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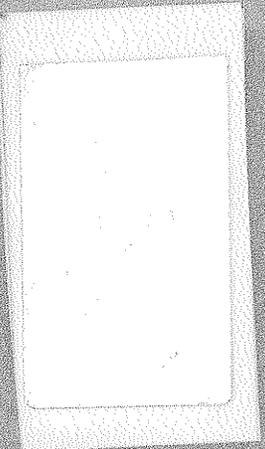
# REVIEW OF THE 1999 YUKON STATE OF THE ENVIRONMENT REPORT

by the

**Yukon Council  
on the Economy and the Environment**



April 2001





**YUKON COUNCIL ON THE ECONOMY  
AND THE ENVIRONMENT**

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April 18, 2001

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The Honourable Pat Duncan  
Premier  
Government of the Yukon  
Box 2703  
Whitehorse, Yukon  
Y1A 2C6

Dear Premier Duncan:

On behalf of my fellow Council members, I am pleased to present the 1999 Review of the State of the Environment Report (SOER) to the Yukon Legislative Assembly.

Our review focuses on the relationship between economic activities and environmental health within the Yukon. Foremost in our review was establishing a common process of measurement that can illustrate the connection between the economy and the environment.

We discovered that there are limits to what can be measured effectively due to the type and volume of data that is presently collected by various agencies and departments. We also identified that the SOER has a prevalent focus on Yukon's environmental status while information on economic issues was not featured as prominently. The Yukon Council on the Economy and the Environment (YCEE) believes that adding enhanced information on economic activity would make the SOER a more useable, well-balanced report.

The Council is very pleased with how the Sustainable Progress Indicators, which YCEE developed in conjunction with the Pembina Institute, are being considered by government departments to address common measurement practices. YCEE sees this as a positive development in creating economic and environmental reports that will become a more usable information resource for everyone.

Sincerely,

Richard Buchan  
Chair



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## **EXECUTIVE SUMMARY**

"The Council shall review a Yukon State of the Environment Report and submit a report of its review to the Legislative Assembly." Section 49, *Yukon Environment Act*.

In general, the 1999 Yukon State of the Environment Report (SOER) does an adequate job of addressing the 'purposes' and 'requirements' of the *Environment Act*, although it falls short of the mark in a number of key areas. Shortfalls occur in the areas of incorporation of First Nation traditional knowledge and in providing useful baseline knowledge to environmental planners, assessors and regulators. The overall quality of the SOER would benefit significantly if improvement were achieved with regard to these categories of information.

In addition, the SOER fails to adequately profile the importance of economic activity to the overall health of the environment. This is required by the *Environment Act* definition of the 'environment'. Although the SOER has potential for assisting the Yukon Council on the Economy and the Environment (YCEE) in addressing mandated 'powers and duties', its failure to address economic elements of the environment limits its use in a significant manner, particularly given that the principal purpose of the YCEE is to "encourage sustainable development in the Yukon." (Section 41(1), *Environment Act*).

Improved incorporation of First Nation traditional knowledge should be achievable through working more intensively with an appropriate First Nation group, such as the Council of Elders. Although this was done for the SOER, it did not result in meaningful incorporation of traditional knowledge into issue identification and trend analysis. The YCEE believes that additional effort should be expended in this area as part of the process of developing the next Yukon SOER.

With regard to providing baseline information to support environmental planning, assessment and regulation, the standard of information required to support these activities may be too high to be realistically achievable in the context of a SOER. The YCEE would, therefore, suggest that this requirement be reviewed to assess whether the standard should be revised to require information to be provided at a level that would support less technical and site specific activities, such as policy and/or program review or development.

The YCEE is concerned that the failure of the SOER to adequately consider economic elements of the environment may be attributable to an institutional bias on the part of the reporting agencies. This can have broad implications for economic health and viability. For example, from the perspective of the mining industry any such bias could be linked to a broader perception that the Yukon is not a particularly good jurisdiction to invest in. Failure to attract investment and encourage responsible development can negatively affect economic/environmental health and associated quality of life issues.

In this case, institutional bias may result from the fact that the role of the coordinating agency(ies) and the attendant expertise that it has developed is focussed primarily on the physical attributes of the environment, more than on the social and economic aspects. This potential imbalance can be exacerbated when the process does not include an adequate 'check and balance' mechanism. For example, the *Economic Development Act* does not impose a parallel reporting requirement on economic aspects of the environment. In the absence of such a requirement and given the broad definition of the 'environment' in the *Environment Act* the onus to provide balanced and meaningful reporting becomes more significant.

