



Hydro Files

Aquality Environmental Consulting Ltd.



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Pesticide Atrazine Can Turn Male Frogs Into Females

ScienceDaily (Mar. 1, 2010)

Atrazine, one of the world's most widely used pesticides, wreaks havoc with the sex lives of adult male frogs, emasculating three quarters of them and turning one in 10 into females, according to a new study by University of California, Berkeley, biologists. The 75 percent that are chemically castrated are essentially "dead" because of their inability to reproduce in the wild, reports UC Berkeley's Tyrone B. Hayes, professor of integrative biology. "These male frogs are missing testosterone and all the things that testosterone controls, including sperm. So their fertility is as low as 10 percent in some cases, and that is only if we isolate those animals and pair them with females," he said. "In an environment where they are competing with unexposed animals, they have zero chance of reproducing." Some 80 million pounds of the herbicide atrazine are applied annually in the United States on corn and sorghum to control weeds and increase crop yield, but such widespread use also makes atrazine the most common pesticide contaminant of ground and surface water, according to various studies. More and more research, however, is showing that atrazine interferes with endocrine hormones, such as estrogen and testosterone in fish, amphibians, birds, reptiles, laboratory rodents and even human cell lines at levels of parts per billion. Recent studies also found a possible link between human birth defects and low birth weight and atrazine exposure in the womb.



Who We Are

We are your water quality experts. Aquality provides environmental consulting on a variety of water quality and fisheries related projects from lakes and wetlands to rivers and streams. Specializing in nutrient dynamics and pollution abatement, we provide technical and regulatory advice for clients seeking information on a variety of aquatic environmental topics including lake and wetland eutrophication, fisheries and treatment wetlands.


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Alberta Chamber of Resources says Alberta to change wetlands plan

John Cotter, *Canadian Press*, March 10, 2010

EDMONTON — A group representing oilsands and other resource companies says it has convinced the Alberta government to change a plan that would force corporations to spend big money to restore wetlands ruined by mining projects. Conservationists say if the statement by the Alberta Chamber of Resources is true, it would make a mockery of the province's promise to develop the oilsands in an environmentally responsible manner. "The province has agreed to three of the four changes to the proposed wetlands policy that (the chamber) suggested in a letter ... we delivered to the Ministry of Environment," says a report posted on the chamber's website. "While the wetlands policy has not yet been implemented, these changes may save literally billions of dollars for our members in the future." Alberta currently has no policy to protect or restore wetlands that are ruined by resource development in the northern half of the province, including the wetlands rich oilsands region. After years of study, the Alberta Water Council submitted a report to the province saying that vacuum could no longer continue. The council said wetlands are vital to migrating ducks and waterfowl, songbirds, caribou and the overall environmental health of the Athabasca River basin. The report, submitted 18 months ago, called for a "no-net-loss" policy for wetlands. It recommended that companies that destroy such areas should be required to either restore them, bolster a nearby depleted wetland or build a new one somewhere else in the province. The government was supposed to have rolled out the policy last spring. But two organizations in the 25 member water council opposed the recommendation for mandatory action — the Alberta Chamber of Resources and the Canadian Association of Petroleum Producers. Together they wrote dissenting letters in 2008 asking the province to make wetlands restoration discretionary. In its letter, the chamber also said it opposed the concept of "no-net-loss" and suggested the government delay taking action. It also recommended the province not include any existing oilsands projects in any wetlands policy.

The Canadian Association of Petroleum Producers in its letter said the cost of such a policy "could exceed billions of dollars." Some members of the water council say they are worried the industry's lobbying efforts have won over a government eager to appease Alberta's slumping resource sector.

"We are very much concerned that it has been significantly undermined," said Carolyn Campbell of the Alberta Wilderness Association. "We are worried that by caving in to one sector's request, we would weaken our wetland policy across the province."

Other members of the council share those concerns. They're also unhappy over the delay of a policy that has been in the works for four years.

"We are hoping it won't be watered down, but we are getting some signals from industry. The Alberta Chamber of Resources is claiming victory over the policy," said Pat Kehoe, manager of conservation programs for Ducks Unlimited.

"Any change that would lessen the imperative of the policy or weaken the application of the policy would be of great concern to us. We have huge wetland resources in this province, but we also have had huge wetlands impacts. We need wetlands protected and restored."

Brad Anderson, executive director of the resources chamber, says its position on wetlands was posted on the group's website last year to update members and may now be out of date even though it remains posted. "We don't know where the government is going with this wetlands policy or when it is going to come out," he said.

Environment Minister Rob Renner says the province hasn't made a final decision. He wouldn't commit to an announcement this year even though the policy is already at least one year overdue. Renner said balancing the need to protect the environment without thwarting resource development is so complex it will take more time for the plan to wind its way through the government before anything is approved. "It is a misrepresentation to say that Alberta Environment has agreed (to change the proposed policy). We accept arguments that some have made. We take those arguments and we try and maintain that balance," he said.

"At the end of the day, there needs to be a clear policy that says that there are consequences that have to be acknowledged and have to be dealt with when wetlands are destroyed."





