do
Digging a Hole
It's All Just Garbage To Me
The Opt Out Anthem
I Won't Change a Thing (If You Vote For Me)

Zero Energy Home, Lethbridge 2016

Brian and Katrina Sexton are building a Net-Zero Energy Home in Lethbridge. The home was designed by Peter Amerongen, from Habitat Studio in Edmonton, who has championed Net-Zero homes for over a decade.

The design principle for Net-Zero homes is to create enough energy on-site to heat and power a home over the span of a year. To best accomplish this goal, the home is designed to conserve heat: in this home, R40 walls and R90 insulation in the attic is used, which is roughly double that of a standard home. Triple pane windows are installed to reduce heat loss, and south facing windows are optimized to allow more heat in from the sun than is lost in the winter. An extended eave shades the south-facing windows to reduce unwanted solar gains and keep the home cool in the summer . One of the largest causes of heat loss in a home is air movement through the envelope (both unwanted infiltration and mechanical ventilation). Sealing the home well during construction and installing a Heat Recovery Ventilator on the ventilation system is effective in reducing energy losses. This also ensures humidity is controlled inside the home.

The Sexton home will be heated using electricity. All the electricity a home uses to do work (ovens, refrigerators and freezers, hair blowers, margarita blenders, etc.) results in energy being released to the home (and this reduces the heating demand). In Alberta, the average home uses about 6000 kWh of electricity each year. To heat the home, electric base-board heaters will be used and will consume an additional 19,000 kWh. Normally, this might be an expensive alternative, as electricity in Alberta is about 10 times more expensive than natural gas for the same heating, which is why it is important that the home be designed for a very low heating requirement. Economically, the savings of not having a natural gas connection can be used against the electricity costs.

This home includes a rough-in for a mechanical system called an Air Source Heat Pump. This system takes heat from the air outside and moves it inside, not unlike a refrigerator which takes heat from inside the box and puts it outside the box. Air Source Heat Pumps are also not common in cold climates because they lose efficiency at colder temperatures, though they can be very effective in the shoulder seasons - on average this system will give 3.2 units of heat energy for every 1 unit of electricity (or 320% efficiency overall). This system can also be used to cool the home in the summer.

Once one has designed an energy efficient home that optimizes solar energy and includes an efficient heating system, to achieve zero-energy an electricity generating system must be installed. This has been a barrier to the widespread acceptance of zero-energy homes in the past, as photovoltaic (PV) systems have been expensive. In the last decade, however, the cost of PV has plummeted by a factor of three, with an installed system cost of about $3/Watt. In this home, about 12 kW of electricity generating PV will be required. The solar system will generate enough energy to match the requirements of the home for electricity use plus heating over the course of a year. Tied to the grid, the system will generate a surplus of electricity in the summer and will draw down its electricity credit in the winter. No natural gas is required and the electricity bill will be only the service charges.

Net-Zero homes are increasing in popularity across North America, including projects completed in Edmonton and Calgary. This is the future for homebuilding. Follow on facebook at https://www.facebook.com/groups/980043175399111/

In Memorandum: Lloyd Flaig, Director of SAGE through most of the 1990s and chair for a few years in the early 1990s, died on Thursday, March 10th. A few among us will remember the barbecues we enjoyed around a campfire on the Flaig farm on Broxburn Road south of Lethbridge. From the Lethbridge Herald: "Lloyd was a teacher and principal with Lethbridge Public School District #51. He was an artist, a poet, and a writer. A staunch environmentalist, Lloyd camped and canoed many of the lakes and rivers in the western provinces."

Interesting Links:

Net-Zero Energy Homes	http://www.nrcan.gc.ca/energy/efficiency/housing/research/5131
100% Canada - Renewable Energy	https://100.org/wp-addons/maps/img/infographics/100_Canada.pdf

SAGE
Southern Alberta Group for the Environment

Southern Alberta Group for the Environment (SAGE)

A Leading Voice for a Healthy and Environmentally Sustainable Community.

Visit us at: http://sage-environment.org/

If you are interesting in getting involved, contact us at:

sage-communications@sage-environment.org

The Optimistic Environmentalist: Progressing Towards a Greener Future

My first flee-response to the book was due to the title. I had just finished reading Terry Eagleton's book, *Hope Without Optimism*, which tried to parse hope from optimism. He says authentic hope "needs to be underpinned by reasons. […] It must be able to pick out the features of a situation that render it credible." Hope must be fallible, as opposed to optimism (a word Eagleton relates to 'temperamental cheerfulness') which is not. "True hope is needed most when the situation is at its starkest, a state of extremity that optimism is generally loath to acknowledge." In other words, we need hope which acknowledges the challenges and allows us to prepare for them; situations in which blind optimism fails us.