With regard to the SOER's failure to adequately profile economic elements of the environment, the YCEE would suggest the following:

1. That the terms of reference for the next SOER specifically require that the economic elements of the 'environment' be addressed; and
2. That governmental coordinators of the SOER process be directed to engage in meaningful consultation with the Department of Economic Development and non-governmental agencies involved in economic development as part of the SOER process.

The SOER provides good general background information on the Yukon environment, and will facilitate YCEE work in public awareness and education, and to encourage public participation in processes related to environmental management. However, its failure to adequately profile the importance of economic activity to the overall health of the environment represents a significant limitation of its potential for assisting the YCEE in addressing mandated 'powers and duties' pursuant to the *Environment Act*. From a YCEE perspective, the SOER would be a more useful instrument for Council and government purposes if it were drafted in a manner that more directly addressed the significance of environmental activities and trends from the perspective of sustainable development.

#### **Additional Summary Comments:**

- The SOER presents 'high-level' information that is sufficient to provide the public with an "early warning" and/or "analysis of potential problems", particularly through the use of the "Progress and Challenges" section included at the end of most sub-chapters.

- The level of information provided is sufficient to allow the public to “monitor progress toward the achievement of the objectives of the (*Environment*) Act.
- The SOER utilizes standard state of environment indicators developed by federal agencies and other Canadian jurisdictions, but fails to identify or reference those indicators within the text of the SOER, or to consistently explain their significance within the context of tracking changes, trends or ‘hotspots’ in the Yukon environment.
- The SOER provides good high-level and some site-specific information. Where available, data and associated trend analysis is used effectively to identify emerging problems.
- The SOER fails to fully assess governmental activities with regard to their effect (positive and negative) on environmental health. Industry is identified as a major culprit, while government environmental impacts are downplayed or omitted. An example of this is the mercury spill from a water-flow monitoring station near the Yukon River Bridge.
- Rainy Hollow and Brooks Brook are barely mentioned in the SOER. These are major sites that have required large cleanup efforts at significant cost. More information related to cleanup procedures and the current status of these sites would be useful.
- The section on the Yukon Protected Areas Strategy does not adequately identify or profile the importance of addressing economic development and industry issues as part of the planning and implementation process. At a minimum, a reference to these issues in the Progress and Challenges section would be useful.
- As a general observation, the SOER does not adequately address those elements of the environment related to “buildings, structures, roads, facilities, works and artifacts” (definition of ‘environment’). As one example of the significance of these elements of the environment, a failure to adequately maintain roads could have a devastating impact on community life. Another example of a significant infrastructure issue is the quality of access to internet services; improved access could significantly impact social and economic health in remote communities.

**YUKON COUNCIL ON THE ECONOMY AND THE ENVIRONMENT**  
**REVIEW OF THE 1999 YUKON STATE OF THE ENVIRONMENT REPORT**

"The Council shall review a Yukon State of the Environment Report and submit a report of its review to the Legislative Assembly." Section 49, *Yukon Environment Act*

**1. STATEMENT OF GOALS AND OBJECTIVES OF THE REVIEW**

Although Section 49 does not provide specific direction to the Council, Section 47 – Yukon State of the Environment Report and Section 48 – Requirements for the Yukon State of the Environment Report, detail the purpose and requirements for the State of the Environment Report (SOER). In addition, Section 41 – Powers and duties of the Council, outlines the general mandate of the Council to encourage sustainable development in the Yukon. Collectively, these provisions inform the process and outcome of the review. The definition of "environment" in the *Environment Act* provides the over-riding context for the SOER.

In the course of fulfilling the Section 49 requirement, the review will address two key objectives:

- a) To review the content of the SOER to determine whether or not it has met the information requirements of the *Environment Act* (detailed in Sections 47 and 48); and
- b) To review the content of the SOER to assess its usefulness to Council in addressing its overall responsibilities under the *Act* (detailed in Section 41).

