

The Mysterious Trail of Suspect Statistics: A Case Study of Five Shuswap Nation Communities

André Le Dressay

This paper deals with the gathering of statistical information on five Shuswap Nation communities in south-central British Columbia. Through an analysis of statistical methods and findings by the Department of Indian and Northern Affairs Canada, Statistics Canada and the Shuswap Nation Tribal Council, it questions the accuracy of the information gathered as well as the policies derived from the information. It concludes that, in keeping with the inherent right of Aboriginal peoples to self-government, the solution is to allow First Nations to develop their own information management methods.

Le présent article traite du rassemblement des données statistiques concernant cinq communautés de la nation Shuswap du Centre-sud de la Colombie-Britannique. Au moyen d'une analyse des méthodes statistiques et des constatations du ministère des Affaires indiennes et du Nord canadien, de Statistique Canada et du conseil tribal de la nation Shuswap, l'article remet en question la précision des renseignements rassemblés ainsi que les politiques dérivées de cette information. L'article ajoute en guise de conclusion qu'en accord avec les droits inhérents des nations autochtones à l'autonomie gouvernementale, la solution est de permettre aux premières nations de développer leurs propres méthodes de gestion de l'information.

"The Royal Commission on Aboriginal Peoples will take a fresh approach to the challenges facing the relationship between Aboriginal Peoples and Canada. This is a Royal Commission with a mandate for change. We are looking for a path of reconciliation. Our job is to recommend solutions. We will ask questions. . . we will research the compelling issues

of land claims, self government and justice. . ." (Pamphlet of the Royal Commission on Aboriginal Peoples).

And so a bevy of academics, community groups, First Nation organizations and interested bystanders is being dispatched to ask the right questions and come up with recommendations. These well-intentioned researchers will conduct interviews, dig through archives, engage in specific case studies and use every available statistic to support their recommendations—recommendations that will probably have effects at the First Nation community level.

What would happen, however, if the statistical information on Aboriginal peoples at the community level was demonstrated to be suspect? Would not these policy recommendations be equally suspect? What would happen if government departments, such as the Department of Indian and Northern Affairs, Health and Welfare Canada or Employment and Immigration Canada, used these same suspect aggregated community statistics to formulate their policies and programs? A veritable crisis in First Nation policy might result.

The intent of this paper is to demonstrate that such a crisis may exist. Tables 1 and 2 below present statistics for the number of households and the population counts in five Shuswap Nation communities in south-central British Columbia. The sources of the information are the Department of Indian and Northern Affairs of Canada, Statistics Canada 1991 Census results and the Shuswap Nation Tribal Council's community economic development studies for the five communities. Be warned, however, that the differences in these simple statistics from these three sources are rather alarming.

These particular communities were chosen because they seemed predisposed to more accurate statistics. This paper contends that statistical discrepancies in these "best case" communities imply even less reliable statistics for other First Nation communities in Canada and dubious aggregated national First Nation statistics. The potential impact of such discrepancy on First Nations' research and policy would be substantial.

In particular, by following the "mysterious trail of the suspect statistics" in these five SNTC communities, this paper will demonstrate:

- 1) That First Nation community-based statistics gathered by the standard sources, Indian and Northern Affairs of Canada and Statistics Canada, are of uncertain quality.
- 2) That First Nation communities' control of their information may lead to more reliable statistics and help build an important foundation for self-government.

The Suspects

The Shuswap Nation Tribal Council. The SNTC (see Figure 1)¹ has been developing its information management capacity for the past two years. In February 1991, SNTC officially launched its own statistics department.² The need for the communities of the SNTC to develop methods for controlling information relevant to them was seen as a cornerstone to a central goal of the SNTC, namely, the settlement of a "treaty on all matters of moment" within traditional Shuswap territory.³ In particular, not only would the SNTC statistics department provide credible information for the actual negotiations surrounding treaty settlement, but this new SNTC department would also help develop the necessary management capacity for pre- and post-treaty settlements. A "sister" organization to the SNTC statistics department, the Shuswap Information System (SIS),⁴ has been

**Table 1: Number of 1991 Houses
in Selected SNTC communities**

<u>Community</u>	<u>Statistics Canada*</u>	<u>SNTC</u>
Bonaparte	45	54
Canoe Creek	40	49
North Thompson	70	75
Skeetchest'n	40	39
Adams Lake	? **	72

Notes

INAC does not keep housing data for individual First Nations.

Statistics Canada data were collected in June 1991. No data are available for the Adams Lake community, or the Upper Hat Creek reserve in the Bonaparte community in SC 95-384

SNTC data were collected in the summers of 1991 and 1992. Adjustments were made to reflect 1991 estimates.

- * It really is detective's work to match Statistics Canada data with First Nation communities. Most SNTC communities have two or three populated reserves. SC 95-384 lists the demographics for each reserve. It is then up to the researcher to put the community back together by adding together the relevant reserves. Moreover, some data from reserves is suppressed for reasons of confidentiality including Bonaparte (Upper Hat Creek), North Thompson (Louis Creek) and Canoe Creek (Canoe Creek 2 and Dog Creek 2). No dwelling counts are given for suppressed communities.

- ** No Statistics Canada Adams Lake estimates could be found, even under the traditional Shuswap language name of Cstélnec (people of Adams Lake). This is surprising since this area was enumerated, according to the census area manager.

collecting community economic development survey information for the past two years. This information is summarized in Tables 1 and 2.

