Aggregate Extraction in Haliburton County:

A preliminary investigation into the rehabilitation of regional pits and quarries

Prepared for: Environment Haliburton (EH!)

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Foreword

This report has been generated for the Haliburton based interest group Environment Haliburton (EH!) as an academic research project. Research efforts have been facilitated by Trent University and the U-Links Center for Community Based Research. Focus of this research undertaking is on the state and location of active and inactive pits and quarries located within Haliburton County and their associated environmental impacts. There are two reports to be generated; this being the first will outline the state of aggregate extraction within the County. Specifically, this report investigates provincial and municipal policies of aggregate extraction and how it relates to the regional environment. The second report speaks to management practices and rehabilitation of aggregate extraction sites and its significance to the regional environment.

Introduction

Due to geographical limitations of regulatory regimes regarding aggregate resources in Ontario Haliburton County is vulnerable to inadequate ecological stewardship. The Aggregate Resources Act (ARA) controls and regulates aggregate operations on Crown and select private lands. However, this regulatory tool is limited by both geographic and proprietary specifications. Alternate municipal policy has been generated to address the potential for conflicting development strategies and adverse impacts on the environment. However, the regulatory tools of the provincial and municipal authorities that outline land-use planning are for the most part analogous.
Particularly, the Provincial Policy Statement (PPS) outlines the province of Ontario’s interests in land-use and development. Municipal and local official plans regard the PPS as a guideline for content and are not obligated to augment. Furthermore, although these management tools address the issue of responsible land stewardship its enforcement is lacking.

Within Haliburton County the lack of adherence to policy is apparent. Haliburton is not designated as a region governed by the Province and associated aggregate extraction policies. Consequently, management of such operations are somewhat contradictory to that specified in the ARA; particularly, in regards to rehabilitation. Aggregate operations failing to rehabilitate, either progressively and/or finally, is rampant in Ontario and Haliburton County. Altering of the landscape and degradation of ecological function is a consequence of aggregate extraction, especially when rehabilitation is not performed. Thus, given the environmental characteristics (e.g. surface water and soil depth) of Haliburton County these operations are capable of degrading such characteristics and their associated functions.

Following is an overview of the state of aggregate operations in Haliburton County. Included is relevant provincial and municipal policy, status and type of operations, relative location of active and inactive sites, and potential environmental impacts. The desired objective of this investigation is to identify the un-rehabilitated aggregate operations within the region and the associated environmental stressors. Awareness of these stressors is paramount in the returning of ecological function and integrity to the Haliburton County natural environment.
**Policy / Regulation**

Historically governing the extraction of aggregates in Ontario was the Pits and Quarries Control Act, which has been succeeded by the Aggregate Resources Act (ARA). As previously mentioned the ARA is only applicable to private lands in certain regions of the province. Subsequently, the majority of Ontario including Haliburton is not within that region of regulation. In lieu of the ARA the province makes known their standpoint on planning and development through the Provincial Policy Statement (PPS). Thus, the PPS specifies proper land stewardship within Haliburton County and the entire province of Ontario. This regulatory tool is enforced under section 3 of the Planning Act and addresses planning and development issues, which encapsulates a broad range of land-uses and ecosystems. Likewise, municipalities and regional governments generate policy regarding social, economic, and environmental objectives for select land-uses.

The shortcomings of the ARA and the provinces broad approach to aggregate extraction management are described below. Furthermore, policy specifications relevant to licensing and particularly rehabilitation are investigated.

**Aggregate Resources Act**

Being implemented on January 1st 1990 the ARA presently manages and regulates aggregate operations in select regions of the province. Those regions under governance of the ARA have obligations to rehabilitation of sites and abatement of adverse environmental impacts. Ontario’s Ministry of Natural Resources (MNR) is the regulating authority of ARA policy within the region of designation. Unfortunately, MNR enforcement of site rehabilitation and abatement of environmental degradation also is
limited to this region. However, even within the designated region of ARA governance
the enforcement of progressive and final rehabilitation only applies to extraction
operation that have obtained licensing or permitting since the introduction of the ARA
(i.e. January 1\textsuperscript{st}, 1990). As such, relatively old extraction sites whether active or inactive
are not obligated to rehabilitate unless specified otherwise. The province has addressed
the issue of non-rehabilitation by establishing a trust, which provides funding for the
rehabilitation of abandoned aggregate extraction sites. Even still, as demonstrated here
within the ARA and associated management are ineffective in the restoration to and
protection of ecosystem integrity.

