March 1, 2019 via E-mail

The Honourable Catherine McKenna
Minister of Environment and Climate Change
House of Commons
Ottawa, Ontario Canada
K1A 0A6

Dear Minister McKenna:

On behalf of the Citizens Environmental Alliance I am writing this letter to you today to bring to you and your agency's attention an issue that has and will continue to affect Canadians now and into the future. That issue is the continuing unmitigated development activities of agricultural drainage and their impacts on our environment. As well of particular concern is Saskatchewan's *Agricultural Water Management Strategy*.

Firstly, who are we? The **Citizens Environmental Alliance** is a Saskatchewan not for profit organization that is "*dedicated to initiatives that mitigate the environmental effects of farmland drainage in Saskatchewan"*. Our organization consists of citizens throughout Saskatchewan and western Canada from all walks of life including civil servants, academia, students, farmers, ranchers, professional engineers, clergy and retired people. We played a significant role in raising concerns about potential impacts and the lack of an Environmental Impact Assessment for the *Quill Lakes Common Ground Diversion Project* (2017) by accessing and disseminating information withheld by the proponent relating to the project which was caused in part by illegal agricultural drainage within the watershed. This ultimately resulted in the project being withdrawn by the proponent.

Although Saskatchewan has had drainage legislation since the 1980's almost all of the drainage that has and is occurring is illegal and without any mitigation. To address this issue, the Province developed Saskatchewan's *Agricultural Water Management Strategy* that proposes, through its activities by the Water Security Agency (WSA), to license new drainage and illegal drainage on an estimated 24 million acres of agricultural land. To expedite this process WSA has adopted a sub-watershed approach to license all drainage under a single "network" license or through a legal drainage authority.

These drainage activities includes previously illegal drainage works completed and new drainage activities with no consideration for the impacts to the environment including downstream flooding, drought mitigation, groundwater, fish and wildlife habitat, species at risk, carbon sequestration, water quality degradation including contributing of fertilizers, pesticides, sedimentation and the overall accumulative effects on Canada's provincial, national and international watersheds without consultation with the public including Indigenous people.

As early as 1991 the Federal government recognized that "*The greatest single threat to wetlands historically has been drainage for agricultural purposes, accounting for 85% of total known*

conversions."[1] As you are no doubt aware there is more to this agricultural drainage issue than loss of wetlands and their function. There is a complex litany of factors that are of grave environmental concern for us and should be for you in your capacity in protecting Canada's environment. Those factors to consider that are directly under the jurisdiction of the Federal government are noted in the appendix in this letter.

As you may have been made aware, there is increasing public concern in Saskatchewan and Manitoba regarding the growing number of proposed projects of agricultural drainage. Each of these network projects themselves propose to create drainage works on tens of thousands of acres of land draining wetlands and destroying native habitat and altering Canada's water resources without any assessment of the potential impacts, without mitigation, and without any limits to the amount of drainage allowed.

The Water Security Agency, who is co-responsible for the protection of our Saskatchewan environment, lacks polices regarding environmental mitigation of agricultural drainage.

Provincial Auditor Report:

> *"Our testing of 30 drainage approval files found the Agency often considered only the local impact of the proposed drainage works when assessing drainage approval applications. For example, we found it considered the local impact the proposed drainage works would have on the stream in which the draining water would flow (i.e., point of adequate outlet), instead of looking at all drainage works approved in the area and into what body of water the draining water ultimately ends up in.*
>
> *Water quality is also important to consider, as staff should not be approving drainage works where water draining from agricultural land will reduce the water quality of the lake or river where water is being drained (e.g., increasing nutrients). By not having policies on wetland retention and water quality, the Agency increases the risk that staff may not adequately consider these aspects and approve drainage works that may negatively impact water quality and may reduce wetlands.*
>
> *We recommend that the Water Security Agency develop policies on water quality and wetland requirements to use when assessing [environmental] risks of drainage works."*[2]

The Saskatchewan government is unwilling to recognize the need for an environmental assessment of these activities as they are a proponent themselves through the *Strategy* and a co-proponent of the network drainage works in providing both legislation, organizational structures, funding and technical expertise. They have lost sight of the relationship that economic wellbeing is directly related to environmental wellbeing.

As appended to this letter is a list of factors we would like you to consider in determining whether you should designate each individual drainage network an activity and Saskatchewan's *Agricultural Water Management Strategy* as a designated activity development under the

[1] The Federal Policy on Wetland Conservation, Government of Canada, 1991
[2] Provincial Auditor of Saskatchewan 2018 Report – Volume 1

Canadian Environmental Assessment Act 2012. These include the areas of: Hydrology, Interprovincial/International Waterways, Indigenous People, Natural Ecosystems, Fisheries Habitat, Migratory Birds, Endangered Species, Climate Change and Public Concern.

As well, we also urge you and your agency to show leadership in this issue and declare the Province of Saskatchewan's *Agricultural Water Management Strategy* including the funding of agricultural drainage networks and providing technical advice, a physical activity under the *Canadian Environmental Assessment Act*. We also urge you to evaluate the *Canadian Agricultural Partnership Farm Stewardship Program Drainage Stewardship BMP* that is being used to facilitate the drainage and infilling of wetlands.