Statistics Canada. Statistics Canada made a concerted effort to increase the participation of First Nations in the 1991 census survey. The Assembly of First Nations and Statistics Canada developed a new post-census on Aboriginal people.⁵ This addressed concerns that the census information was not useful to First Nations. Statistics Canada also developed special Aboriginal liaison positions in their regional offices (located in Vancouver for B.C.) to dispel concerns that First Nations were not sufficiently involved in the information collection process. In addition, some First Nations were allowed to help select and recommend appropriate persons for managing census operations in First Nation communities.

The Shuswap Nation Tribal Council, through negotiations that arose from non-participation in the 1981 and 1986 censuses, was one such pilot First Nation organization allowed to "manage" the collection of census information in SNTC communities. Two years later the results of the census arrived and are presented in Tables 1 and 2.

**Table 2: Population Estimates for
Selected SNTC communities**

<u>Community</u>	<u>INAC</u>	<u>Statistics Canada*</u>	<u>SNTC</u>
Bonaparte	130	170	181
Canoe Creek	108	158	207
North Thompson	222	224	252
Skeetchest'n	128	154	109
Adams Lake	329	?	300

Notes

INAC data were taken from the end of December 1991. These are the on-reserve own members category.

Statistics Canada data were collected in June 1991. No data are available for the Adams Lake community, or the Upper Hat reserve in the Bonaparte community in SC 95-384.

SNTC estimates for Canoe Creek and North Thompson were collected in the summer of 1991. Estimates for the other communities were from data collected in 1992. These estimates usually should not be normalized because no follow-up on the non-response portion of the population was conducted. They are included for demonstration purposes only.

- * When the population counts for the suppressed reserves are included, the population for Bonaparte is 197, Canoe Creek 201 and North Thompson 246. These are remarkably close to the SNTC estimates.

Indian and Northern Affairs of Canada. INAC is charged with the onerous task of administering the Indian Act. A major component of its job is to ensure that the federal government meets its fiduciary responsibility to First Nations.⁶ INAC needs to know how many status Indians there are and where they are located to fulfil its responsibility.

To that end, it collects annual membership data from each First Nation community. The community submits to INAC the membership lists as of December 31 of the previous year.⁷ The community verifies the lists and in June sends back an official population figure for the First Nation community. Tables 1 and 2 present the figures from 1991.

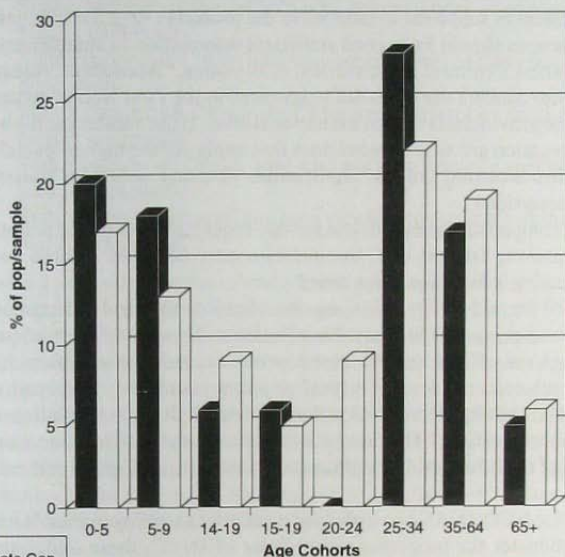


Figure 1: Age Cohort Comparison - Shuswap People of Canoe Creek

Statistics Canada estimates are taken from SC 95-384. Adjustments have been made to account for cohort rounding in Statistics Canada data. The census was conducted in June 1991.

SNTC estimates were taken from the sample results of the Canoe Creek study conducted in August 1991.

Something is clearly amiss. First, although some houses may have been moved or added, it is highly doubtful that these communities could change this much in the space of a year. Secondly, in Canoe Creek there is a 100 percent population difference between the SNTC and INAC. Three questions come to mind: Can no one count? Who, if anyone, is right? Why should we care?

The third question is the easiest and therefore will be dealt with first. First Nations governments receive funding for their operations and capital projects on the basis of their community's population. INAC doles out the resources, so its own numbers are used. What if they are dramatically wrong? Good information is generally the basis of good decisions. If self-government is supposed to help solve the problems for First Nations, then First Nations should have good statistical information to complement each First Nation's cultural and historical information.⁸ Academics, researchers and policy makers use statistics aggregated at the First Nation community level, the provincial level and the national level. If the numbers at the bottom of aggregation are suspect what does that imply for the higher levels? Even more disconcerting are the implications of using uncertain statistics to prove assertions.

By comparison, questions one and two require a thorough methodological investigation. To that end, the question now becomes: Where do each organization's numbers come from?

Until the mid-1970s, INAC was the administrative and subsequently the decision-making unit for most First Nations. Ottawa was the headquarters with regional offices located in each province, and district offices located at the sub-regional level.⁹ Typically, policy would be developed at the regional or headquarters level and administered through the Indian agents at the district office.¹⁰ The flow of information was from the bottom up. The quality of the information therefore depended on the diligence of the district Indian agent.

In the 1970s INAC began devolving district authority to First Nations.¹¹ To administer the programs and policies of INAC, these fledgling First Nation administrative units required money. This funding depends on the number of persons within the community. It was imperative, therefore, to keep track of each community's population. Through several bureaucratic growing pains, an identifiable methodology evolved to do this. Each First Nation has a membership clerk.¹² INAC trains the clerk to fill out the administrative forms necessary for keeping track of population. These forms¹³ keep track of births, deaths, migration and C-31 reinstatements.¹⁴ Each December these forms are tabulated, copied and sent to the regional offices of INAC as a membership list form. The regional offices of INAC

verify a list by cross-referencing it with lists of people receiving social assistance or attending elementary, secondary and post-secondary institutions. Of course, a number of legitimate community members might not appear on the verification lists. The existence and legitimacy of these "extra" persons would either have to be negotiated or substantiated with more documentation. By June of the following year, INAC sends back a population figure for the First Nation community.¹⁵ Persons are divided into six categories:

1. Status Indians on the reserve who are members of that First Nation community.
2. Status Indians on the reserve who are members of another First Nation community.
3. Status Indians on Crown land who are members of that First Nation community.
4. Status Indians on Crown land who are members of another First Nation community.
5. Status Indians on Crown land who are members of a specific First Nation community.
6. Status Indians living off the reserve who are members of that First Nation community.