David Boyd says in the introduction, "Research by psychologists and cognitive linguists offers profound insights for those who care about the planet's future. Pressing people's fear buttons, a prominent strategy among environmentalists, usually triggers an instinctive survival response. When confronted by fear, most people suppress their concern for other s and focus on their own interests. […] In the face of overwhelming environmental threats, people are overcome by feelings of helplessness and are less likely to take any kind of remedial action" (p.xix). It is at this point that my second flee-response begged me to move on to another book, as it often follows with a series of feel-good stories that will have absolutely zero impact on motivating a progressive response to our environmental challenges. I kept reading, however, and was pleasantly surprised.

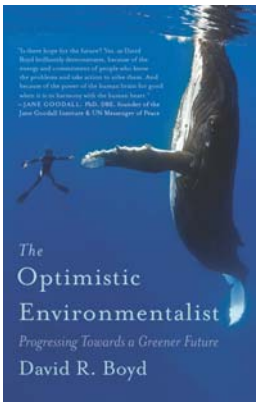
The Optimistic Environmentalist negotiates the Charybdis of naiveté and the Scylla of vacuity. Boyd is not unaware of our collective environmental challenges, but he chooses to present the many positive changes over the past number of decades. He discusses improvements for cleaner air, the effective response to ozone depletion, and the reduction in use of hazardous chemicals in food production and manufacturing. He also addresses the built environment and transportation as two of the most energy consuming sectors.

Regarding the economy, Boyd does a very nice job describing good design principles including cradle-to-cradle design, zero waste, and biomimicry (innovation inspired by Nature). These are indeed essential ingredients to approaching sustainability in practice and depends on the implementation of strong policies in manufacturing. He quotes McDonough: "Human beings don't have a pollution problem; they have a design problem. If humans were to devise products, tools, furniture, homes, factories, and cities more intelligently from the start, they wouldn't even need to think in terms of waste, contamination, or scarcity … Good design would allow for abundance, endless reuse, and pleasure."

He also quotes Janez Potocnik, the European Commissioner for Environment, who says: "If we want to compete, we have to get the most out of our resources, and that means recycling them back into productive use, not burying them into landfills as waste. Moving to a circular economy is not only possible, it is profitable, but that does not mean it will happen without the right policies." One of the greatest strengths of the book, I believe, was that the solutions were to be found not only in individual consumer behaviour (where weaker books seem to thrash around), but in good public policy. Boyd astutely maintains: "Governments need to protect and fulfill this right [the right to a healthy environment] by rigorously implementing and enforcing strong environmental laws and policies, using taxes and fees to make polluters pay, accelerating the shift to renewable energy, replacing environmental hazards with safe substitutes , applying the precautionary principle, and ensuring that environmental benefits and burdens are fairly shared" (p.192).

Boyd concludes that "The optimistic environmentalist's message to the world is that we can do better" (p.202). This book is designed to help us see that truth.

The Optimist Environmentalist is well written, interesting, and achieves its goal of supporting authentic hope while acknowledging the challenges. It neither paralyzes with fear, nor does it lull into complacency. The word I might use is pragmatic - we can do better, but we need the public policy to advance positive change.



A leading voice for a healthy and environmentally sustainable community

Box 383 Lethbridge AB T1J 3E9; http://www.sage-environment.org/

NEWS RELEASE

Release Date: March 9, 2016

SOUTHERN ALBERTA GROUP FOR ENVIRONMENT (SAGE) CALLS FOR HEADWATERS RESTORATION TO BENEFIT MAJORITY OF CITIZENS IN SOUTHERN ALBERTA

The Southern Alberta Group for Environment (SAGE) together with others in the conservation community is calling for reduced linear footprint, strict limits on off-highway vehicles (OHVs) on public lands, and a ban on OHVs in parks and protected areas. A communiqué was sent to the Government of Alberta on January 13, 2016 (Attachment 1). The Southern Alberta Group for Environment (SAGE), established in 1984, works to protect and restore the health of our environment – water, air, and land – in Lethbridge and region.

The headwaters of the Oldman River are important to the more than one hundred thousand residents of Lethbridge and surrounding communities not only because most of our water supply originates in the mountains and foothills, but also because they provide places for amazing outdoor recreation experiences, including wildlife viewing.

The Poll Haven, Castle River, Crowsnest Pass, Dutch and Racehorse Creeks, Upper Oldman, Livingstone Range and Porcupine Hills evoke images of scenic forested wildlands and clear running water. The reality is that these areas are severely damaged and streams are sullied from the combined effects of high-intensity industrial development and unrestricted recreational use including off-highway vehicles (OHVs).