The ARA classifies aggregates extraction sites as either pits or quarries. The
difference is between unconsolidated and consolidated material extraction, respectively.
As well there is a subtle difference between aggregate extraction licenses and permits;
primarily the difference lies in the ownership of the land from which aggregate is being
extracted. Particularly, a permit pertains to the extraction of aggregates from Crown
land, where either public personnel or private citizens can be the operator of the
extraction process. Conversely, application for an aggregate extraction license is
required for extraction from privately owned land. Furthermore, the requirements of
licenses are only applicable to privately owned properties that are located within the area
designated as being subject to said regulations.

These designated areas are generally located in the south of the province.
Although, there are various exceptions, particularly for regions containing substantially
populated settlements. Figure 1 depicts central, southern, and eastern Ontario indicating
the region governed by the ARA. Notably, only Crown lands located in the area not regulated by the ARA are subject to its specifications.

![Map of Ontario designated areas](image)

Figure 1 – Areas of Ontario designated under the Aggregate Resources Act, which is enforced by regional jurisdictions of the Ministry of Natural Resources. (Source: MNR, 2004)

Stipulations to aggregate extraction licenses are in regards to the amount or weight of aggregate removed on an annual basis. The ARA segregates licenses into two classes, class A and class B, which respectively allow for the removal of more than and less than 20,000 tonnes of aggregate annually. Conspicuously, there are no limitations to the amount of aggregate that can be removed or area that can be excavated under the specifications of a permit. Given that permits are issued for extraction from Crown land this allows for an unfettered amount of resources to be exploited. Of course these sites
are to receive rehabilitation but even with progressive rehabilitation the area affected
does not regenerate at the same rate it is despoiled.

Traditionally not all extraction operations were required to include detailed
rehabilitation plans into the application process. As a result, neither financing nor
feasability of rehabilitaion efforts are readily available for these locations. Conversely, the
ARA presently requires license and permit applications to include detailed planning of
and financial contributions to rehabilitation of the area to be mined. These financial
contributions are in the form of security and special payments, while a portion of the
application fee is also diverted to a specified trust. All moneys contributed to
rehabilitation is collectively known as the Aggregate Resources Trust (ART). Pits and
quarries for which a licence or permit was never granted at any time after December 31,
1989 is considered to be abandoned. It is these “abandoned” operations that are eligible
for funding from the ARA trust fund to investigate and rehabilitate the degraded area.

**Provincial Policy Statement**

The new Provincial Policy Statement (PPS) came into effect on March 1, 2005,
and is issued under the authority of Section 3 of the Planning Act. The PPS outlines the
provincial standpoint related to land use planning and development. Specifically, it
provides a protocol that promotes strong communities, economy, and a healthy
environment. Likewise, local policies (i.e. Official Plans and Strategies) regarding
matters of municipal interest should complement the PPS framework. Both provincial
and municipal policy should contribute to the conservation of land and resources, while
avoiding costly remedial measures and undermining stated economic and environmental principles.

Section 2.2.1 of the PPS states that planning authorities shall protect, improve, or restore water quality and quantity within the province of Ontario. This is proposed to be accomplished by: ecologically planning at the watershed scale; minimizing potential negative impacts; identifying areas that are necessary for the ecological and hydrological integrity; implementing necessary restrictions on development and site alteration to promote efficient and sustainable water conservation and water quality; and ensuring contaminant loads are managed by maintaining or increasing the extent of vegetative and pervious surfaces. Furthermore, section 2.5.2.2 of the PPS states that extraction of aggregate resources shall be undertaken in a manner that minimizes environmental impacts. Paralleling this statement is section 2.5.3, which requires the adoption of ARA requirements regarding rehabilitation to those areas not located within the designated region(s). Although the PPS and its significance is commendable the specifications listed above are only effective when enforced.