Table 2 shows the number of status Indians on reserve who are members of the First Nation community (i.e. category 1).

The history between Statistics Canada and the communities of the SNTC, though not as long as that of INAC, is still rich. Because of problems relating to information ownership, relevance and usage, the communities of the Shuswap Nation Tribal Council did not participate in the 1981 and 1986 census operations. Negotiations during this time culminated in an agreement between the SNTC and Statistics Canada in October 1990. Similar agreements—or as Statistics Canada prefers, pilot projects—were signed with the Assembly of Manitoba Chiefs and the Federation of Saskatchewan Indian Nations.

The main element of the SNTC arrangement is a trade of technical expertise from Statistics Canada to help develop the SNTC statistics department, for participation in the 1991 census operation by the communities of the SNTC.¹⁶ Other components of the agreement include a special census district comprised of SNTC communities, a special census enumeration supervisor nominated by the SNTC and the appointment of SNTC selected census representatives to conduct the census in SNTC communities.¹⁷ As a lead-up to the 1991 census, the SNTC also participated in the development and pre-test of the post-census survey.¹⁸

To conduct the 1991 census, an SNTC-nominated area supervisor was hired. Her contact with Statistics Canada was through a Statistics Canada B.C. interior Native liaison. Immediately below her, two managers were hired to oversee survey collection within the SNTC communities. These three individuals were given a one-week training course on the fundamentals of information collection, data handling, data management, personnel management and Statistics Canada's policies and administration. Statistics Canada personnel provided the training.

These managers then hired persons from the SNTC communities to conduct the actual census.¹⁹ These census representatives also received one week of training on the importance of data confidentiality, understanding the value of the census and knowledge of one's census area. In addition, training was given about methods for survey communication, form completion, census information collection methods and administration. Statistics Canada and the SNTC-nominated supervisor and managers provided the training.

Beginning 4 June 1991, for the first time in fifteen years, census representatives were sent into their particular SNTC communities to collect survey information. Careful notes were kept about the response of each household. In the event of a non-response due to absence, the census representative tried three times to contact the household. After this, the census representative registered an official non-response and left the survey for the household to complete and send back to Statistics Canada. Due to the agreement between Statistics Canada and SNTC, and the use of community persons in the information collection exercises, most SNTC communities were politically and administratively co-operative.

The numbers in Tables 1 and 2 are the results of the 1991 census as found in SC 95-384. Because the results were reported by reserves and not by First Nation community,²⁰ the statistics staff of the SNTC aggregated the results for each community. Each aggregation was done twice to ensure accuracy.

Perhaps the best method to summarize the methodology employed by the Shuswap Information System (SIS) project team is to chronicle the experience with the term "economic leakage." Although the term is well-understood by economists, the twisted faces and groans of disgust that the SIS project team emitted on hearing the phrase suggested a connotation problem. After much discussion and evidence provided by the SIS project team, the principal researcher (an economist) finally agreed to use more appropriate community-sensitive terms in the survey exercises, such as "Community Economic Development Study."

Training for the initial researchers was conducted by the First Nations

Resource Research Council in Alberta and by Statistics Canada.²¹ Through time, however, and given its familiarity with the SNTC communities, SIS developed more community orientated approaches to information collection. These approaches appear in an SIS training guide developed for the Community Development Studies in the summer of 1992. It is hoped the guide will facilitate future survey research within the SNTC.

The surveys of relevance to this document were conducted in the summers of 1991 and 1992. An extract from the Canoe Creek study illustrates the methodology used:

The objective of the Shuswap Information System (SIS) is to help bands plan effectively by having access to timely, relevant, and accurate information. The underlying philosophy of the SIS is to engender an appreciation for information among community members to ensure its collection and usage at the community level. Furthermore for this particular survey when community members can appreciate the relevancy of the information collected they are likely to provide accurate information (assuming of course, that important issues such as confidentiality and information ownership are given full consideration).

Reliable information is especially relevant for an Economic Leakage study where the information is primarily used to reduce risk for potential on-reserve businesses. This information must be accurate to be of benefit to community members. The SIS team has developed a methodology to ensure the accuracy and relevancy of information collected from the Canoe Creek/Dog Creek band.

The first phase of this methodology is to secure administrative and community support. This was accomplished by:

- Meeting with the Chief, Council and Administration to explain the survey (brochure and slide presentation).
- Attending an Elders gathering hosted by the band. This was attended to become familiar with the community location as well as meeting the elders of the community.
- Contacting and meeting with community clubs and organizations like Women's groups, Youth groups, club organizers and family representatives.

Obtaining the support of these vital community members was necessary before embarking on the implementation of the Economic Leakage survey.