"Having participated as an environmental representative on the board of the Oldman Watershed Council for several years, I am well aware that the density of roads, trails and cutlines, most accessed by motorized vehicles, exceeds levels for sustaining native fish and grizzly bears in a large portion of the forested areas of the Oldman headwaters" says Cheryl Fujikawa, SAGE director. "The motorized activity also pushes hikers out of these areas".

According to the recent survey on wilderness and recreation there is a preference among southern Albertans for non-motorized outdoor recreation, such as hiking and camping in established campgrounds. Only 2% to 3% of residents in the South Saskatchewan Region

participate in off-road motorcycling, OHV use or snowmobiling. "It is unreasonable to continue to retain linear footprint from past logging and other industrial developments and to accommodate OHV use in our headwaters given the risks posed to our source waters and to the use and enjoyment of Eastern Slopes wildlands by the majority of Oldman basin residents" says Braum Barber, SAGE Chair. "It's time we started to place strict limits on linear footprint and OHV use and restore the damage".

Unregulated OHV use in the headwaters of the Oldman River threatens aspects of the watershed most valued by the large majority of its residents. Over the last decade, five separate surveys and consultation processes have clearly shown watershed protection and sustaining biodiversity are priority values among southern Albertans (Attachment 2). Results also show strong support for reducing linear footprint, restricting motorized access and regulating off-highway vehicles. "There is overwhelming public support for a principled approach to planning for the new Castle Park and for linear footprint and recreation plans being developed for the Porcupine Hills and Livingstone area" says Cheryl Bradley, SAGE director. "A principled approach would restore disturbances to native condition, restrict and regulate off-highway vehicles, and provide non-motorized outdoor recreation opportunities".

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Attachments:

1. Communiqué from Eastern Slopes Today and Tomorrow Workshop December 4 2015, Calgary, Alberta, Canada
2. Summary of Recent Reports on Community and General Public Views Relevant to Land Use Planning in the Porcupine Hills (Compiled by Cheryl Bradley, February 2016)

Media Release
Embargoed Until Wednesday February 17, 2016, 12:01 AM

Latest Numbers Show 37% of the Prairie Region of Alberta Remains as Native Vegetation

Biggest ecological change: species that require native prairie habitat have lower-than-expected abundance

EDMONTON, February 17, 2016 - As of 2013, 37% of the Prairie Region[1] of Alberta remained as native vegetation according to the latest report by the Alberta Biodiversity Monitoring Institute (ABMI). In other words, the majority of the land base in the Prairie Region has been visibly transformed by human development.

The report, "The Status of Biodiversity in the Grassland and Parkland Regions of Alberta", presents the latest data on several indicators of environmental health—species, habitat, and human footprint—for the Prairie Region of the province. The region is one of few in North America that contain large tracts of temperate native grassland, an ecosystem type among the most threatened in the world.

The Prairie Conservation Forum (PCF), a non-profit organization with a mandate to promote the conservation of native biodiversity in prairie and parkland environments in Alberta, commissioned the report to provide an inventory and assessment of regional biodiversity for the new 2016-2020 Prairie Conservation Action Plan. The report also highlights results for a sub-region within the Prairie Region identified as the High Value Landscape, an area defined by native vegetation, species at risk and more.

With respect to the Prairie Region, human footprint covered 63.1% as of 2013. By contrast, inside the High Value Landscape, human footprint was less than half, at 30.8%. Agriculture was the dominant footprint type, measuring at 55.2% for the Prairie Region, with transportation and energy trailing far behind at less than 3%. Of note, however, between 1999-2013, the High Value Landscape showed a larger increase in the per cent area of human footprint.

Based on an assessment of 197 species, the corresponding Biodiversity Intactness Index[2] is, on average, 53% for the Prairie Region and 69% for the High Value Landscape. The biggest ecological changes are associated with the lower-than-expected abundance of species that require native prairie habitat, such as the Baird's Sparrow, Sprague's Pipit, and many vascular plant species. In the case of species that thrive in agricultural landscapes or disturbed habitat, such as Coyote, Chipping Sparrow, and Foxtail Barley, they were found to be more abundant than expected.

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[1] The Prairie Region of Alberta comprises the Grassland and Parkland Natural Regions.

[2] The Biodiversity Intactness Index is a measure of how much more or less common a species is compared to an undeveloped landscape free of human footprint.

The report also examines the number and abundance of non-native plants, since, given the right conditions, non-native species can become a major ecological concern. In the Prairie Region, an average of nine non-native plant species were detected at each ABMI site. A number of these are crop or forage species associated with agriculture footprint. Two species, the creeping thistle and perennial sow thistle, are listed under the Alberta Weed Control Act.