The PPS stipulates that aggregate resources require protection from incompatible development activities and encourages its conservation and longevity. That is, establishment of alternate land-uses, in areas endowed with aggregate resources, shall only be permitted if the proposed land-use serves a greater long-term public interest. Speculatively, the proper management and preservation of Haliburton County natural ecosystem structure and function would better serve the public interest both immediately and long-term. However, without the enforcement of these ideals and implementation
processes to minimize environmental impacts this policy is nothing more than lip service to appease those concerned with such matters.

**Haliburton County**

The County of Haliburton is located in south-central Ontario. This region is conducive to forestry and mining operations, while also providing a beautiful landscape that is attractive for living and recreational activities. In addition to being aesthetically appealing, Haliburton County contains a large expanse of ecologically significant areas. Particularly, the county contains approximately 1690 ha of Areas of Natural and Scientific Interest (ANSI). Notably, approximately 93% of these significant areas are located on Crown land and the remainder is privately owned. These areas are illustrated in Appendix 2 (Areas of Natural and Scientific Interest in Haliburton County), while parts of Haliburton County that are protected from substantial development are depicted in Appendix 3 (Protected Areas Network in Haliburton County). It is no surprise that there is overlap between these two designations. However, what is surprising is the relative location of aggregate extraction operations within the County to these ecological assets. Appendix 1 (Relative Location of Pits and Quarries in Haliburton County) portrays the Townships and pits and quarries with the county.

Regional and municipal governments, which oversee the planning and development of lands, are responsible for proper implementation of and adherence to policy. Below is an overview of the County of Haliburton Official Plan (CHOP) and The County of Haliburton Community-Based Strategic Plan (CBSP) and their commitment to
responsible land stewardship. Further provided are specifications on extraction operations within the county, rehabilitation of these operations, and their potential to influence ecosystems.

**Official Plan**

County of Haliburton Official Plan (CHOP) is a guideline for, and in part developed by, all levels of government, organizations, and individuals within the county. The CHOP was developed in 2005 as specified necessary by section 14 (2) of the Planning Act (1990) to address land-use issues, which mirror community values and adhere to standards outlined in the Provincial Policy Statement (PPS). CHOPs vision statement indicates the main objectives of county operations and expresses the desired state of the environment, economy, and social community. Particularly, relevant to the scope of this report the vision statement conveys the goal of “a sustainable natural environment” and the need to “maintain environmental integrity” while promoting diversified economic activities. As well, section 3.3 proposes implementation projects such as the inventory and restoration of aggregate deposits and operations, respectively; while implementation proposals outlined in the CHOP are designed to facilitate these goals.

According to the CHOP provincially and locally significant areas are to be identified and maintained as such, while locales providing aggregate resources are also to be identified and protected from incompatible uses. These criteria have the potential to be conflicting, where protection of aggregate resources may supersede environmental integrity if ecological significance is not identified. Additionally, municipal zoning by-
laws can allow the use of significant and sensitive lands for operations incompatible to that of its ecological function. Given that only approximately 0.4% of the land within Haliburton is eligible for protection from development (Appendix 2) it would be expected that the CHOP goals expressed above and aggregate operations would not conflict. That is, covering well over 400,000 ha Haliburton offers ample opportunity for aggregate extraction to occur without intrusion of the areas specified in Appendices 2 and 3.