Camping within the community for 8 days, the SIS team employed the following implementation strategy:

- Setting up a temporary work station in the band community hall.
- Meeting with the administrator and securing a community map, phone list, and the number of households.
- Having continuous slide presentations throughout the first two days and evenings. Answering and clarifying questions, and concerns about the study.
- Contacting and arranging a convenient time and place with each household from the temporary work station.
- Explaining the relevancy and importance of this survey to all respondents at the time of interviews. [Le Dressay and SIS (1991)]

The methods for communication and information collection would be varied slightly by the SIS project team as the needs and structure of the particular SNTC community under survey warranted. For example, in some communities elders would be asked to introduce the researchers into households that were not comfortable with the exercise, or information would be collected for each reserve in the community (much like Statistics Canada) as opposed to for the community as a whole. There were, however, common methods employed for each study. The content of the survey was not significantly different from community to community.²² The SIS project team, like Statistics Canada, kept detailed response records, and limited its number of call-backs for each household to three. Most important, in each community the SIS project team stressed that the community owned the information.

Although similar response rates were not available for the Statistics Canada and INAC results,²³ Table 3 contains the response rates for the SNTC studies.

Evaluation

We are still left with the ultimate question: Who has the right numbers? This question is not as simple as it sounds. For example, population counts reflect a snapshot in time and, since the data were collected at different times, how can one be sure of the correct population? After all, like fish, people move. Houses, however, barring tornados, do not usually do so. Thus, all the administrators from the five SNTC communities were asked to confirm the number of dwellings in their communities in 1991. Unfortunately, new houses have been built and are currently being built since the completion of the studies, so the administrators were uncomfortable

with a precise 1991 figure. Furthermore, some of these communities have changed administrations since 1991. Alternatively, therefore, this question involves investigating the biases that may be a part of the information collection, information processing, and the output of each information collection group. The possible types of biases have been extracted from Statistics Canada data quality reviews.

Statistics Canada is widely recognized as the best statistical data gathering organization in the world.²⁴ To question the accuracy of its data could be heresy. Statistics Canada, however, is intimately aware of the potential problems with its data and openly suggests caution in its application at the sub-regional (First Nation community) level under discussion. More pertinent is the evidence that Statistics Canada has not been successful in enumerating Indian reserves. Although 1991 saw fewer unenumerated Indian reserves (71; see SC 95-384) compared to 1986 (126; see SC 94-119), the problem is far from solved. As Statistics Canada openly admits,

Table 3: SNTC Survey Response Summary

<u>Survey</u>	<u>Date of Survey</u>	<u>Instrument</u>	<u>Potential Respondents</u>	<u>Respondents</u>	<u>Response Rate (%)</u>
Adams Lake Household	July 1992	Household Expenditure and Human Resource Profile	72 Households	48 Households	67
Bonaparte Household	June 1992	Household Expenditure and Human Resource Profile	54 Households	35 Households	65
Skeetchest'n Household	May 1992	Household Expenditure and Human Resource Profile	39 Households	31 Households	79
Canoe Creek Households	August 1991	Household Expenditure and Human Resource Profile	49 Households	34 Households	69
North Thompson Household	May 1991	Household Expenditure and Human Resource Profile	75 Households	345 Households	60

[T]hroughout all collection and processing operations, the resulting estimates are invariably subject to a certain degree of error. . . . Errors can arise at virtually every stage of the census process from the preparation of materials, through the listing of dwellings and data collection to processing. Some errors occur more or less at random, and when the individual responses are aggregated for a sufficiently large group, such errors tend to cancel out. . . . It is for this reason that users are advised to be cautious when using small estimates. [SC 95-384, p. 248]

Statistics Canada lists five types of errors that may have occurred in the census: processing, sampling, coverage, non-response and response errors. It is impossible to judge any errors in processing or sampling²⁵ for the five SNTC communities in question, so Statistics Canada will be judged on its other three types of possible errors: coverage, non-response and response.

"Coverage errors occur when dwelling and/or individuals are missed, incorrectly included or double counted" (SC 95-384, p. 248). By using persons from the SNTC communities it was obviously Statistics Canada's intention to minimize this type of error. Unfortunately, dwellings in First Nation communities are often difficult to find and access. It is crucial to have the full co-operation of the particular First Nation community to avoid any coverage errors. Despite its efforts and its community-based staff, history suggests that it is unlikely that Statistics Canada would be able to receive the full community co-operation necessary to avoid coverage errors. It is probable, therefore, that coverage errors biased Statistics Canada estimates downward for the five SNTC communities.

"Non-response errors result when responses cannot be obtained from a small number of households and/or individuals because of extended absence or some other reason" (SC 95-384, p. 248). There are a variety of reasons for persons to be absent from First Nation communities ranging from employment to education to cultural reasons. Also, although the SNTC supported the conduct of the 1991 Census in its communities, certain individuals or households within those communities might still refuse to participate. It is inconceivable that the necessary trust between Statistics Canada and all the households within these five SNTC communities could be rebuilt as a result of a letter of agreement. The existence of such non-response errors would further bias the estimates downward.

"Response errors occur when the respondent, or sometimes the Census Representative misunderstands a census question and records an incorrect response" (SC 95-384, p. 248). Obviously, it is impossible to decipher how each respondent or interviewer interprets a census question. However,

subsequent discussions with some respondents indicate that some persons within these five SNTC communities felt that the census information might be used as a basis for future personal taxation. As such they felt compelled to underreport the number of employed persons in their household, or the level of employment.²⁶ In this event community estimates would once again be biased downward. An example of this bias in the Statistics Canada estimate can be found in the percentage change in population between 1986²⁷ and 1991 for the Bonaparte 3 reserve (-4.7 percent) and the Lower Hat Creek reserve (-15.5 percent). Such decreases would seem impossible given the amount of new construction in these communities to accommodate C-31 reinstatements. However, an anomaly to this downward bias hypothesis would appear to exist in Skeetchest'n, where Statistics Canada has the highest population estimates.