"The Prairie Conservation Forum was pleased to work with ABMI to commission this report, creating science-based evidence that helps focus our efforts for the next 5 years. This report flags the urgency of retaining the health and resiliency of our remaining high value landscapes. Check out the 2016-2020 Prairie Conservation Action Plan (PCAP) for ways you can get involved in collaborating with our multi-stakeholder group."

--PCF Board of Directors

With biodiversity in the Prairie Region at 53% intact, there are challenges associated with the management of native prairie species and habitat. The information presented in the report provides a baseline on the current status of species, habitat, and human footprint for the region, which can be used as a foundation for evaluating the sustainability of resource development going forward.

A copy of the report is available on the ABMI's website: abmi.ca/home/publications.

About the ABMI

The Alberta Biodiversity Monitoring Institute is an independent, not-for-profit scientific organization. The ABMI's business is to monitor and report on the status and trends of Alberta's species, native habitat, and human footprint. ABMI provides relevant, timely, and credible scientific information to support natural resource and land use decision-making in Alberta. More on ABMI is available at abmi.ca

About the Prairie Conservation Forum

The Prairie Conservation Forum is a not-for-profit organization that has been working collaboratively for over 20 years towards prairie conservation and the development and implementation of Prairie Conservation Action Plans (PCAPs). Our vision is that the biological diversity of native prairie and parkland ecosystems is secure under the mindful and committed stewardship of all Albertans. More about the PCF is available at www.albertapcf.org.

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Newly Demonstrated Cold Weather Energy Savings and Benefits to an Endangered Native Ecosystem May Bring More Green to Calgary Roofs

FOR IMMEDIATE RELEASE

Calgary – **In perhaps the first real-world assessment conducted in the Prairie Provinces, Applied Aquatic Research Ltd. (AAR) has shown that green roofs continue to offer benefits to business owners in cold environments. While Toronto, New York, Chicago and all of Europe are putting up green roofs, lack of cold-weather specific research and harsh growing conditions have held back green roof development in semi-arid climates like Calgary. Native Roofs, a Calgary green roof company, is launching this month to build on AAR's results. Native Roofs intends to build native prairie green roofs in Calgary while helping to reestablish endangered mixed-grass prairie ecosystem within dense, urban environments.**

After reviewing their energy efficiency initiatives (primarily from a green roof added in 2007) AAR concluded their green roof had reduced their energy consumption, resulting in about $3,650 per year less in natural gas and electricity costs on their two-story building. The green roof also reduced extremes in consumption, resulting in more consistent costs. Conventional tar and asphalt roofs conduct significant heat in the summer and have much lower insulation ratings throughout the year. In contrast, green roofs maintain a more constant temperature close to ambient, and reduce heat flux and energy demand. In winter, they offer improved insulation and reduce heat loss by 10-30% resulting in lower energy bills.

Green roofs have other financial benefits to building owners. They extend the lifespan of the roof membrane from 15-17 years to upwards of 40 years (a savings of about $16,500 every 15 years for AAR). They increase property value, improve tenant enjoyment and insulate from overhead noise. The initial upfront cost of a green roof is appreciably more than a conventional roof but Native Roofs estimates that energy and roof replacement savings alone pay for the green roof in about 15 years.

In addition, green roofs help the city, the community and the environment. They absorb storm water, reduce the urban heat island effect and improve air quality and bring as much as $38 per square foot

in public benefit. Native Roof's approach to green roofs also supports habitat preservation, the Calgary's Biodiversity Plan and COP 21.

> "The first hurdle was establishing a green roof in Calgary's difficult environment. After that, as a team of biologists working in habitat restoration, we thought we could do one better. So we created a native prairie rooftop habitat complete with native grasses, plants, insects and animals - what we call a Native Roof." says Tom Boag, President of AAR.

Native prairie is one of the most endangered ecosystems in North America, with only a couple examples intact in and around Calgary. About 10% of Canada's native prairies remain intact (25% for all of North America). Grassland bird species are one of the most threatened groupings of birds in Canada as a result of habitat loss: on average they have seen 40% declines since 1970.

For plants, insects and birds, rooftop ecosystems act like islands amongst urban development. It allows them to continue living in an otherwise uninviting environment. With rooftops making up as much as 70% of the area of the downtown core, Native Roofs would have the greatest benefits for the environment and community when implemented widely: something AAR would like to see. AAR has established a subsidiary, Native Roofs, in order to make this concept available commercially in Calgary and eventually in other semi-arid areas of North America. Further information is available at NativeRoofs.com.

Background

Native Roofs is a subsidiary of Applied Aquatic Research Ltd. (AAR), an environmental consulting company. AAR's expertise in habitat restoration, biology, ecology and Alberta's natural environments was instrumental in establishing a successful native prairie green roof and rooftop ecosystem in Calgary's harsh semi-arid environment.

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