**2. METHODOLOGY**

YCEE developed a methodology to address the requirements of the 'Statement of Goals and Objectives' of the review. Key steps included the following:

- 1. Articulating the goals and objectives of the SOER review, as per Section #1, above.
- 2. Developing 'key questions' reflecting the requirements of the relevant sections of the *Environment Act* (Sections 47(2), 48(2) and 41) as the primary review tool.
- 3. Developing an analytical model that linked the goals and objectives of the review to the key questions referred to above.
- 4. Developing reporting formats to address the review requirements of the *Environment Act* in a manner consistent with the organizational structure of the SOER (for ease of reference).

5. Proceeding to undertake an exhaustive review of the SOER, utilizing the analytical model referred to in #3, above.
6. In addition to drawing on the experience and knowledge of YCEE members, additional background and operational perspective on the content of the SOER was obtained from contacts within key governmental agencies.
7. The final report was prepared for submission to the Legislative Assembly.

The analytical model was applied in a standard manner to the SOER at the level of SOER 'sub-chapters' and to the SOER as a whole. There are eight key questions directly reflecting the content of the relevant sections of the *Environment Act*. Each sub-chapter and the SOER as a whole were assessed utilizing these questions. Key questions were weighted equally in the analytical model. Assessments ranged from meeting or exceeding *Environment Act* requirements to failing to adequately address requirements.

### **Key Questions:**

#### **Does this section of the SOER:**

1. provide early warning and analysis of potential problems for the environment?  
(*Environment Act* – 47(2)(a))
2. allow the public to monitor progress toward the achievement of the objectives of this (Environment) *Act*? (*Environment Act* – 47(2)(b))
3. provide baseline information for environmental planning, assessment and regulation? (*Environment Act* – 47(2)(c))
4. present baseline information on the environment? (*Environment Act* – 48(2)(a))
5. incorporate the traditional knowledge of Yukon First Nation members as it relates to the environment? (*Environment Act* – 48(2)(b))
6. establish indicators of impairment of or improvement to the environment and identify and present analysis of trends or changes in the indicators? (*Environment Act* – 48(2)(c))
7. identify emerging problems for the environment, especially those involving long-term and cumulative effects? (*Environment Act* – 48(2)(d))
8. assist the YCEE in discharging its general responsibilities under Section 41 of the *Environment Act*? (*Environment Act* – 41)

Results provide a qualitative assessment of the SOER at a sub-chapter level and of the SOER as a whole (following the 'key question' format).

### 3. REVIEW OF THE STATE OF THE ENVIRONMENT REPORT

The *Environment Act* defines 'environment' to mean:

- (a) the air, land and water;
- (b) all organic and inorganic matter and living organisms, including biodiversity within and among species;
- (c) the ecosystem and ecological relationships;
- (d) buildings, structures, roads, facilities, works, artifacts;
- (e) all social and economic conditions affecting community life; and
- (f) the inter-relationships between or among the factors in paragraphs (a), (b), (c), (d) or (e).

This is a very inclusive definition and would be difficult, if not impossible to fully address given realistic fiscal, data and time constraints. With the exception of "e" above and associated implication for "f", the drafters of the SOER have made significant progress in addressing most of these 'factors', although not always to the degree contemplated by the purposes of the SOER (Section 47 of the *Environment Act*).

#### 3.1 EFFECTIVENESS OF THE SOER IN ADDRESSING SPECIFIC ENVIRONMENT ACT REQUIREMENTS (Key Questions)

In general, the SOER does an adequate job of addressing the 'purposes' and 'requirements' of the *Environment Act* (Sections 47 and 48, respectively); although, it falls short of the mark in a number of key areas. Shortfalls occur in the areas of incorporation of First Nation traditional knowledge and in providing useful baseline knowledge to environmental planners, assessors and regulators. The overall quality of the SOER would benefit significantly if improvement were achieved with regard to these categories of information. In addition, the SOER fails to adequately profile the importance of economic activity to the overall health of the environment, as required by the *Environment Act* definition of the 'environment'. Although the SOER has potential for assisting the YCEE in addressing mandated 'powers and duties' pursuant to Section 41 of the *Environment Act*, its failure to address economic elements of the environment limits its use in a significant manner.

The following sub-sections provide assessments of the SOER's success at addressing the specific requirements of the relevant sections of the *Environment Act*. Each of the three sub-sections corresponds to groupings of key questions identified for the purposes of the analytical model referred to in Section 2, above.