The only certainty is that Statistics Canada does indeed have suspect First Nation population statistics. And this comes after Statistics Canada put its credibility on the line in an attempt to gain First Nation co-operation in the 1991 Census. As one report put it,

What we [Statistics Canada] are offering—and it can't be bought for money—is our reputation for providing reliable and objective data. Such reputation can only be earned over a long time. . . . [T]he data would not have the same credibility that the name Statistics Canada confers. [*Report on the Joint Conference on a First Nations Data Base and the 1991 Census and Post-Censal Programs* (1990), p. 34]

Every First Nation community plays the funding game, with or against INAC. There are a variety of strategies in this game with some being more successful (yielding more funding for the community) than others. Despite the obvious benefit to First Nations it is beyond the scope of this paper to evaluate the variety of strategies employed to secure greater funding from INAC by individual First Nations. Suffice it to say that a First Nation community's population is directly linked to the amount of funding it receives,²⁸ and as such these numbers are subject to the game. The rules of the game are simple. INAC wants a First Nation population to be as low as possible, and the First Nation wants its population to be as high as possible. On the INAC side are the checks and balances discussed in the methods section, and on the First Nation side are the skills, guile and strategy of their local administration.

The game, however, is ongoing and the revelation of a specific community's strategy in a published document would be detrimental to its source. For the reader's enjoyment, however, a few anecdotes follow.

From a strategic perspective, the real game is not played with the

membership list submitted to INAC, but with the social assistance and various education lists used to verify the membership list. The membership list, due to continual births, deaths, C-31 reinstatements and migration, make it easy to maximize the number of "band members." It is just a matter of waiting for the right time to report the largest population on the membership list. The trick is to inflate the social assistance and education lists with as many "non-appropriate" individuals as possible. Verification of the higher membership list is thus more likely. Interestingly enough, this particular strategy was developed by an employee of INAC and relayed to a "favourite" First Nation administrator.

Along a similar vein, one of the more interesting strategies for some First Nation is the employment of former INAC employees, especially former Indian Agents, as administrators. Their ability to manipulate the system is well known by most First Nations. Another strategy involves intimidating INAC by asserting that the suspect population numbers are a product of an inherent right to self-government. Yet another strategy depends on demonstrating fiscal competency and management skill, which somehow infers credibility in population numbers.

Of course, to each of these strategies INAC has a counter, the most significant of which is the final say on any dispute. So, although there were other strategies, it is only worth noting that when First Nations administrators were asked if the correct numbers were ever submitted, most replied that honesty doesn't pay. Hence, it has become clear that a considerable bias exists in the numbers produced by INAC. Unfortunately, for the purpose of a more thorough investigation, reports on the information processing and data management of INAC were unavailable.²⁹

As in the case of Statistics Canada, the SNTC methods are subject to a number of bias types. Coverage is one problem. By directly involving the community leaders and the administration, and by developing a presence in the community, the SIS project hoped to reduce significantly this form of bias. It is impossible to eliminate completely such bias, however, due to the nature of First Nation communities. It is likely that if such errors did occur, they were omissions of dwellings and persons that would bias the SNTC studies results downwards.

Another difficulty is lack of response. This certainly occurred in the SNTC studies, seemingly because a significant proportion of the community's population was probably absent for reasons of seasonal employment, schooling and other such factors. Since most of the household surveys were conducted in the summer, the potential for missing persons due to seasonal employment, hunting and fishing existed. However, a number of students not normally on reserves may be present during this time, so it is difficult

to ascertain fully the direction of this bias. Since the SNTC does not know the direction of this particular bias, extreme caution is recommended in placing too much credence in the population estimates in Table 2.

Biased responses represent third problem. A primary objective of the SIS project team was to dramatically reduce respondent bias through more community-orientated information collection techniques. The SIS team also tried to reduce its own interpretive bias by standardizing the SIS training manual in 1992. The surveys conducted in 1991, however, may contain bias as many of the questions in the surveys are subject to varying interviewer interpretations. It should also be pointed out that many Shuswap (likely many First Nation) communities were and are still suffering from survey fatigue.³⁰ Despite the best intentions, the SIS project team was subject to the frustrations of some respondents. Thus, it is difficult to infer the bias direction.

Finally, processing errors were a factor. The SIS project team did not apply the same methodological rigour to this portion of data collection that Statistics Canada would have. The data bases were designed and the data were entered usually by one or two SIS project team members. The data were then reviewed by the principal researcher to check for any flagrant errors. Certainly errors would occur. Their direction is unknown.

Based on this methodological review it is impossible to discern which source(s) is (are) guilty of producing unreliable statistics. This, though, is not the end of the investigation because significantly more insight into the nature of the sources can be drawn from a simple and related question: Are you satisfied that you achieved your objective by collecting this information? The various players, of course, have their own personalities and each employs strategies to further his own interests.