Therefore, we do hearby appeal to you, as Minister responsible for the Environmental Assessment Act 2014 pursuant to Section 14 (2), order, designate a physical activity that is not prescribed by regulations made under paragraph 84(a) as agricultural drainage is a physical activity which may cause adverse environmental effects or public concerns related to those effects.

We would appreciate a meeting with you and/or your staff to further discuss and elaborate on the issue to assist your agency in making an informed decision. Please let us know when you might be available to meet.

Sincerely submitted,

Jeff Olson
Managing Director
Citizens Environmental Alliance

Cc: The Honorable Carolyn Bennett, Minister of Crown-Indigenous Relations and Northern Affairs.
The Honourable Jonathan Wilkinson, Minister of Fisheries & Oceans
Ms. Sherri Benson, Member of Parliament, Saskatoon West
Glen McCallum, President, Métis Nation of Saskatchewan,
Chief Bobby Cameron, Federation of Sovereign Indigenous Nations
National Chief Perry Bellegarde, Assembly of First Nations
The Honorable Scott Moe, Premier of Saskatchewan
Honourable Dustin Duncan, Minister for Water Security Agency
Honorable Ryan Milie, Leader of the Opposition, Saskatchewan
The Honorable Brian Pallister, Premier of Manitoba
Honorable Rochelle Squires Minister of Sustainable Development in Manitoba
Brad Ashdown, Executive Member, Citizens Environmental Alliance
Murry Hidlebaugh, Director of Indigenous and Academia Liaison, Citizens Environmental Alliance

Attachment: WSA Networks

Appendix

Considerations of why the *Agricultural Water Management Strategy* and all network agricultural drainage proposals should be declared a physical activity requiring an environmental assessment:

Under CEAA 2012, the "environmental effects" to be considered are those in areas of federal jurisdiction as described in section 5, which are:

- effects on fish and fish habitat, shellfish and their habitat, crustaceans and their habitat, marine animals and their habitat, marine plants, and migratory birds;
- effects on federal lands;
- effects that cross provincial or international boundaries;
- effects of any changes to the environment that affect Aboriginal peoples, such as their use of lands and resources for traditional purposes; and
- changes to the environment that might result from the federal decisions as well as any associated effects on health, socio-economic conditions, matters of historical, archaeological, paleontological or architectural interest, or other matters of physical or cultural heritage.

1. Hydrology

The extensive development of surface and subsurface drainage systems to facilitate agricultural production throughout North America has significantly altered the hydrology of landscapes compared to historical conditions. Drainage has transformed nutrient and hydrologic dynamics, structure, function, quantity, and configuration of stream and wetland ecosystems.[3]

Recent efforts to quantify the impacts of illegal drainage have been undertaken by Dr. John Pomeroy with the University of Saskatchewan, Centre of Hydrology. Their research in the Smith Creek Watershed near Yorkton, Saskatchewan found that drainage made the flood of 2011 worse by increasing the volume of water by 1/3 and peak flows by 1/3 and that draining the remaining wetlands would have increased the 2011 flood peak by 78%. They also found that drainage has an even stronger impact on stream flow in normal to dry years, in which flows would increase by 200% to 300% and the yearly peak flow would increase by 150% to 350% above what would have occurred naturally.[4]

[3] *Effects of Agricultural Drainage on Aquatic Ecosystems*: An Article in Critical Reviews in Environmental Science and Technology · November 2009

[4]. 2010. Improving and Testing the Prairie Hydrological Model at Smith Creek Research Basin; Pomeroy J, Fang X, Westbrook C, Minke A, Guo X and Brown T; Centre for Hydrology, May 2014.

Saskatchewan had approximately 64.3 million agricultural acres in 2006. It has about 38.5% of the total farm area in Canada. Saskatchewan has over 2,900 km (1,800 miles) of organized drainage ditches, draining an estimated 4.5 million acres of farmland. The Water Security Agency has estimates approximately 16 million to 24 million acres of land have illegal drainage works on them and that number continues to grow every year.[5]

In Saskatchewan the *Agricultural Water Management Strategy* poses to licence these existing illegally constructed drainage works as well as any new additional drainage without any environmental impacts assessment. These drainage works will allow the conversion of hundreds of thousands of acres of native prairie to a cultivation mono-culture.

The networks individually previously identified each have their own total amount of water diversion. The expected diversion in each drainage network has been estimated to exceed the CEAA threshold of 10,000 dam^3 considering spring runoff and precipitation with the increases in effective drainage areas.

Technical Information - Blackbird Creek[6]

- Gross drainage area (GDA) – 77.9 km^2 (19,265 acres)
- Historic Effective Drainage Area (EDA) – 20.24 km^2 (5,001.4 acres) - 26% of GDA
- New Effective Drainage Area (EDA) – 71.00 km^2 (17,544.5 acres) - 91% of GDA (350% increase)

Frequency in Years	Based on Historic EDA	Based on Current EDA	Change in %
F-2	3.3 m^3/sec	7.1 m^3/sec	+215%
F-5	6.7 m^3/sec	14.3 m^3/sec	+213%
F-10	9.2 m^3/sec	19.5 m^3/sec	+211%

Technical Information – 600 Creek[7]

- Gross drainage area (GDA) – 117 km^2 (28,911 acres)
- Historic Effective Drainage Area (EDA) – 6 km^2 (1,482 acres) - 5% of GDA
- New Effective Drainage Area (EDA)* – 43 km^2 (10,625 acres) - 36% of GDA (700% increase)

(*Excluding areas of tile drainage therefore this number is actually larger but presently unknown.)