## ***Environment Act – Section 47.2 – Purposes of the SOER***

Section 47(2) of the *Environment Act* sets out the purposes of the SOER as follows:

- provide early warning and analysis of potential problems for the environment;
- allow the public to monitor progress toward the achievement of the objectives of the (*Environment*) *Act*; and
- provide baseline information for environmental planning, assessment and regulation.

*These 'purposes' correspond to Key Questions 1 – 3 below.*

**Q. #1 Early warning** - The SOER presents 'high-level' information that is sufficient to provide the public with an "early warning" and/or "analysis of potential problems", particularly through the use of the "Progress and Challenges" section included at the end of most sub-chapters. This information is provided in both a speculative manner (e.g., climate change section) and in the form of trend analysis of measurable emerging trends (e.g., increased incidence of pest/disease outbreaks in Yukon forests). The information is provided at a level that is useful for public awareness purposes, but would have minimal direct value to resource managers from an operational perspective. Information related to economic activity is 'sketchy' with regard to economic and social health implications.

**Q. #2 Public awareness** - The SOER does a good job of providing the public with background and baseline information on the environment at a level that is meaningful for non-program/operational purposes. The level of information is sufficient to allow the public to "monitor progress toward the achievement of the objectives of the (*Environment*) *Act*." The "Progress and Challenges" section at the end of most sub-chapters is a useful fast reference tool for this information. Information related to economic activity is 'sketchy' with regard to economic and social health implications.

**Q. #3 Baseline information for use by environmental planners, assessors and regulators** - The SOER does not provide information at a sufficient level of detail or geographical specificity (other than highlighting specific projects and/or hotspots) to be a useful support/reference tool to environmental planners, assessors and regulators. Processes associated with environmental planning, assessment and regulation tend to be highly technical and focussed.

Planning, assessment and regulatory processes generally occur on a regional (e.g., Greater Kluane Regional Land Use Plan) or project specific basis and at a detailed level of study. A standard process would involve: the establishment of a 'team' (planning team, review committee, etc.); the inventory, gathering and analysis of existing information; the identification and filling of information gaps; the preparation of reports; extensive consultation with stakeholders and affected residents; and, a review and approval process. It may be unrealistic to expect that the SOER could provide information at a level of detail that would meaningfully inform such a process. With

regard to these activities, the SOER provides good background information on the processes themselves, which is useful to the layperson in understanding and tracking issues, but is of little value to operating practitioners.

### ***Environment Act - Section 48(2) – Requirements for the Yukon State of the Environment Report***

Section 48(2) of the *Environment Act* details the specific requirements for the SOER as follows:

- To present baseline information on the environment;
- To incorporate the traditional knowledge of Yukon First Nation members as it relates to the environment;
- To establish indicators of impairment of or improvement to the environment and identify and present analysis of trends or changes in the indicators; and
- To identify emerging problems for the environment, especially those involving long-term and cumulative effects.

*These 'requirements' correspond to Key Questions 4 – 7 below.*

**Q. #4 Baseline Information** - 'Baseline information' is taken to mean "a set of critical observations or data used for comparison or a control" (Merriam Webster Dictionary). Using this definition, the information presented in the SOER is at a fairly general level. While this level of information may be useful in policy and/or program development, it is not particularly relevant for operational purposes. In the case of the SOER, the standard is set in Section 47(2)(c) of the *Environment Act* "to provide baseline information for environmental planning, assessment and regulation."

According to this standard, the information presented in the SOER would not be sufficient to meet the requirements. In fairness to the drafters of the SOER, the standard may be impractical. In the operational context, most planning, assessment and regulatory actions occur at a much more specific (project or planning area) level and require much more detailed technical information than could be reasonably included in the SOER. Moreover, it would be hard to justify the need to collect information at this level of detail or the associated costs, if not done within the context of responding to a planning, assessment, or regulatory initiative on the ground. This may reveal an area where the 'requirements' under the *Environment Act*, exceed reasonably achievable reporting standards.

**Q. #5 Traditional Knowledge** - 'Incorporate' is generally defined as "to merge, or to combine one thing with another, so as to form a united whole" (Merriam Webster Dictionary). While the SOER does incorporate First Nation traditional knowledge in the strictest sense of the definition, the treatment would have to be considered superficial. It is superficial in the sense that there is not enough information to provide much, if

any, guidance to either decision-makers or the general public in the areas of: policy and program development, or environmental planning, assessment, or regulatory matters.