The government of Canada mandates Statistics Canada to enumerate the population of Canada every five years. Although it is seldom used, legislation exists that makes non-compliance with the census an offence punishable with a fine. Since the government of Canada has a fiduciary responsibility for the First Nations within Canada, it is important to enumerate all persons on lands reserved for Indians. Although Statistics Canada had failed in 1981 and 1986 to enumerate the communities of the SNTC, in the 1991 census it was determined to do so on a partnership basis: "We are committed to complete coverage in our census and other survey taking activities. To accomplish that end, we absolutely need First Nations' help in terms of participating in the 1991 Census and other surveys" (Report, 1990, p. 35). Achieving this objective, however, was not costless. Statistics Canada in an effort to ensure participation in the 1991 census by First Nations made several promises to the Assembly of First Nations in

particular and to First Nations in general. Some of these promises should probably be considered objectives:

- (1) to provide technical assistance in the development of a First Nations Data Base
- (2) to provide statistical data for a First Nations data base from the 1991 Census, the post censal survey on aboriginal peoples, . . . and from other Statistics Canada data sources.
- (3) to allow for participation in the development and implementation of the post censal survey on aboriginal peoples and
- (4) to establish an internship program for aboriginal peoples at Statistics Canada to develop expertise in accessing and using statistical information. [Report, 1990, p. 3]

Statistics Canada has largely met the first three objectives. It has yet to establish an internship program for Aboriginals. Not satisfied, however, Statistics Canada threw in a veritable vat of potential uses that First Nations might make of the census data. As such, these must be considered objectives as well.

Of particular interest in this brief review of basic demographic information in five SNTC communities is the emphasis upon the social utility of the figures collected:

Demographic information should allow First Nations to measure their dependent population, to assess and project the need for schools for the young and for health and social service facilities for the old. Demographic data should help project the growth of aboriginal populations and labour force. [Report, 1990, p. 13]

To date, Statistics Canada has only released SC 95-384. This contains the basic demographic information for the reserves that comprise the five SNTC communities under investigation. It is difficult to determine if First Nations presently use this data at the community level, despite Statistics Canada's own warning against doing so. More disconcerting is that if they do actually use this data, as Statistics Canada suggests they could, the quality of their decisions would be suspect.

For comparison purposes, the population of Canoe Creek has been divided into eight age cohorts (ages 0-4, 5-9, 10-14, 15-19, 20-24, 25-34, 34-64 and 65 & up). Dividing the total population (for Statistics Canada)³¹ and the sample population (for SNTC) by the numbers of persons in each cohort produces the percentage that cohort makes up of the population (census) or sample (SNTC). The dramatic differences can be charted as in Figure 1.

As a Canoe Creek leader, how would you project the need for schools and health services? Especially if you knew that both data collection organizations were subject to bias?³²

In comparison to the goals of Statistics Canada, INAC's objective for collecting First Nation community population figures is for administrative purposes. These numbers are useful for allocating funding for First Nation government administrations, education programs, social assistance and capital project management. The five SNTC communities under consideration in this study are intimately familiar with the various INAC funding formulas, and how their population figures factor into the equation. In this respect INAC achieves its objective of collecting population counts for First Nations.

Money is directly linked to the community development capacity for all First Nations. By extension, therefore, so are these INAC population figures. If all players know the goals and the rules of the games, these population figures become a community development pawn rather than a community development tool.³³ For community planning, these figures would likely be inappropriate. This, though, is not the objective of INAC.

As might be expected, the goals of the SNTC communities were community-based. For each of the community economic development studies for these five SNTC communities, a report is produced. At the beginning of each of these reports appears the following, which has been altered slightly to be representative:

The following document is intended to serve as an economic and social development planning tool for the Shuswap People of _____. The contents of this report are the property of the Shuswap People of _____ to use as it deems appropriate. The data contained in this report was gathered and compiled by the Shuswap Nation Tribal Council's Shuswap Information System (SIS) team. The Chief and council of the Shuswap People of _____ are in no way obligated to agree with any opinions, assumptions, or recommendations made by the SIS team within the body of this report.

This study is intended to provide the Shuswap People of _____ with:

- An estimate of the household spending power on the reserve
- The ability to assess the potential for on reserve businesses
- Enhanced potential for joint venture development
- Important community development indicators and information [Le Dressay and SIS, 1991 and 1992]

These goals were directly related to the high unemployment which characterize First Nations communities. Not surprisingly, economic development is a priority for most SNTC communities. The intent of the SNTC studies was to provide an information and planning base for community economic development and hopefully animate persons within the SNTC communities to act on economic development initiatives.

Although some communities have used this information better than others, all communities asked the SIS project team for a follow-up report.³⁴ More impressively, an entire Shuswap summit (seventeen Shuswap communities) was held in February 1993 to discuss the results of these studies and to formulate Shuswap Nation-wide economic development strategies. As a result, some communities began to establish convenience stores and a number of ideas, such as stationary stores and travel agencies, are well into the development phase.³⁵ The SNTC would appear to have met this particular objective.

Although not explicitly stated in a report, the long-term objective of the SNTC and of SIS is to evolve their capacity to engage in First Nation research. It is tragically ironic that not only are First Nations being researched to death, but they pay someone else to do it. A long-term objective of SIS and RI²MS involves developing information collection methods that are sensitive to First Nations.

Clearly, Statistics Canada and the SNTC are asserting that their information will be useful to First Nation communities, and implicit in the assertion is that their data will be timely enough to be relevant. Table 4 indicates when the information was collected, what output from the information collection exercise has been received and when that output was delivered.

Another aspect of First Nation information is its cost. In these times of budget cuts and government austerity, it is important to know which suspect provided the best value for the money. A principal argument against self-(smaller) government is its inherent diseconomies of scale. Since two larger, more economical agencies (Statistics Canada and INAC) collected information similar to that of a smaller information collection organization, the question of cost has academic implications well beyond the scope of suspect statistics. Unfortunately, it is not only difficult to ascertain precisely how much money was spent on the collection of the information from the five SNTC communities in question, but, due to the divergent objectives, it is difficult to decipher the value of the information collected.