[5] Provincial Auditor Report Chapter 12 Water Security Agency – Regulating Drainage – June 2018

[6] *Blackbird Creek Network Project*; Stakeholder Engagement Session #2 presentation by Ryan Karsgaard, P. Eng, Associated Engineering, December 14, 2018

[7] *600 Creek Drainage Network Hydrology Study – Estimation of Peak Flow; p*repared for 600 Creek Water Inc. by Stantec Consulting Ltd., February 15, 2018

Frequency in Years	Based on Historic EDA	Based on Current EDA	Change in %
F-2	0.2 m^3/sec	0.7 m^3/sec	+350%
F-5	0.7 m^3/sec	3.0 m^3/sec	+428%
F-10	1.2 m^3/sec	5.1 m^3/sec	+425%

Hydrological reports for other networks are only publically available through formal *Freedom of Information* requests that have a cost of both time and money. (The transparency of the network projects will be discussed later in this document.)

The resulting change in effective drainage area will contribute and exacerbate downstream flows and floods on agricultural land, impact infrastructure and communities, and further deteriorate water quality.

The proponents and WSA have indicated that they plan to use "reducer culverts" to mitigate the peak flows. By installing small culverts in a dam the water will pond behind the dam and be released slowly compared to an open drainage ditch. Unfortunately there is no scientific hydrological information on the effectiveness of this method of flood mitigation. As well, these reducer culverts will have little effect on major flood events and downstream dams can be over topped or washed out. These culverts will not reduce the total amount of water contributed downstream as flows approved are significantly higher than what is natural.

The use of culverts is scientifically unproven to reduce major downstream flood events. . In the midst of major flood events drainage volumes need to be reduced and controlled. No where in these engineered designs are there any means by which drainage works can be closed or further reduced to ease the extent of flooding and damages downstream when they are forecast or occurring. Faced with localized flooding there are also no assurances that culvert dams will not be breached by unscrupulous landowners wanting to protect the extent of flooding on their own land. The networks proposed include both the existing drainage works and new drainage works. This further enhances agricultural crop production but also increases flow volumes and results in the elimination of both native prairie and parkland habitats.

2. Interprovincial Waterways

Provinces are primarily responsible for managing the water resources within their borders and have enacted environmental legislation related to water use and watershed management, as well as effluent discharge limits for various industrial sectors. An exception to this generalization exists in relation to the jurisdictional issue of international or interprovincial pollution, where the impacts of activities carried out in one province are experienced in another province or in another country such as the United States. The federal government is responsible for regulating such international or interprovincial effects.

Eight of the nine identified agricultural drainage networks are part of interprovincial or international waterways. (See locations of all identified networks on attached map.)

These drainage networks and their downstream contributions are:

1. **Blackbird Creek Network** – occurs in both Saskatchewan and Manitoba and outlets into the Assiniboine River near Shellmouth, Manitoba.
2. **600 Creek Network -** occurs in both Saskatchewan and Manitoba and outlets into the Souris River near Pierson, Manitoba.
3. **Atwater Network** – tributary to Kaposvar Creek a major fishery outletting near Tantallon, Saskatchewan into the Qu'Appelle River which is an inter-provincial waterway.
4. **Brooksby Network** – tributary to the Leather River outletting to the Carrot River which occurs in both Saskatchewan and Manitoba and therefore a an inter-provincial waterway.
5. **Vipond Network** — tributary of Moose Mountain Creek which outlets into the Souris River near Oxbow, Saskatchewan. (This network also contributes to an international waterway as the Souris River runs into North Dakota downstream of this location.)
6. **Wascana Block "A" Network** – tributary of the Wascana Creek which outlets to the Qu'Appelle River near Lumsden, Saskatchewan.
7. **Lang West Network** – tributary to the Moose Jaw River, which outlets to the Qu'Appelle River near Moose Jaw, Saskatchewan.
8. **Dry Lakes Network** – tributary of Moose Mountain Creek which outlets into the Souris River near Oxbow, Saskatchewan. (This network also contributes to an international waterway as the Souris River runs into North Dakota downstream of this location.)

The drainage of wetlands and adjacent uplands as well as cultivated land leads to pollution of downstream waters including phosphorus, nitrogen, pesticides, trace metals, pathogens and other emerging contaminants in the waterways.

In speaking of *Field Water Retention Structures* [another word for Saskatchewan's *reducer culverts – see Hydrology Section 1*] professor Lobb advises there are pros and cons in that they are "enhancing the 'waffle effect'", detaining and controlling release of runoff, is a practice of great interest." This may be a good idea for controlling flood waters [but] it will release P [Phosphorus] from soil into the detained waters and could cause a flush of more concentrated dissolved P into rivers and into Lake Winnipeg."[8]

A longer view assessment of agricultural drainage impacts on water quality and must be broader, beyond the traditional focus on sediments and nutrients.