The information is generally anecdotal and associated with one or another of the Yukon First Nation communities. Of some significance, though not explained in the SOER from a methodological perspective, is the fact that the Yukon Council of Elders was included in the SOER pre-publication review process. Presumably, this would go some way towards validating the information in the SOER from a traditional knowledge perspective. But the degree to which this would qualify as meaningful incorporation would have to be characterized as marginal.

**Q. #6 Establishing indicators and identifying trends** - According to the SOER Coordinator, the SOER utilizes standard indicators developed by federal agencies and other Canadian jurisdictions. However, the SOER generally fails to identify or reference those indicators within the text of the SOER, or to consistently explain their significance within the context of tracking changes, trends or 'hotspots' in the Yukon environment. Despite reporting some good indicator data and trend analysis (e.g. fisheries sub-chapter), this failure diminishes the value of the SOER from a public awareness and education perspective and more specifically, for the purposes of Section 47(2)(a) and 47(2)(b) of the *Environment Act*:

- to provide early warning and analysis of potential problems for the environment; and
- to allow the public to monitor progress toward the achievement of the objectives of the *Act*.

This would be an easily correctable deficiency for development of the next SOER. The SOER also fails to establish a historic context for economic and social elements of the environment. For example, there is very little information provided regarding the historic importance of the mining industry to the social and economic health of the territory.

**Q. #7 Identification of Emerging Problems** – The SOER provides good high-level and some site-specific information regarding emerging problems in the environment. Where available, data and associated trend analysis is used effectively to identify emerging problems. The "Progress and Challenges" section at the end of most sub-chapters is a useful quick reference/summary reporting mechanism. As is the case in many of the categories of 'key questions', the information provided is generally at a fairly 'high-level' that is useful from a policy/program perspective, but of limited value to resource managers at the operational level. Information related to economic activity is 'sketchy' with regard to economic and social health implications.

## ***Environment Act - Section 41 Powers and Duties of the Council***

Section 41 of the *Environment Act* sets out the powers and duties of the Council as follows:

41(1) The purpose of the Council is to encourage sustainable development in the Yukon.

41(2) Without restricting the generality of subsection (1), the Council may:

- (a) encourage public discussion of the economy and the environment and their inter-relationship;
- (b) review the policies of the Government of the Yukon and evaluate their implementation in relation to the objectives of this *Act*;
- (c) conduct research on the economy and the environment; and
- (d) promote public awareness of the importance of sustainable development.

**Q. #8 Assist YCEE in discharging its general responsibilities** -The SOER provides good general background information on the Yukon environment, and will facilitate YCEE work in public awareness and education, and encourage public participation in processes related to environmental management. However, its failure to adequately profile the importance of economic activity to the overall health of the environment represents a significant limitation of its potential for assisting the YCEE at addressing mandated 'powers and duties' pursuant to Section 41 of the *Environment Act*, particularly given that the principal purpose of the YCEE is to "encourage sustainable development in the Yukon." (Section 41(1), *Environment Act*).

### **3.2 SUB-CHAPTER SUMMARIES**

This section presents text summaries of review results for each chapter of the SOER, at a sub-chapter level. The objective is to assess the effectiveness of the SOER at addressing relevant *Environment Act* provisions (i.e., key questions) on a subject matter basis. The numbers preceding each set of comments corresponds to sub-chapter designations within the SOER.

**1.1 Air Quality** - Although listed as a sub-chapter in the Table of Contents of the SOER, there is no reporting on this subject. The SOER states that Air Quality was addressed in the 1997 interim SOER that is available from the Department of Renewable Resources, Policy and Planning branch. Air quality is a significant indicator of environmental health, particularly at the community level. As a 'stand alone' document reporting on the status of the Yukon environment, the SOER would have benefited from some reporting on this subject.

**1.1-1.5 Climate Change** - Sub-chapters 1.2 through 1.5 are analyzed as a collective as the subject matter throughout these sections is inherently consistent,

with information in one section being linked to the reading of the next. The sub-chapters present concise and thorough background information about climate change at the global level, with some speculative commentary on potential local effects in the Yukon. The information provides an excellent overview of the subject for public awareness and education purposes.

While there is some incorporation of First Nations traditional knowledge, this is limited to a single 'side bar', reference to the importance of traditional knowledge, and a reference to traditional knowledge work being undertaken at Yukon College under the Climate Exchange Project.