Alternatively, it is proposed that estimates be formed for the collection, processing and output development of each suspect. Since ten SNTC

Table 4: Timeliness of Product Development

SNTC Community	Date of Survey			Output Received			Date Output Received		
	SNTC	INAC	SC	SNTC	INAC	SC	SNTC	INAC	SC
Adams Lake Household	July 1992	Dec. 1991	June 1991	CED for SPAL	B.C. Reg pop	SC 95- 384*	Oct. 1992	June 1992	April 1993
Bonaparte Household	June 1992	Dec. 1991	June 1991	CED for SPB	B.C. Reg pop	SC 95- 384	Oct. 1992	June 1992	April 1993
Skeetchest'n Household	May 1992	Dec. 1991	June 1991	CED for SPS	B.C. Reg pop	SC 95- 384	Oct. 1992	June 1992	April 1993
Canoe Creek Household	August 1992	Dec. 1991	June 1991	CED for CCIB	B.C. Reg pop	SC 95- 384	Nov. 1991	June 1992	April 1993
North Thompson Household	May 1992	Dec. 1991	June 1991	CED for NTIB	B.C. Reg pop	SC 95- 384	June 1991	June 1992	April 1993

Notes

- * Statistics Canada is proposing to release a plethora of specialized Aboriginal statistics later in 1994 (see Information Package on Aboriginal Products from the 1991 Aboriginal Peoples Survey and the 1991 Census of Population - Statistics Canada). The post censal aboriginal peoples survey was conducted in October 1991. The quality and potential use of these products would have to be evaluated separately. It should be noted, however, that the post census exercise is intrinsically connected to the census through personal identification of aboriginal decent.

INAC - Indian and Northern Affairs Canada

SC - Statistics Canada

CED for SPAL - Community Economic Development Study for the Shuswap People of Adams Lake

CED for SPB - Community Economic Development Study for the Shuswap People of Bonaparte

CED for SPS - Community Economic Development Study for the Shuswap People of Skeetchest'n

CED for CCIB - Community Economic Development Study for the Canoe Creek Indian Band

ELS for NTIB - Economic Leakage Study for the North Thompson Indian Band

In addition to these studies, the SNTC has also produced: *An Employment and Expenditure Study of Shuswap Governments and The Value of Co-operation - A Case Study of Six SNTC Communities*

communities formed a special census area, it is much easier to estimate Statistics Canada's costs for ten SNTC communities rather than for five. Furthermore, the SNTC completed all of its community economic studies in the summer of 1993, so actual costs are available for the ten communities. INAC costs can be easily extrapolated to ten communities as well. It must be stressed that these estimates represent best guesses and should be treated with caution:

Statistics Canada. Three types of costs are estimated for Statistics Canada in the census exercise³⁶ for the ten SNTC communities: marketing, census collection, and processing and output production. The most conservative estimates were used.

Marketing:

Letter of Agreement Development - Travel (trip to Kamloops) and personnel ³⁷	\$ 7,000
Post-census discussion in Kamloops (bill sent to Statistics Canada from SNTC)	\$ 4,500
B.C. regional liaison staff (travel and personnel time) ³⁸	\$ 6,900
Post-census pre-test (SNTC staff, training and Ottawa personnel) ³⁹	\$ 4,800
Overhead @ 10% of total	<u>\$ 2,300</u>
Subtotal for marketing	\$25,500

Census collection

3 managers @ \$2000 per month for 3½ months	\$21,000
11 census representatives @ 1500 per person	\$16,500
Travel @ 20% of wages	\$ 7,500
Overhead @ 10% of total	<u>\$ 4,400</u>
Subtotal for collection	\$48,400

Output production

Budget for Statistics Canada (Public Accounts 1989-90) ⁴⁰	\$245 million
Expenditure per capita @ 26 million persons	\$ 9.42
Population of 10 SNTC communities (INAC estimates 1992) ⁴¹	2,489
Cost per year for product development	\$23,446
# of years including census year to develop product	<u>3</u>
Cost for product development	\$70,339
Total cost estimate for Statistics Canada	\$144,239

INAC.

Average cost of membership clerk per community (expert opinion)	\$1,500
# of communities	10
Total membership clerk salary	\$15,000
Average salary of 3 employees at B.C. regional officer to process (assumption)	\$35,000
% of B.C. on-reserve Aboriginal population for SNTC communities (guess)	10%
Estimated cost for SNTC membership processing	\$10,500
Administration, at 20% of cost (many forms to complete and Ottawa cost)	<u>\$10,100</u>
Total cost for SNTC population estimates for INAC	\$35,600 ⁴²

SNTC. The community economic development studies required funding from a variety of sources listed below. This is all the funding the SNTC received to complete all ten of the community economic development studies by the fall of 1993.

Cost of funding pursuit (admin and salary) ⁴³	\$12,000
ISTC (research program)	\$48,000
Department of Finance (taxation study)	\$10,000
SFU Co-op program	\$ 5,000
SNTC contributions	\$15,000
B.C. provincial government	\$ 9,500
Employment and Immigration Canada	<u>\$ 7,000</u>
Total for SNTC community economic development studies	\$106,500

Although comment on these numbers is reserved, it is worth considering that in its marketing of the 1991 census, Ivan Fellegi of Statistics Canada claimed the following:

Statistics Canada provides very large cost savings. Survey taking, in general, and Census taking in particular, are extremely expensive operations, the cost of which Statistics Canada normally assumes, at least in the case of the census. If AFN were to "go it alone," activities such as content development, questionnaire design, map preparation, computer systems and training would cost in the order of tens of millions of dollars—assuming the appropriate expertise could be found. [Report, 1990, p. 31]

Conclusion

In the course of this investigation three First Nation statistical sources were evaluated on the basis of their methods, accuracy, objectives, timeliness and cost effectiveness. Table 6 summarizes their subjective performance in each category.⁴⁴ The more suspect a source the lower its rank. The subjective justification for these rankings appears below.⁴⁵

For accuracy it is impossible to differentiate between Statistics Canada and the SNTC. Both were subject to possible bias. Moreover, comparisons between normalized⁴⁶ SNTC population counts and Statistics Canada counts that included the suppressed populations reveal very little difference. Statistics Canada, however, did not include in SC 95-384 dwelling counts for its suppressed population counts, rounded specific populations and apparently did not include the Shuswap people of Adams Lake. The process for collecting the INAC data has too many motivations for subterfuge to consider it accurate.

