



Alberta Surface Water Body Aggregate Policy 2011 *Flawed Process and Outcome*

Documents and correspondence obtained by private citizens in a Freedom of Information and Protection of Privacy (FOIP) request reveal that Alberta's current internal *Surface Water Body Aggregate Policy* was approved in January 2011 without adequate scientific input or public consultation.

The Aggregate Policy has never been made available to the public and the process in which it was developed weakened environmental protection and represents a serious failure on behalf of the government to represent the public interest. Alberta Wilderness Association (AWA) believes that in order to protect Alberta's vital water resources, **aggregate extraction must not be allowed within the 1:100 year floodplain zone**. AWA strongly requests a policy revision, with a transparent process, consideration of best available scientific information on project and cumulative impacts, and meaningful public consultation.

The current policy has weakened water resource protection by allowing aggregate (sand and gravel) mining operations to be approved in the 1:100 year floodplain of rivers. The policy makes a false distinction between 'protecting' the active channel of a stream and allowing extraction in the 'non-active' channel in its floodplain. It is basic, decades-old scientific knowledge that an integral part of a river is the shallow connected groundwater in the floodplain beyond its active channel, and that land use affecting the river-connected groundwater affects the river (Figure 1).

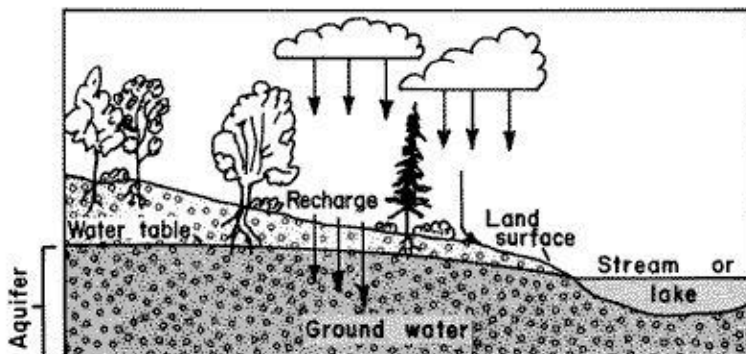


Figure 1. The river is connected to groundwater in the floodplain beyond what is visible on the surface. Choices on land uses within the floodplain affect the river. Source: U.S. Geological Survey 1993.

Floodplain gravel mining poses significant and long lasting environmental risks to local water quality and groundwater flow, including:

- decreased groundwater supply to local water bodies and landowner wells
- increased risk of pollutants entering water bodies from flooded gravel pits
- lower dissolved oxygen level and higher water temperatures from interrupted groundwater/surface-water connections
- increased risk of sedimentation in rivers

Many of these impacts would harm Alberta's native at-risk fish populations. Degraded river corridor habitat also affects many other wildlife species, including migratory birds, amphibians and mammals.





A brief timeline of the change in practices and recommendations surrounding sand and gravel mining is outlined in the table below:

Date	Group	Position on sand and gravel mining
Policy Prior to 2011	Government of Alberta staff and the Department of Fisheries and Oceans	Rejected new applications for sand and gravel mines within active river channels and the 1:100 year floodplain zone.
February 2009 - May 2010	Joint Technical Issues Working Group (JTIWG)	Recommended no mining activities within the 'active channel' of water courses, defined as area between the ordinary high water mark on each bank (often considered 1:2 year flood flow level). Recognized negative impacts of mining in the 1:100 year floodplain. Recognized the need for a formal gravel mining policy that considered the broader river valley area outside the active channel, including public, conservation groups and industry input.
January 2011 - Present New Policy	Water Body Aggregate Extraction Policy Committee	Sand and gravel mining in the active channel is not permitted. However, the definition of active channel is narrowed to allow mining in unvegetated areas between the ordinary high water banks. Additionally, the policy reversed the moratorium on new operations in the 1:100 year floodplain

Policy Prior to 2011

FOIP documents reveal that prior to the approval of the *Surface Water Body Aggregate Policy* in 2011, there was a working understanding among provincial regulatory agencies that they would reject new applications for aggregate extraction activities within active river channels and the 1:100 year floodplain zone. Federally, under the *Fisheries Act*, the Department of Fisheries and Oceans (DFO) routinely rejected applications which would result in harmful immitigable alteration of the aquatic environment under Section 35(1). Provincial officials had made progress relocating some sand and gravel operations farther from rivers. In 2000, Fish and Wildlife officers and scientists opposed attempts to develop an interim Aggregate Extraction Policy which would allow aggregate mining within the 1:100 year floodplain zone, stating it would send out a confusing and counterproductive message, and would allow the continuation of damage to the aquatic environment.¹

¹ From March 2000: "Fisheries management in Rocky Mountain House has considered the matter of an interim policy of "no extraction in active stream channels except in extenuating circumstances" and unfortunately it is not possible for us to support it..... Further, as we have indicated previously, we have made considerable progress in having several major operators relocate their activities out of the North Saskatchewan River over the past year. To consider an interim policy that would allow a relaxation on the position taken in those and other cases to date would send out a confusing and counterproductive message and would allow the continuation of damage to the aquatic environment."





Joint Technical Issues Working Group (JTIWG)

From February 2009 to May 2010, JTIWG undertook a review of sand and gravel mining issues and policy. The JTIWG - Joint Technical Issues Working Group - was a pre-existing group formed to develop common approaches and understanding of high priority technical issues related to fish habitat management. Co-chaired by an Alberta Fish and Wildlife aquatics biologist, its membership included a federal Fisheries and Oceans representative and several Alberta government ministries: Sustainable Resource Development (SRD) (Fish and Wildlife, Lands, and Forestry Divisions), Alberta Environment (including Water Act and Water Policy sections), and Alberta Transportation.