A 2018 Land-Use and Water Quality study of the Qu'Appelle Watershed in Saskatchewan by the University of Saskatchewan Global Institute for Water Security found that non-point sources (not the Municipalities) were found to be the largest contributors of P and N to the Qu'Appelle River accounting for 91% of the total phosphorus and 51% of the total nitrogen. Sources of non-point nutrients include cattle, cropping practices, fertilizer application, and wetland drainage. The study concluded that the most profound / greatest reduction could come from restoring drained

[8] *Lake Winnipeg and the Management of Agricultural Land in its Watershed*, David Lobb, Professor, Department of Soil Science, Senior Research Chair, Watershed Systems Research Program, University of Manitoba
CFWF 2012: Mud, Floods & Suds, Winnipeg, Manitoba, September 22, 2012

wetlands as drainage results in larger annual discharge volumes of water downstream and sends more P and N into streams.[9]

3. Indigenous People and Federal Lands (Reserves)

Indigenous rights, as defined under the Canadian legal system, consist of a broad spectrum of legal rights possessed by Indigenous people in Canada. While the rights defined to date are not exhaustive, courts have recognized the right to occupy the land, to fish, hunt, trap, and generally use the "products" of the rivers, forests, and streams. This also includes the Indigenous right to protect both water quality and quantity, on behalf of both humans and the ecosystem.

Saskatchewan's *Agricultural Water Management Strategy* (AWMS) has initiated a significant impact on these rights without proper consultation. The provincial government through Saskatchewan Environment and the Water Security Agency have failed to adequately consult with Indigenous peoples by not providing information on the full extent of the ramifications of the *Strategy* and the individual drainage networks proposed.

Saskatchewan's legal duty to consult includes the creation of the AWMS and includes this as it is a decision that may limit or alter the quality and quantity of fish and wildlife or and the right of access to these resources and impacts to treaty rights of access to hunt able populations and fishable stocks as a result of habitat loss.

Creating a new or amended piece of legislation, regulation, policy or strategic plan that may have the effect of limiting or altering the use of Crown lands and renewable resources is also under the purview of the Federal government in order to protect Indigenous rights and thereby the honour of the crown..

In the case of **Blackbird Creek, 600 Creek, Vipond, and Atwater** these projects will contribute to downstream floodwaters affecting First Nations in Manitoba; these being but not limited to: Interlake First Nation Lake St. Martin First Nation, Little Saskatchewan, Dauphin River, Little Saskatchewan and Pinaymootang First Nations.

In the **Blackbird Creek** network, the Keeseekoose First Nation Reserve is directly impacted by illegal drainage. The drainage approval would see several sections of land drained onto their land. Their land here is used for agricultural production and also has illegal drainage that was completed by their land renters without a Band Council Resolution and the consent of the Government of Canada.

The **Brooksby** project will potentially affect the Shoal Lake Cree and Red Earth First Nations and their reserve lands in Saskatchewan.

[9] Qu'Appelle Watershed, SK Land-Use and Water Quality. Lower Qu'Appelle Watershed Stewards, Qu'Appelle Basin Research and Monitoring Committee. https://www.lqws.ca/who-we-are/quappelle-river-basin-research-and-monitoring-committee

The **Dry Lakes** project potentially affects Pheasant Rump Nakota First Nation downstream on Moose Mountain Creek.

Both the **Wascana Block A** and **Lang West** will contribute to the floodwaters of the Qu'Appelle River potentially affecting Piapot, Muscowpetung, Pasqua, Standing Buffalo, Sakimay, Cowessess, Kahkewistahaw, and Ochapowace First Nations.

These drainage networks have the potential for significant impacts to both surface and ground water used by Aboriginal peoples for drinking, cooking and personal use.

In 2018 the Pasqua First Nation took the Government of Saskatchewan to court after they bypassed an environmental impact assessment and First Nations consultations as part of a plan to move water away from flooded areas of the Quill Lakes into the Qu'Appelle River chain of lakes. Pasqua First Nations believed this could have a negative impact on the local environment and the traditional hunting, fishing and trapping rights of local First Nations. The First Nation won an out of court settlement and the project was withdrawn by the proponent.

The Crown still holds the constitutional obligation to ensure Duty to Consult an accommodate requirements are met. It is up to the Federal government's honour, commitment and obligation to protect Aboriginal rights from this significant incursion by the provincial government by having an environmental assessment being conducted on the *Agricultural Water Management Strategy* as well as the individual drainage networks proposed.

4. Natural Eco-systems

Recent studies have found that the Great Plains of Canada have lost a greater proportion of intact grassland than the Brazilian Amazon has lost rainforest.[10] Continued habitat loss is a real threat. Of all the threats to species and of all the factors endangering Canada's wildlife, the challenge is stopping habitat loss. There is no opportunity for species' recovery if their habitat is lost or is degraded. Many wildlife species rely on wetlands as they provide vital nesting and feeding grounds. When wetlands disappear, species that depend on these habitats have nowhere else to live. Some species become endangered, or no longer occur.