Even though the Haliburton region is not liable to ARA regulations section 2.2.3.3 of the CHOP entails that development and extraction of sand, gravel, and stone deposits shall incorporate rehabilitation plans. Thus, responsible land stewardship is promoted through this legal document even if policies are not enforced. Again, adherence to ARA regulations is enforced on Crown lands but not private lands, and therefore could potentially influence the locations chosen for harvesting of resources. Furthermore, section 2.2.3.12 of the CHOP states the County’s intent to convert existing Crown land to privately owned and operated property. Given this intent and the lack of enforcement regarding aggregate operations subsequent deleterious environmental effects are possible. As previously stated, groups and individuals within the County have developed the CHOP; where the implementation, monitoring, and evaluation of the criteria within the official plan are specified. Therefore, responsible land stewardship is articulated to be collectively desired through this document and should also be communally enforced. Unfortunately, this does not appear to be the case. Instead the resultant stewardship scheme seems to be reflective of select citizens priorities.
**Strategic Plan**

The Community-Based Strategic Plan for Haliburton County was developed in September of 1997 by The Haliburton Planning Committee and Econotrends Ltd. Importantly, the content of this plan was the result of public consultations and County Council participation. Contained within the Community-Based Strategic Plan (CBSP) is a vision statement, objectives, and recommendations for initiatives and associated time frames.

Haliburton’s CBSP has echoed the vision statement of the CHOP; however, the CBSP recognizes the disregard of specifications within the CHOP. In particular, the community has indicated that environmental protection and noise pollution is regarded as a ‘weakness’ of the county. Furthermore, as indicated above the community of Haliburton recognizes that there is a lack of county and municipal government action. Thus, given these weaknesses and concerns of the community objectives and recommendations have been formulated. Having relevance to aggregate extraction, a recommendation to identify activities and resources in the county was expressed. Associated with this recommendation is the objective to remedy the problems associated with management, use, and protection of the environment and its resources. The time frame for this initiative was short, where endorsement of the vision statement was to be allowed.

Given that the CHOP was developed approximately eight years after the original CBSP and that they share a common vision statement the time frame allotted for the above stated objective has elapsed. Unfortunately, the CBSP further articulates the community desire to be responsible land stewards but also validates that these desires are
not uniform throughout the county. While representatives of the Haliburton community have expressed their concerns and requests regarding environmental and resource issues, aggregate operations continue to function impervious to this outcry.

Aggregate Operations

By definition pits and quarries are lands above or below water from which respectively unconsolidated and consolidated aggregate is being or has been excavated, and has not been rehabilitated (ARA, 1990). Thus, given the physical characteristics (eg. hydraulic conductivity) of unconsolidated aggregates their extraction could be speculated to be environmentally disadvantageous. Likewise, the extraction of both consolidated and unconsolidated aggregates results in the devastation of immediate and regional ecological function. Furthermore, the location of these operations to water bodies and groundwater recharge/discharge areas could degrade environmental integrity. Regardless of rehabilitation efforts the natural characteristics and processes of an area mined for aggregate resources is temporarily, or even permanently, altered.

Presently within Haliburton County there are approximately 380 pits and quarries, which covers approximately 440 ha. According to the Natural Resources Values Information System (NRVIS) only 38 of these pits are active, 28 are inactive, and the remainder has unknown activity. Notably, there are only 4 quarries covering approximately 95 ha, all of which are presently active. Table 1 contains the relative amount of pits and quarries in Haliburton County according to Township boundaries.
Table 1 – Known present aggregate operations within Townships of Haliburton County (Source: NRVIS)