JTIWG's defined scope was only the "active" channel of flowing watercourses; however this was defined as the area lying between the ordinary high water mark on each bank, including vegetated areas, and included in-channel features like islands and bars that are flooded on a regular basis. This is often considered the 1:2 year flood flow return level. Because the 2011 policy approved mining within significant parts of this zone, the risks outlined by JTIWG are very relevant.

JTIWG noted groundwater well risks from active channel mining due to lowering the river-connected groundwater table: "lowering of the alluvial [river-connected] water table results directly in loss of groundwater storage. In some cases, wells can be lowered and water pumped from greater depths, increasing water costs significantly."

JTIWG noted harmful fish habitat impacts: "It is clear from the literature on impacts from instream gravel mining that the mining of aggregate from within the active stream channel can have significant, widespread and long lasting impacts on the aquatic environment, including fish and fish habitat." Regarding cumulative effects, they noted that "the most severe effects of instream gravel mining may be considered as cumulative because they may become obvious only over time and extend beyond the limits of the mine site itself."

JTIWG's recommendation in May 2010 was as follows:

It is therefore the recommendation of the JTIWG that there continue to be no aggregate mining activities within the active channel of watercourses, and the current approach of not accepting new applications for commercial aggregate extraction projects be located within the "active" stream channel be continued indefinitely." [emphasis in original]

JTIWG also recommended the development of a formal gravel mining policy that considered the broader river valley area outside the active channel, including public, conservation groups and industry input.

Sand and Gravel Policy Committee is Created

According to FOIP documents, in February 2010 a water body aggregate extraction policy committee was established at the direction of the Environment Minister, concurrent with JTIWG's aggregate mining review. The policy committee was directed to make "quick progress" and include only select external





stakeholders. The committee included representatives of the Alberta Association of Municipal Districts & Counties, Alberta Sand and Gravel Association, Alberta Transportation and Alberta Environment.

The initial principles drafted by the committee state that "there is recognition that in active water channels the environmental detriment is too great but outside of water channels gravel extraction is an important potential economic opportunity." This statement ignored the standard approach by the Fish and Wildlife department to **not accept applications** in the 1:100 floodplain zone, and was a substantial weakening of environmental standards.

In a March 2010 update, an Assistant Deputy Minister in Alberta Environment gave a progress report to the Environment Minister for a policy "to develop a province-level policy direction for the approval of aggregate extraction from gravel bars and floodplains of water courses in the province."

Throughout the process, concerns raised by the department of Sustainable Resource Development (SRD), especially Fish and Wildlife officers, were not addressed. SRD initially declined involvement in the policy, citing that "this policy initiative warrants a more formal approach in its initiation given we are addressing a larger policy issue around land use of provincial and private land". They also attempted to keep the ecological impacts of floodplain mining in view, and repeatedly identified the need to acknowledge that aggregate extraction in non-active areas of water bodies can have significant effects on wildlife and wildlife habitat.

Despite these efforts, consideration of project and cumulative environmental impacts were omitted and in subsequent drafts of the policy, environmental protection became weaker:

- Initial drafts of the policy stated DFO recommends against water body extraction in general (including in the floodplain), and that the new policy should err on the side of caution. This comment was removed from later versions.
- The policy shifted its focus away from all water body aggregate extraction and focused only on surface water body aggregate extraction.
- The requirement for operators to complete mandatory risk assessments for non-active areas of a surface water body (which would consider impacts to wetlands, groundwater, potential flood risk, as well as impacts to fish and wildlife) was removed just before the final version. Only "pre-assessments" were required to determine if a more formal risk-assessment is necessary.
- The definition of active channel was weakened significantly to only include those parts of the bed and banks of a water body that are without terrestrial vegetation. This was a significant weakening of the JTIWG approach that considered the active channel as lying between the ordinary high water mark on each bank, whether vegetated or not
- The final policy states that "aggregate extraction in any active channel of a surface water body will have adverse environmental impacts" and will not be authorized. However, it does permit aggregate mining in non-active areas of a surface water body. According to the narrow definitions chosen for the policy, this would reverse the de facto moratorium on new operations in the 1:100 year floodplain and would even include parts of the 1:2 year flood flow return level.





Conclusion

For more than 20 years, government biologists have consistently raised concerns regarding the detrimental impacts of aggregate mining in the 1:100 year floodplain of water courses. Biologists additionally recommended that the definition of the active river channel be clarified, as there were indications that it should contain the entire 1:100 year floodplain, essentially the entire area where the river may flow. As a provincial biologist noted in April 2009, even back in the 1980's "people were unwilling to designate what was the active river channel and some operations "outside" the channel were subsequently flooded when high flows occurred. Sometimes these resulted in long term alterations of the river channel." "Regardless of natural subregion, riparian floodplains always represent areas of relatively high biodiversity, and this is reflected in the wildlife associated with these areas. [...]Even where aggregate projects are outside the channel, wildlife staff have concerns and would need involvement."

The internal *Surface Water Body Aggregate Policy* approved in 2011 significantly eroded environmental protection by allowing gravel mining to occur in the 1:100 year floodplain of rivers, where previously gravel mining was not permitted, and excluded mandatory consideration of impacts to aquifers, wetlands and wildlife. It also narrowed the definition of 'active channel' to allow mining in unvegetated areas within the ordinary high water mark on each bank, which had previously been considered part of the active channel. FOIP documents reveal that it did so in a flawed process that ignored expert scientific advice, unfairly privileged industry stakeholders, and excluded the public.