Eye On It

- [The Athabasca Watershed Council](#) is the newest Watershed Planning and Advisory Council to form under the Water for Life strategy. This watershed runs from the Rocky Mountains to north eastern Alberta where it joins the Peace River to form the mighty Slave River. The new WPAC will assess the state of the Athabasca watershed and develop watershed management plans.
- [Nutrient Beneficial Management Practices Evaluation Project 2007- 2011](#) Soil erosion or poor nutrient management practices can contribute to water quality problems. To assess the effectiveness of nutrient best management practices Alberta Agriculture and Food are implementing a 5 year scientific evaluation in the Whelp Creek and Indianfarm watersheds.
- [Alberta Environment's Water Use Reporting System – Water Measurement Guidebook](#) – Alberta Environment's Water Use Reporting System allows licensees to report their water diversions online. The Guidebook provides a method for measuring water diversions for those licensees who do not have water meters. Data obtained will help better manage resources and establish baseline numbers against which improvements in conservation, efficiency, and productivity can be measured.

Conservation, Efficiency and Productivity Sector Planning

Water conservation, efficiency and productivity sector plans

Water for Life states that overall efficiency and productivity of water use in Alberta should improve by 30% from 2005 levels by 2015. The major sectors in Alberta that will help us achieve that goal are:

- Irrigation (agricultural)
- Municipal
- Oil and gas
- Chemical/petrochemical
- Mining/oilsands
- Power generation
- Forestry

Although not a regulated requirement, the sectors above have committed to develop a water Conservation, Efficiency and Productivity (CEP) plan by 2010 or earlier. The Alberta Water Council will soon be releasing recommendations for CEP sector planning including how sectors can ensure public participation.

Two sectors have begun developing CEP plans. The Alberta Irrigation Projects Association is developing a CEP plan for the agricultural irrigation sector and the Alberta Urban Municipalities Association is developing a plan for the municipal sector. Both plans should be complete in early 2009. Other sectors are beginning to assemble resources to develop their plans. Conservation, efficiency and productivity efforts will ensure the maximum use of existing infrastructure and will reduce new water infrastructure costs, as well as associated energy costs. Fewer chemicals to purify and treat water and wastewater will be needed. CEP will help us plan for population increases, agricultural production, industrial expansion, and continued recreation without finding new sources of water. It will decrease potential water restrictions during periods of low precipitation. In stream flow levels will be maintained for the benefit of fish, wildlife and their habitats. It will also ensure Alberta honours its agreements to Saskatchewan and Montana to maintain adequate instream flow.

Environmental Site Assessment Repository

The Environmental Site Assessment Repository is an online, searchable database that provides scientific and technical information about assessed sites throughout Alberta.

Environmental site assessments determine the quality of soil and groundwater of a site, particularly at retail gas stations and other commercial and industrial sites. A site assessment does not necessarily mean a site is, or ever was, contaminated.

Using [Alberta Registries Land Titles SPIN2](#) technology, the Environmental Site Assessment Repository allows you to search for a site by legal land description, municipal address or map. If information on a site is available, users can download, email and print relevant information and documents.

For more information, please see: www.esar.alberta.ca



Wetlands have a poor public image... Yet they are among the earth's greatest natural assets... mankind's waterlogged wealth.

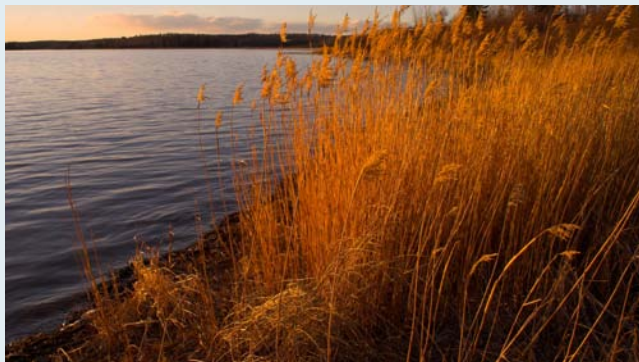
EDWARD MALTBY
Waterlogged Wealth, 1986

Riparian Setback Matrix Model

The most effective tool available for determining Riparian setbacks

Aquality, in partnership with Lac La Biche County, developed a tool known as the Riparian Setback Matrix Model, which provides a method for determining site specific, undulating riparian setbacks that can be taken as environmental reserve. This allows municipalities to maximize developable area, while still protecting the aquatic environment from pollutants. The Model can be adapted to suit many different protection goals, from wildlife habitat to flood plains and fisheries.

To find out more about how the RSMM can help you, please contact us and we would be pleased to discuss it further with you.



Aerial Videography

Aquality has been privileged to receive training in the aerial videography method of riparian assessment from one of the developers of the method. George Walker has been working closely with us on how exactly to complete the actual filming, as well as how to complete the assessments.

If you are interested in learning more about this highly effective and efficient assessment tool, please feel free to contact us at 780.757.5530 or email us at info@aquality.ca



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