Sub-chapter 1.3 provides territory-focused data and trend analysis for a number of significant climate change indicators. This information is informative, but unavoidably speculative in terms of early warning and trend analysis. The level of detail of information is very good for public awareness and education and informative at the level of public policy and program development, but not adequate to inform decision making by environmental planners, assessors and regulators at an operational level. Again, this is more a consequence of the nature of the data and the complexity of the issue than of a failure on the part of the drafters to address the subject.

These sub-chapters do a good job of identifying potential impacts of climate change, including associated impacts to the Yukon economy. The 'Progress and Challenges' section on page 16 provides a good summary of the current status of this issue.

**2.1-2.2 Water Allocation and Use and Water Quality** - These two sub-chapters are reviewed collectively because of the linked and complementary nature of the subject matter. Again, this section provides excellent background information on water supply and allocation practices and water quality issues in the Yukon. At the level presented, the information is particularly useful for the purposes of informing the general public on the state of the environment and emerging issues. The section suffers somewhat on the water allocation front from a lack of data and associated analysis. It should be noted that it is not the responsibility of the SOER drafters to collect or analyze data, but to compile and present information in a manner that best addresses the purposes and requirements of the *Environment Act*.

On the water allocation and use front, data regarding the City of Whitehorse is the exception to the rule. This data is useful, concise and clearly presented. Overall, the sub-chapter on water quality is much more informative than the section on allocation and use. With regard to water quality, the section provides high-level, but good quality information related to the effects of sewage, forestry, mining, spills and contaminants from atmospheric transport.

There is some incorporation of traditional knowledge in the form of three 'side bars' quoting First Nation elders on water issues. While this information is interesting and

gives a sense of some concerns arising from traditional knowledge sources, it is neither comprehensive nor specific enough to inform either the general public or environmental planners, assessors or regulators, as per the requirements of the *Environment Act*.

As in the Climate Change section, this section concludes with a 'Progress and Challenges' section that provides a good summary of the current status of this issue. The 'Progress and Challenges' section also provides a good summary on progress toward implementation of the objectives of the *Environment Act*.

**3.1-3.2 Wilderness and Protected Areas** - The information presented in these two sub-chapters is complementary and, collectively, provides adequate background information regarding wilderness values and governmental efforts to address them. However, the information presented does not adequately identify or profile the importance of associated economic development and industry issues as part of overall environmental health. Much of the information regarding wilderness is generic in nature.

The 'protected areas' section provides good summary information about specific objectives at the level of 'ecoregion' representation. Adequate status reports on implementation are provided and the process of implementation is outlined at a sufficient level of detail to inform the general public and assist in policy and program development processes. The level of information presented would not address the requirements of environmental planners, assessors and regulators.

The 'Progress and Challenges' section at the end of the Protected Areas sub-chapter provides a good summary tool for tracking *Environment Act* progress in this area, but does not adequately profile the importance of incorporating economic considerations and industry support in the planning and implementation process. There are no direct references to First Nation traditional knowledge in this section of the SOER.

**3.3 Oil and Gas Industry** – This sub-chapter presents very high-level background information on the oil and gas resource and associated industry and regulatory structure in the Yukon. It should be noted that with the exception of the developments in the southeast Yukon, this industry is in its infancy in the territory. As an activity it is not advanced enough to have generated significant (or any) data from which to identify problems and/or analyze trends.

This section does not incorporate First Nation traditional knowledge, but that is likely a consequence of local First Nations not having sufficient Yukon-based experience to make observations or draw any conclusions. An exception to this general observation might be the Liard First Nation in southeast Yukon, but the SOER is silent in this regard. The value of this section of the SOER is predominantly educational.

**3.4 Mining** - The mining section provides adequate background/baseline information on the industry and its potential impact on the physical environment. It also provides background on potential and/or emerging environmental problems associated with mining and serves to address requirements for early warning purposes. However, the section fails to adequately profile the significance of historic and current trends in the sector for the overall health of the Yukon economy. Additional trend analysis in this area would help to establish a balanced context for consideration of the environmental and economic aspects of this industry.

With the exception of economic implications, the level of information is generally suitable for bringing the public 'up to speed' on generic mining issues, as well as emerging and specific problems, or for use in policy and/or program development. Although the information is adequate for these purposes, it would not be sufficient to support environmental planning, assessment or regulatory activities at the operational level.