<table>
<thead>
<tr>
<th>Township</th>
<th>Pits and Quarries</th>
<th>Relative Amount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anson</td>
<td>8</td>
<td>2.1</td>
</tr>
<tr>
<td>Bruton</td>
<td>7</td>
<td>1.8</td>
</tr>
<tr>
<td>Cardiff</td>
<td>62</td>
<td>16.3</td>
</tr>
<tr>
<td>Clyde</td>
<td>13</td>
<td>3.4</td>
</tr>
<tr>
<td>Dudley</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>Dysart</td>
<td>31</td>
<td>8.2</td>
</tr>
<tr>
<td>Eyre</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>Guilford</td>
<td>23</td>
<td>6.1</td>
</tr>
<tr>
<td>Glamorgan</td>
<td>7</td>
<td>1.8</td>
</tr>
<tr>
<td>Harburn</td>
<td>15</td>
<td>3.9</td>
</tr>
<tr>
<td>Harcourt</td>
<td>14</td>
<td>3.7</td>
</tr>
<tr>
<td>Havelock</td>
<td>8</td>
<td>2.1</td>
</tr>
<tr>
<td>Hindon</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Lawrence</td>
<td>12</td>
<td>3.2</td>
</tr>
<tr>
<td>Livingston</td>
<td>12</td>
<td>3.2</td>
</tr>
<tr>
<td>Lutterworth</td>
<td>23</td>
<td>6.1</td>
</tr>
<tr>
<td>McClintock</td>
<td>16</td>
<td>4.2</td>
</tr>
<tr>
<td>Minden</td>
<td>33</td>
<td>8.7</td>
</tr>
<tr>
<td>Monmouth</td>
<td>11</td>
<td>2.9</td>
</tr>
<tr>
<td>Nightingale</td>
<td>15</td>
<td>3.9</td>
</tr>
<tr>
<td>Sherborne</td>
<td>7</td>
<td>1.8</td>
</tr>
<tr>
<td>Snowdon</td>
<td>32</td>
<td>8.4</td>
</tr>
<tr>
<td>Stanhope</td>
<td>21</td>
<td>5.5</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>380</strong></td>
</tr>
<tr>
<td><strong>Total Percentage</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Appendix 1 illustrates the relative location of these aggregate operations within the county, while Appendix 4 differentiates between Crown and private lands within Haliburton County. Of the approximate 380 pits and quarries in the county 143 are located on Crown land and the remainder on private land. Dauntingly, this indicates that the municipality oversees policy outlined in the CHOP and PPS on approximately 62% of the pits in the county that are either active or otherwise. Conversely, all 4 of the permitted quarries in the County are located on Crown land and therefore are regulated by the ARA and are subsequently receiving progressive rehabilitation.
Between the years 1990 and 2005 there were 90 aggregate permits issued in Haliburton County, 19 of which were granted to Tembec Inc. The remainder of the permits issued allowed extraction form Crown lands by public authority or private citizens for personal purposes. Permitting information has been provided by the MNRs Aggregate Licensing and Permitting System (ALPS), which databases specifications of permits and licenses. Table 2 indicates the general specifications as it relates to the permits issued in Haliburton County over the past fifteen years.

Table 2 – General specifications of recent permitted aggregate operations in Haliburton County

<table>
<thead>
<tr>
<th>Permit Description</th>
<th>Maximum Allowed Tonnage</th>
<th>Permitted Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Aggregate</td>
<td>200 – 50,000</td>
<td>86.5</td>
</tr>
<tr>
<td>Public Authority Aggregate</td>
<td>200 – 20,000</td>
<td>4.90</td>
</tr>
<tr>
<td>Personal Aggregate</td>
<td>8 – 2,040</td>
<td>7.12</td>
</tr>
<tr>
<td>Unspecified</td>
<td>20,000 – 30,000</td>
<td>98.0</td>
</tr>
</tbody>
</table>

Of the 90 permitted aggregate extraction sites in the county approximately 36% are located in McClintock Township, 14% in Livingstone Township, 13% in Sherborne Township, and the remainder spread throughout ten other Townships. Notably, the above-mentioned permits are only those located on Crown land. In contrast, the majority of all extraction operations in the County occur/occurred in Cardiff (16.3%), Minden (8.7%), Snowdon (8.4%), and Dysart (8.2%) Townships. As previously stated, Haliburton is not subject to the governance of the ARA and thus, aggregate extraction from private land does not require licensing.