The Living Planet Report Canada, published in 2017, was the most comprehensive synthesis of Canadian wildlife population trends ever conducted. It showed that on average from 1970 to 2014, half of monitored vertebrate wildlife species in the study suffered population declines.[11] Of those, average decline is 83 per cent since 1970. In the prairie region grassland bird populations declined 55 per cent. The picture is also worrisome for Canada's federally protected species. Since 2002, when the Species at Risk Act became law, federally listed at-risk wildlife populations declined by 28 per cent, the report shows. Even with protections, the rate of decline for protected at-risk wildlife appears to be increasing to 2.7 per cent per year, compared with 1.7

[10] *Why Canada's Prairies are the World's Most Endangered Ecosystem*, Nature Conservancy of Canada, November 7, 2018

[11] World Wildlife Fund Living Planet Report Canada 2017: A National look at wildlife loss

per cent per year in the period 1970 to 2002. In settled areas of Saskatchewan, 70 per cent of the original wetlands are already gone.

While the Water Security Agency (WSA) Regulations may require mitigation for habitat loss, WSA is not requiring or defined what mitigation measures are required as part of the drainage approval process. In 2018 the Saskatchewan Provincial Auditor was critical in their assessment of WSA.[12] It found that WSA has limited policies around wetland retention. Wetland retention is important because wetlands provide habitat for waterfowl, insects, and aquatic animals (e.g., frogs). By not having policies on wetland retention, WSA increases the risk that staff may not adequately consider these aspects and approve drainage works that may negatively impact habitat.

As part of the drainage approval process all drainage works also require an Aquatic Habitat Protection Permit (AHPP) which is intended to prevent habitat alteration and prevent impacts aquatic organisms and Species at Risk.[13] Surprisingly the drainage approvals result in the complete loss of wetlands and the cultivation of habitat. There are no or very weak linkages to other to other Government Conservation policies like the Game Management Plan, Representative Areas Network, and Crown Land management. In the absence of a Wetland Conservation Policy WSA relies on landowners to decide what wetlands and how many wetlands will be retained or drained and cultivated. For example, WSA approved landowners draining 90% of the wetlands on their land through the Dry Lakes Drainage Network Project. If a small number of landowners object to granting permission to drain their wetlands the drainage proponents or Rural Municipalities in a given area can form a Drainage Association and expropriate the necessary land in order to construct drainage works. WSA's Regulations state that it may require mitigation for habitat loss. An effective mitigation sequence first avoids impacts, then if the impacts cannot be avoided then they are minimized. As a last resort impacts are mitigated, for example, restoring wetlands somewhere else. WSA's only mitigation requirement at present is a requirement for a flow control to slow the flow of water down to lessen flood peaks and reduce erosion and sedimentation.

5. Fisheries Habitat

Environmental threats including agricultural drainage may result in both dramatic and subtle changes to aquatic ecosystems. These disturbances and their initial effects may be subtle, local and difficult to detect, yet their long-term influence may be profound and extensive. Change in physical and chemical features of the environment (e.g. temperature, wind, pH levels) may cause change to the composition of species assemblages and to ecosystem function. In addition to their individual effects, such environmental changes may have cumulative effects on aquatic ecosystems because they interact in complex ways. Challenges in fisheries management and

[12] Saskatchewan Auditors Report 2018: Water Security Agency—Regulating Drainage Section 4.3
[13] WSA Aquatic Habitat Protection: https://www.wsask.ca/Water-Programs/Aquatic-Habitat-Protection/

habitat is in minimizing the effects of human activities and developments on aquatic habitats while promoting economic growth.[14]

The diversity of a fish community is closely related to the variety and health of habitat. The entire community of organisms in the aquatic ecosystem is important to ensure that fish populations continue to thrive for future generations.

All proposed drainage networks in Saskatchewan are tributaries to major rivers including: Assiniboine, Souris, Qu'Appelle, and Saskatchewan Rivers which are major provincial fisheries and in **ALL Cases** these drainage networks will impact on fisheries habitat. These tributaries contain fish habitat for both forage and game species mostly as important spring spawning areas. (See Inter-provincial/International waterways for locations.) Blackbird Creek in particular has been noted to contain gamefish such as pike and walleye during spring spawning.[15]

Saskatchewan landowners have been concerned regarding the identification of fish habitat on their property or in their watershed as it may lead to Fisheries and Oceans intervention in their destructive activities. Saskatchewan Environment has also been reluctant to examine the extent of fish habitat in the province. One of the few fish habitat studies completed in Saskatchewan was in the South Saskatchewan River watershed where it was found that every identified tributary of the river contained fish habitat.

The Water Security Agency has in its mandate "protect aquatic habitat" but it lacks the basic information concerning fisheries habitat impacts by agricultural drainage, issues *Aquatic Habitat Protection Permits* without requiring any information on fish habitat from the proponents, and essentially completes the permit as an appendix to the drainage licence. WSA also does not monitor any of the permits they issue and as a regulatory agency does not monitor and enforce any of their permit conditions. WSA lacks basic policies concerning the impacts to fisheries habitat in the province. Fisheries and Oceans Canada is not being consulted on any of the drainage networks present under review or licences by them.