The section does a good job at tracking regulatory development processes and products and provides an overview of historic and current mining operations in the Yukon, including existing and potential environmental liabilities. While recent regulatory developments are outlined on a 'side bar' (p. 50 of the SOER), it would be useful to also reference (or cross-reference) these developments as part of the Progress and Challenges section. These regulatory changes have had a major impact on the way mining is done and are designed to minimize environmental impacts.

In a similar vein, there continue to be significant challenges associated with environmental assessment and mine permitting processes. The SOER would benefit from some reference to these in the Progress and Challenges section. There is only one First Nation traditional knowledge 'side bar' in this section and it is focused on the relationship between mining and other resource users.

From an industry perspective, another problem or challenge relates to residual liability associated with past environmental and regulatory processes. The failure of regulatory agencies to assume greater leadership and/or responsibility for addressing past problems presents an ongoing challenge to both environmental remediation and future mining development.

**3.5 Solid Waste** – This sub-chapter provides very good background information on solid waste management issues and practices. It also effectively tracks regulatory development processes pursuant to the *Environment Act*. It presents good summary information on specific issues and trends, including identification of potential problems. It contains a good high-level outline of problems associated with contaminated or abandoned sites. The sub-chapter contains only one First Nation traditional knowledge 'side bar' that provides specific information

regarding historic garbage 'dumping' in the Whitehorse area. Informational 'side bars' are used effectively to identify hot spots and topical issues. Trend information on waste reduction is informative and useful. In general, the level of information provided is useful at the policy and program development level, but of limited value to environmental planners, assessors and regulators at the operational level.

**3.6 Agriculture** – This sub-chapter provides background information at a level of detail that is adequate for public awareness and education purposes. The overview of the history and relationship of the activity to the larger environment is interesting and informative. The sub-chapter provides a good overview of management and regulatory processes. Potential problems with agriculture-environmental interactions are identified, but no supporting data is presented to indicate that any are extant in the Yukon. There is a First Nations traditional knowledge comment regarding the effect of agriculture on First Nation harvesting in farming areas. Again, while the information is presented at a level that is useful for public awareness and education purposes, it is not adequate to meet requirements of environmental planning, assessment or regulatory processes.

**3.7 Transportation** – This section focuses primarily on roads. It presents good historic background information on road development and associated effects, particularly with regard to transportation in the Gold Rush era and the development of the Alaska Highway. Information on historic impacts is presented at a high level (i.e., relocation of First Nation communities, over-hunting, etc). Some current trend data is presented regarding road development and/or upgrading. The sub-section dealing with the relationship between transportation and the environment identifies a range of potential impacts associated with roads and, to a lesser degree, to air transportation and trail and river use. The regulatory process for road development/approval is outlined.

This section provides high level information suitable for public awareness and education purposes, but not adequate for use by environmental planners, assessors or regulators. The SOER also fails to adequately profile the continuing importance of a well-maintained road network and other transportation systems to the social and economic health of Yukon communities. There is one First Nations traditional knowledge 'side bar' but it refers primarily to where roads were located relative to traditional travel routes and provides little information about environmental changes associated with road development and other forms of transportation.

**3.8 Tourism** – This sub-chapter provides general background information on the industry in Canada, as well as statistical information on tourism's contribution to the Yukon economy. It also presents statistical information on the demographics of adventure and ecotourism. There is good local information, including statistics and survey data and on the importance of landscape, scenery and wilderness to local industry. There is a general discussion regarding the potential impacts of tourism on the environment, but with the exception of littering, there is nothing conclusive

regarding effects on the ground. Potential impacts relate primarily to human-wildlife interactions. The SOER provides background on legislation and public education programs.

The 'Progress and Challenges' section gives a good overview to the general public, although the information presented would be of limited value to environmental planners, assessors and regulators. There is one 'side bar' from a First Nations elder providing an example of potential conflicts between non-First Nations travelers and traditional use sites.

**4.1 Fish and Fish Habitat** - This is one of the strongest subsections of the SOER. It presents good background information to bring the public 'up to speed' on natural processes associated with fish resources, then proceeds to provide good baseline information on current status, use and trends in environmental health, as well as resource management and regulatory practices. It also provides 'early warning' of large-scale emerging problems and on a site-specific basis. The SOER makes effective use of charts and incorporates First Nation traditional knowledge in the form of four 'side bars'. Two of the 'side bars' provide information related to traditional lifestyles and two provide information related to fish quality.