According to NRVIS there are approximately 237 pits on private land in Haliburton County. Furthermore, NRVIS approximates only 12% of these operations have received or are receiving rehabilitation. The remainder has not been rehabilitated or
its status is unknown. Therefore, the degraded landmass in Haliburton County would equal approximately 240 ha, assuming the remaining pits on private land have not received any rehabilitation. The result of this disregard of rehabilitation efforts resulted in approximately 6,000 ha of degraded land in throughout the province from 1992 to 2001 (Holt and James, 2003). Also, Holt and James (2003) indicated that through the projection of these statistics there will another 6,000 ha lost to un-rehabilitated pits and quarries by the year 2011. That is, without a proactive approach to rehabilitating these lands in approximately five years another substantial portion of Haliburton County’s landscape will be scarred and subsequently negated of ecological function.

**Environmental Concerns**

Due to its geographic location and morphology Haliburton is endowed with many lakes and surface water bodies. These characteristics are quite appealing for residential, recreational, and industrial applications alike. This appeal is specifically what causes the greatest concern. Particularly, the result is a conflict between permanent residents and those exploiting resources. The issues are elementary, where industry creates pollution that disturbs both wildlife and anthropogenic necessity for properly functioning natural systems. Thus, by extracting aggregates and altering landscape characteristics within an ecosystem effects are felt throughout the region by multiple species, including humans. The latter is to be discussed in greater detail, where the focus is on water and noise pollution. Specifically, relevance to aggregate extraction in Haliburton County, subsequent environmental impacts, and rehabilitation of such practices are investigated.
As displayed in Appendices 2 and 3 there are several areas either protected or of natural and scientific interest. As such, it it indicated that the Townships of Bruton, Clyde, Nightingale, Lawrence, and parts of Eyre and Livingstone are supposedly protected areas. However these Townships collectively harbour approximately 52 pits and quarries. Likewise, there are pits and quarries located within the Oxtongue River – Ragged Falls Provincial Park, Silent Lake Provincial Park, Plastic Lake Conservation Reserve, and Queen Elizabeth II Wildlands Provincial Park. As well, to a lesser extent ANSI are also being encroached upon by aggregate extraction operations. There seems to be an ignorance towards the fact that property boundaries do not apply to ecosystem function. That is, the effects of altering landscapes is exhibited beyond the immediate extraction site. Therefore, the extraction of aggregates from lands in relatively close proximity to protected areas and ANSI will likely result in an extensive degradation of ecological function. This is especially valid when considering aquatic systems.

Intuitively, before aggregates are extracted from the earth the overburden material and vegetation are removed. This process in itself augments the potential for water and noise pollution. Where vegetation acts as a biological barrier that intercepts both nuisance noise and chemicals. Compounding the potential for environmental damage and noise pollution is the removal of vegetation along the shores of a water body. With a large un-interupted lake surface (fetch) the noise and pollutant buffering capacity is ultimately void. Likewise, by excavating aggregate material from the surface and subsurface of the earth hydrological regimes are subsequently altered. This too impacts the integrity of the environment, where infiltration capacity of the ground is changed. By
altering infiltration capacities groundwater recharge can be amplified but as a consequence chemical and biological filtration capacities can be diminished.

As displayed above, aggregate extraction degrades the natural environments ability to sustain associated functions. Rehabilitation of such operations would facilitate the reversion of these functions, however, by not rehabilitating these areas the degradation of integrity is inevitable. Appendix 1 indicates that there is an abundance of pits and quarries located around lakes throughout the county. These locations, like all others, are susceptible to environmental degradation from mining operations. Therefore, rehabilitation is absolutely necessary, but given the lack of financing and enforcement described previous options are limited.

Rehabilitation / Discussion

The Ontario Aggregate Resources Corporation (TOARC) is the trustee of the ART and oversees the decree of the Management of Abandoned Aggregate Properties (MAAP) program. MAAP is suspiciously dedicated to the rehabilitation of abandoned pits and quarries and to funding research on aggregate resource management. Thus, there should be potential for the rehabilitation of abandoned pits and quarries in Haliburton County. ART funded rehabilitation efforts are facilitated by TOARC and include surveys and studies of the location and condition of the extraction area. The spending of ART funds on rehabilitation is a debt due to the Trust by the most recent licensee or permittee (ARA, 1989). However, TOARC was incorporated with the Ontario Stone, Sand, and Gravel (OSSG) Association and is wholly owned by the Aggregate Producers’
Association of Ontario (APAO). Notably, the APAO is a registered gravel lobbyist association and is in the business of making money. Clearly they are in a position where there is a conflict of interests.