The Water Security Agency is the agency responsible for protection aquatic habitat, including fish habitat, in Saskatchewan. WSA has not had reviewed the drainage projects with the aquatic habitat being eliminated on the creeks or the loss of aquatic habitat of the wetlands. A condition of all drainage approvals is the requirement to have an Aquatic Habitat Protection Permit (AHPP). WSA states "The primary goal of the Aquatic Habitat Protection Program is to ensure aquatic habitat is preserved and maintained at the productive level which existed prior to the development activities by: preventing temporary and permanent habitat alteration; preventing increased soil erosion and sedimentation; preventing impacts associated with construction timing and development activities on aquatic organisms and Species at Risk; preventing the discharge of chemicals, oil, gasoline and other contaminants into water; and protecting aquatic and riparian vegetation and other aquatic habitats.[16] All of the drainage networks in Saskatchewan will be

[14] Fisheries Management Plan, Saskatchewan Environment, 2010

[15] Pers Com: Email from Gary Kochanowski, Blackbird Creek Landowner, February 19, 2019

[16] WSA Aquatic Habitat Protection: https://www.wsask.ca/Water-Programs/Aquatic-Habitat-Protection/

issued AHPP's and all have significant loss of aquatic habitat as the wetlands and riparian areas are drained and cultivated annually.

Aquatic species and their habitat at risk from these network drainage projects include but is not limited to:

a) Plains Minnow (Hybognathus placitus)

b) Northern Leopard Frog (Western Boreal/Prairie populations) (Lithobates pipiens)

c) Chestnut Lamprey (Ichthyomyzon castaneus)

d) Snapping Turtle (Chelydra serpentine)

6. Migratory Bird Habitat

Close to 70% of the continent's waterfowl migrate through Saskatchewan in the midst of the Prairie Pothole Region. In some areas, there are as many as 60 breeding waterfowl pairs per square mile. Ducks, geese, cranes and large concentrations of shorebirds rely of wetlands as critical nesting and feeding areas. About one-third of North American bird species use wetlands for food, shelter, and (or) breeding so the widespread draining and altering of wetlands affects bird populations. For most wetland-dependent birds, habitat loss in breeding areas translates directly into population losses.[17] As wetlands are destroyed, some birds may move to other less suitable habitats, but reproduction tends to be lower and mortality tends to be higher. Hence, the birds that breed in these poorer quality habitats will not contribute to a sustainable population through the years

Migration is a period of great vulnerability, a time when birds experience their highest mortality rates. Finding suitable habitat along the way is paramount to survival for most species because their migration occurs in steps rather than in one fell swoop. These habitat patches, called "stopover" sites, provide migrants with appropriate cover in which to rest, refuel, and seek protection from predators and inclement weather before moving on to the next leg of the journey. A diversity of wetland community types provides essential stopover habitats for members of every bird group in Saskatchewan. Wetland habitats constitute a diverse and critically important resource that migrating birds need to maintain energy reserves as they complete their often perilous journeys to and from breeding grounds.

The availability or influence of water is a very important wetland feature to birds. It is not, however, the only feature that determines if birds will be present, how birds use the wetland, or how many kinds or numbers of birds may use the wetland. Other determining physical or biological factors include water depth and temperature, presence or absence of vegetation, patchiness or openness of vegetation, type of vegetation, foods, water chemistry, type of soils, and geographic or topographic location. This variation is removed when wetlands are drained.

[17] Wetland issues affecting waterfowl conservation in North America. Wildfowl 4:343-367 · December 2014

While the Water Security Agency (WSA) Regulations may require mitigation for habitat loss, WSA is not requiring or defined what mitigation measures are required as part of the drainage approval process. In 2018 the Saskatchewan Provincial Auditor was critical in their assessment of WSA.[18] It found that WSA has limited policies around wetland retention. Wetland retention is important because wetlands provide habitat for migrating and nesting waterfowl, shorebirds, water birds, and songbirds. By not having policies on wetland retention, WSA increases the risk that staff may not adequately consider these aspects and approve drainage works that may negatively migration and nesting success.

7. Endangered Species

In 2018 the Saskatchewan the Wildlife Act turned 20 but remains largely unchanged as it pertains to habitat protection and endangered species remains largely untouched. Experts say there's well over 50 endangered and threatened species in Saskatchewan and the main reasons for animals, fish, and plants to become endangered or threatened is due to the destruction of their natural environment, habitat, and wetlands caused by human development.

While the Water Security Agency (WSA) Regulations may require mitigation for habitat loss, to date there has been no requirement for this and there is no requirement to identify threatened or endangered species. There is also no requirement for any habitat assessment or species inventory to ensure that species of concern if present are identified. In 2018 the Saskatchewan Provincial Auditor was critical in their assessment of WSA. It found that WSA has limited policies around wetland retention. Wetland retention is important because wetlands provide habitat for endangered species. By not having policies on wetland retention, WSA increases the risk that staff may not adequately consider these aspects and approve drainage works that may negatively impact already threatened and endangered species.