While the quality of the information remains inadequate to support operational level environmental planning, assessment and regulation, it is sufficient to inform the general public about emerging issues and concerns, and to inform high-level policy and program development, and to establish a context for resource planners and managers. The relationship between the resource and human activities related to harvesting, and development (i.e., mining, sewage and road construction) is explained in a clear and concise manner within the context of identification of 'early warning' of potential problems.

**4.2 Yukon Wildlife and Wildlife Habitat** – The sub-chapter presents good background on wildlife resources and natural processes and on the government's approach to resource planning and management. Wildlife population trends are mostly on a Yukon-wide basis and are informative at that scale, but of marginal value to operational-level planners and managers. There are some exceptions, where excellent information is provided regarding specific wildlife populations. This section also makes excellent use of graphic and text 'side bars' to provide information about wildlife populations, emerging issues and 'hot spots' where intensive management is being practiced. The section presents a good overview of wildlife 'values' (hunting, trapping, and viewing) to help set the context for understanding human-wildlife interactions in the Yukon.

The section could do better on the First Nations traditional knowledge front. While it outlines cooperative management process, there are no 'side bars' or other direct incorporation of First Nation traditional knowledge. Again, the 'Progress and

Challenges' section at the back of this sub-chapter provides a useful quick reference and overview of current status.

**5.1 Wetlands** – This section provides good background information about wetlands and associated natural processes. It also makes effective use of mapping to identify where they are located. The SOER concludes that there has been little loss of important wetlands in the Yukon. A final section of the sub-chapter reports on the status of Yukon wetlands with regard to formal protection and outlines relevant legislation and programs. The 'Progress and Challenges' section provides a good quick reference and summary.

**5.2 Forests** – The sub-chapter provides a good overview of the Yukon boreal forest, including information on the diversity in forest communities and associated natural processes. It also provides a good outline of forest planning and management mechanisms and a good description of regulatory processes and programs. The sub-chapter provides a good historic overview of harvesting, harvesting practices and associated impacts. Potential future impacts are also identified, including fragmentation of forest landscapes, water quality and impacts to wildlife (habitat loss and increased access for harvesting/hunting pressure).

There is also information presented on non-timber values such as subsistence and recreation. Statistical information is presented on forest health and the increased incidence of pests and diseases affecting Yukon forests. There is an interesting section providing speculative comments regarding the potential effects of climate change on forests. The 'Progress and Challenges' section provides a good and readily accessible summary.

**5.3 Traditional Way of Life** – This sub-chapter provides a good introduction and background information regarding traditional lifestyles. In addition to a background and overview section, two personal accounts from First Nation elders are included. These accounts set an excellent context for the SOER as a whole, illustrating elements of the traditional lifestyle that reflect a low impact, sustainable pattern of subsistence living within the natural environment. This section is useful as a public awareness and education tool and to set First Nations' traditional context for all levels of policy and program development and environmental planners, assessors and regulators.

#### **4. CONCLUSION**

In general, the 1999 Yukon State of the Environment Report does an adequate job at addressing the 'purposes' and 'requirements' of the *Environment Act*, although it falls short of the mark in a number of key areas. Shortfalls occur in the areas of incorporation of First Nation traditional knowledge and in providing useful baseline knowledge to environmental planners, assessors and regulators. In addition, the SOER fails to adequately profile the importance of economic activity to the overall health of

the environment. This is required by the *Environment Act* definition of the 'environment'. The YCEE is concerned that the failure of the SOER to adequately consider economic elements of the environment may be attributable to an institutional bias on the part of the reporting agencies.

The SOER provides good general background information on the Yukon environment, and will facilitate YCEE's work in public awareness and education, and to encourage public participation in processes related to environmental management. However, its failure to adequately profile the importance of economic activity to the overall health of the environment represents a significant limitation of its potential for assisting the YCEE in addressing mandated 'powers and duties' pursuant to the *Environment Act*, particularly given that the principal purpose of the YCEE is to "encourage sustainable development in the Yukon." (Section 41 (1), *Environment Act*).

From a YCEE perspective, the SOER would be a more useful instrument for the Council and government purposes if it were drafted in a manner that more directly addressed the significance of environmental activities and trends from the perspective of sustainable development.