In 1999, the Ontario Aggregates Resources Corporation (TOARC), wholly owned by APAO (gravel lobby group), liquidated the security deposits that were used to guarantee rehabilitation of aggregate pits and quarries. The security deposits amounted to approximately $49,000,000 and were distributed amongst the pit operators. This was done according an order given by the MNR under section 6 of the Aggregate Resources Act. The deposits were used as a reward system to guarantee that operators rehabilitated their pits and quarries (Gravel Watch, 2006). Once the deposits were liquidated, this incentive disappeared, as did the potential for Haliburton’s abandoned aggregate operations to receive rehabilitation. Holt and James (2003) stated that by entrusting APAO with ART funds and the responsibility of appropriately utilizing these funds is a violation of environmental values. That is, the government has attempted to hide resource management, and the responsibility of ART management has been delegated to a group with conflicting interests. APAOs stated objectives are to influence legislation, regulation, policy, and political fundraising. Apparently the provincial government has aided APAO in attaining their objectives at the expense of the environment and general public.

Notably, the government is an important stakeholder of aggregates in that it consumes over 50% of Ontario aggregates excavated (Holt and James, 2003). Speculatively, part of the 50% of aggregates consumed in the province is extracted by private operations, which potentially belong to APAO. Thus, Ontario is somewhat reliant
on private operations and APAO. Given this scenario, it is not only APAO that has a conflict of interests regarding aggregates but the provincial government does also. That is, by biting the hand that feeds aggregate resources provincial development interests potentially suffer. This alone should warrant legal action. In addition to the PPS and CHOP regulations the inclusion of: the Environmental Assessment Act, the Canadian Environmental Assessment Act (1992), the Environmental Protection Act, the Ontario Energy Board Act (1998), the Ontario Water Resources Act, the Conservation Authorities Act, the Ontario Heritage Act, and the Safe Drinking Water Act (2002) should be utilized to aid in the regulatory and enforcement processes.

**Conclusion**

The livelihood and financial sustenance of Haliburton County’s private citizens is not the issue being addressed in this report. Rather the issue is the ineffectiveness of those groups responsible for facilitating and enforcing responsible land stewardship within the county. That is, ART funds were foolishly entrusted to the gravel lobby group APAO and what remains of these funds are not appropriately administered by TOARC to abandoned aggregate extraction sites. Furthermore, local and regional by-laws allow for the extraction of aggregates from significant and sensitive areas; while they and provincial officials do not enforce relevant policy that has been put forth by community and government representatives. Given that Haliburton County has enormous ecological, social, and financial assets this blatant disregard for responsible stewardship is unacceptable.
It is recommended that an appeal be made to the Ontario Municipal Board. The appeal should entail an amendment that obligates officials to enforce the CHOP specifications regarding aggregate extraction site rehabilitation. Further, the appeal for an amendment should outline the requirement to include a municipal by-law prohibiting the mining of aggregates from ANSI and significant and sensitive areas. This action is legitimate and outlined in sections 22 (7), 34 (1) 3.1, and 34 (1) 3.2 (i, ii, iii) of the Planning Act (1990). Financing of rehabilitation may be available by request, where section 28 (7) warrants grants or loans for the purpose of community improvement actions.

Acknowledgements

Primarily, Brenda VanSleeuwen of the Haliburton Highlands Land Trust was central to the conveyance of maps and access to NRVIS and ANSI data. Likewise, the MNR Aggregate Resources and Petroleum Section of the Lands and Waters Branch, Natural Resource Management Division provided valuable information and direction pertaining to aggregate permits. Mark Browning, also of the MNR, provided initial guidance of how and where to obtain relevant and rewarding facts. All contributions are greatly appreciated.
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Natural Resources Values Information System