COSEWIC[19] - Designations[20] - Species At Risk

Agricultural drainage either by construction of ditches or tile drainage results in the elimination of wetlands, conversion of wetlands and adjacent native habitat, riparian areas. Further encroachment by the construction and maintenance of permanent drainage channels is done by the planting of mono-culture grasses including invasive species, (smooth brome grass). Management of those drainage ditches is normally conducted with mechanical mowing or fire that does contribute to a significant continuing loss of species and ecosystem biodiversity. In the majority of cases the resulting agricultural drainage results not just alteration but in the complete loss of existing native habitat and biodiversity.

[18] Saskatchewan Auditors Report 2018: Water Security Agency—Regulating Drainage Section 4.3
[19] Committee on the Status of Endangered Wildlife in Canada 2014. COSEWIC assessment and status report
[20] http://www.sararegistry.gc.ca/search

The loss of this biodiversity through habitat loss, water quality impacts, directly or indirect effects of agricultural drainage has been identified as being the cause for many of the designated species at risk within the networks.

Designated wildlife species identified below have been identified as occurring in the referred to drainage network projects and are including but not limited to:

1. Gypsy Cuckoo Bumble Bee (Bombus bohemicus)
2. Red-headed Woodpecker (Melanerpes erythrocephalus)
3. Short-eared Owl (Asio flammeus)
4. Buffalograss (Bouteloua dactyloides)
5. Baird's Sparrow (*Ammodramus bairdii)*
6. Snapping Turtle (Chelydra serpentine)
7. Chestnut Lamprey (Ichthyomyzon castaneus)
8. Western Grebe (Aechmophorus occidentalis)
9. Horned Grebe (Western population) (Podiceps auritus)
10. Loggerhead Shrike (Prairie subspecies) (Lanius ludovicianus excubitorides)
11. Northern Leopard Frog (Western Boreal/Prairie populations) (Lithobates pipiens)
12. Plains Minnow (Hybognathus placitus)
13. Yellow-banded Bumble Bee (Bombus terricola)

8. Climate Change

Carbon dioxide and other greenhouse gas emissions contribute to more frequent and extreme weather events across Canada. These weather events are devastating and result in billions of dollars in property damages, reduced crop yields and increased nutrient runoff that pollutes our lakes and rivers.

Prairie wetlands play an important role in our climate change strategy because of the amount of carbon sequestered in wetlands, and the recognition that they are a significant source of emissions when converted to cropland.[21]

Wetlands are optimum natural environments for sequestering and storing carbon from the atmosphere.[22] Saskatchewan's remaining wetlands store approximately 1.3 million tonnes of

[21] Ducks Unlimited Canada - Wetlands are Canada's Climate Change Defenders

[22] Wetlands, Flood Control and Ecosystem Services in the Smith Creek Drainage Basin: A Case Study in Saskatchewan, Canada

carbon.[23] This amount of carbon is roughly the equivalent of seven times the total carbon emitted by the vehicles driven in Canada. Draining 15 acres of wetland can result in a release of an amount of greenhouse gas that is equivalent to the amount of carbon sequestered in one year by 5,000 acres of crop farmed with a "no-till" method. In addition, wetlands store nitrous oxide, a strong greenhouse gas.

Increases in wetland drainage as a result of Saskatchewan's new drainage policies will release significant amounts of carbon and at present these impacts are not being recognized or mitigated for.

9. Public Concern / Consultation

An Environmental Impact Assessment (EIA) is a planning and decision-making process that evaluates the potential "environmental impacts" for the betterment of the public. Provincial and Federal Governments both have a legal obligation to implement EIA's for developments and activities as defined in their legislation. The Acts are however not always exhaustive about the types of plans and programs that must be assessed so determining the need for an environmental assessment is often open to interpretation by the provincial ministries and agencies that propose the plan.

The public are affected by developments in their daily lives. When it comes to the fish, wildlife, and ecosystems that are directly affected by development they do not have a voice to speak for them, so it is up to concerned citizens to take on that role. For these reason, Public Consultation is one of the cornerstones of the EIA process because widespread public concern for potential environmental changes is one of the criteria used to determine if an EIA is required. The public can play an important role in identifying potential impacts, assessing their significance, and evaluating the advantages and disadvantages of a project or plan.[24] In Saskatchewan the First Nation and Métis Consultation Policy Framework establishes the province's policy on consultation with First Nations and Métis communities.

The proponents and provincial agencies involved have not yet commenced their legal *Duty to Consult* Indigenous people and it is unknown if they intent to before licensing the project and commencing construction. The proponent has failed to publicly release even the basic information regarding the actual proposals. Requests under the Saskatchewan *Freedom of Information Act* for the documents used to determine that the project was not a "development" under the *Saskatchewan Environmental Assessment Act* have not been disclosed by the proponent, Saskatchewan Environment or the Water Security Agency. The proponent's and provincial government's lack of disclosure and transparency as well as a failure to consult Indigenous people and the general public has resulted in widespread public concern regarding the potential environmental effects of the project. (See attached map of network areas for locations.) There is no transparency in these drainage networks and, in fact, they are being conducted for the most part in secret. The Saskatchewan Water Security Agency is an advocate

[23] Pers Com: Email from Dr. Pascal Badiou, Institute for Waterfowl and Wetland Research - Ducks Unlimited Canada.

[24] http://publications.gov.sk.ca/documents/66/89131-EnvironmentalAssessmentProcessGuidelines.pdf

of this secrecy in order to further their agencies interests and not that of the people of Saskatchewan or Canada.

At an early stage in the EIA, the proponent should undertake a program of public involvement to identify issues that the public feel should be addressed. However, public participation is at the governments' discretion, and without a clear criteria or an independent body to ensure objectivity there are minimal assurance that the process is effective in preventing and/or mitigating the negative environmental impacts of projects. Experts have information but they often are not the ones impacted.

The common levels of public participation are: inform, consult, involve, and collaborate. Under the *Canadian Environmental Assessment Act*, simply informing the public or providing access to information does not constitute public participation. In other words, the Act distinguishes between informing and actively soliciting public input into the EA process by consulting, involving or collaborating with the interested parties.

The proponent should actively solicit input from the public in the area of the proposed project, and other individuals or groups that may have an interest, utilizing their traditional and local environmental knowledge where appropriate. These groups might include landowners, community associations, municipal governments, First Nations and Métis communities, regional planning agencies, and special interest groups concerned with economic development, social change, environmental protection or resource management matters.

Identifying and documenting the environmental effects of a proposed project and determining the need to eliminate or minimize (mitigate) the adverse effects all assist the public and the proponent in ensuring the development occurs properly. However without public consultation or even notification it can be impossible to know who will be impacted or the risks associated with a development and how. Substantial evidence indicates that public participation is more likely to improve than to undermine the quality of decisions.[25] Public participation also increases the legitimacy of agency decisions and builds citizens' knowledge of the scientific aspects of environmental issues assisting the effectiveness and efficiency of implementation.

The Water Security Agency and additional proponents have announced further drainage works. These include: Cupar Creek South, Cupar Creek North, Stoney Creek, Wascana Creek, Wascana "B" & "C", Bratt's Lake and other networks presently unnamed. These networks will further exacerbate the harm by agricultural drainage and the accumulative effects will be devastating on our environment, people and future generations who will have to deal with this issue if it is not resolved now. This is similar to the Climate Change issue with reduction of use of fossil fuels as a cornerstone of the solution but with naysayers who out of self-interest do not want to address the issue.

I would also mention that Federal Funding under the *Canadian Agricultural Partnership – Farm Stewardship Program – Multi-Producer Water Management BMP* is proposed already by the

[25] http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12434

Blackbird Creek Network ("$300K is being provided."[26]) and has been already applied for by the Dry Lakes Network. This Federally funded program is posed to contribute millions of dollars to these agricultural drainage networks, again without any environmental assessment.

I would also mention that there has been a Federal E-Petition initiated to further see that an environmental assessment is conducted on the *Agricultural Water Management Strategy* as well as the known drainage networks presently in process.

The public is concerned about the impacts of drainage.[27] Despite this however the public receives very little to no information on drainage projects being developed or the impacts to water quantity, quality or habitat. Without informing and actively soliciting public input the public, including Indigenous peoples, are in effect silenced. One recent example of this in Saskatchewan was the proposed Quill Lakes Drainage Diversion Project. The initial project in 2015 was scraped by the Province following downstream public concern. The project was later resurrected in 2017 and the Province decided that an EIA was not required, citing a lack of public concern despite public outcry's and petitions with thousands of signatures. Clearly, the Public is concerned about wetland loss and its impacts and therefore needs to be consulted on agricultural drainage projects being developed in Saskatchewan.

Organizations that have an interest in this issue and that will be receiving a copy of this letter include:

1. Saskatchewan Environmental Society
2. Saskatchewan Association for Water Sustainability
3. Saskatoon Wildlife Federation
4. Last Mountain Lake Watershed Stewards
5. Ratepayers Against Illegal Drainage
6. Nature Saskatchewan
7. Saskatchewan Wildlife Federation
8. Calling Lakes Eco-Museum
9. Saskatchewan Association of Watershed Stewards
10. Saskatchewan Association for Environmental Law
11. Regional Center of Expertise on Education for Sustainable Development - Saskatchewan
12. Provincial Association of Resort Communities of Saskatchewan
13. Assiniboine River Basin Initiative
14. Assiniboine Valley Ag Producers
15. Ducks Unlimited Canada - Saskatchewan
16. Ducks Unlimited Canada - Manitoba
17. Redberry Lake Biosphere Reserve
18. Lake Winnipeg Foundation
19. Council of Canadians
20. Canadian Freshwater Alliance
21. Canadian Wildlife Federation

[26] Blackbird Creek Landowner Meeting, in Wroxton, Saskatchewan – December 14, 2018
[27] Insightrix Research Inc.: Call to Action – Findings from farmland drainage roundtable. Saskatoon, Sk June 2018

22. Manitoba EcoNetwork
23. World Wildlife Fund
24. Sierra Club - Canada
25. David Suzuki Foundation