Suffice it to say that caution should be exercised before placing too much credence in the statistical data of these First Nation communities from any of the three sources. By extension from these "best case" communities, extra caution is necessary for all First Nation statistics at every level of aggregation collected by Statistics Canada or INAC.

In regards to the second criterion for evaluation, INAC has a simple objective and achieves it. The SNTC is still in the process of attaining its goals for its research. If the issue were the nobility of objectives these rankings would be reversed. Statistics Canada made promises for data usage for which it simply can not be held accountable.

SNTC averages about two months from information collection to delivery of a detailed community economic development report to the SNTC community. INAC takes six months to produce a one-page population count report. Statistics Canada takes two years to produce a first report and then it takes detective-type guile to compile statistics for the relevant SNTC communities.

Table 6: The Guilt Index

<u>Criterion</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>
Accuracy	Statistics Canada & SNTC		INAC
Objectives	INAC	SNTC	Statistics Canada
Timeliness	SNTC	INAC	Statistics Canada
Cost Effectiveness	SNTC	Statistics Canada	INAC

The SNTC produces detailed community-specific reports with a bevy of data, statistics, analysis and suggestions for less cost than Statistics Canada spent to produce the SNTC community results in SC 95-384. Of course, further specific Statistics Canada reports for these SNTC communities can undoubtedly be produced—for a price. It should also be noted that a substantial amount of Statistics Canada expenditures went towards marketing the census. INAC produces a single-page report on population counts at a rather insignificant cost.

So what? It is not particularly startling to suggest that First Nation data is suspect, and that the First Nation bureaucracy is inefficient. An important inference, however, is that the solution may rest in Aboriginal self-determination. First Nations would like to have more autonomous decision making power over "all matters of moment" at the community level. Some might call this self-government. A vital building block for governments is information.⁴⁷ For First Nations this will undoubtedly include complementing historical and cultural information with more contemporary statistical or geo-referenced information.⁴⁸

If the government of Canada is serious about the inherent right to First Nation self-government, then the building of this foundation must be taken seriously. The results of this paper indicate that such intent does not exist on the part of Statistics Canada and INAC. Nevertheless, this paper demonstrates that substantial benefits can be achieved (cost effectiveness, accuracy, timeliness, information usage, etc.) by letting First Nations develop their own information management methods. It would be naive to suggest, however, that the necessary capacity currently exists for First Nations to simply occupy the information field. Co-operative management between federal government agencies and First Nations may be a viable mechanism to build this capacity. The focus in the future of such arrangements must be about building government capacity within First Nations and not achieving the objectives of the particular federal agency. As Cornell and Platt put it,

The implication for [First Nations] is clear. The strategic political and economic choices tribes make, and the adequacy and appropriateness of those choices, will determine to a significant degree their success or failure in achieving their development goals. For federal policy makers the fundamental issue is simpler. To the extent that federal policy reinforces the legal, political and institutional foundations of tribal sovereignty, it increases the chances that tribes can find their own pathways. [1989, p. 42]

Notes

This paper is the result of two and a half years of research at the Shuswap Nation Tribal Council (SNTC). The evolution of this research is a result of the tireless effort and vision of the chiefs of the SNTC, and especially Robert Manuel, the former executive director of SNTC. Extensive background work and research was conducted by Verna Billy and Louisa Celesta (the original SIS). Review of the paper's content was provided by Freda Jules and Donnie Seymour. Technical support was supplied by Shawn Reinhart, and extensive editorial work was provided by Niall McCullough. The author, however, is solely responsible for any omissions or errors and opinions contained in this paper.

- 1 The SNTC consists of the Shuswap communities of Adams Lake, Bonaparte, Canoe Creek, High Bar, Kamloops, Neskanlith, North Thompson, Neskanlith, Spallumcheen, Skeetchest'n and Whispering Pines.
- 2 This was a culmination of eight years of political pressure and negotiations with Statistics Canada and the Department of Indian and Northern Affairs.
- 3 This was taken from the Shuswap Memorial, presented to Prime Minister Wilfred Laurier, by the Chiefs of the Shuswap, Okanagan and Couteau Tribes of B.C., 25 August 1910. This document forms the philosophical underpinnings of the SNTC.
- 4 Until recently all members of SIS were women and co-op students from the Simon Fraser University (SFU) degree programs. SFU in partnership with the Secwepmc Cultural Education Society operates a university (current enrolment approximately 200) on the Kamloops reserve.
- 5 The post census took place after the census and used as its population only those people reporting Aboriginal decent on the census.
- 6 Although certainly relevant to this document, it is well beyond the scope to review the entire historical relationship between First Nations and INAC. For alternative viewpoints, see any INAC annual report over the last 20 years or Manuel and Poslums (1974).
- 7 SNTC membership clerks said in interviews that generally only two days' notice is given by INAC to First Nations to produce these membership lists. Notice might be given any time later in the calendar year.
- 8 Self-government will certainly involve the development of institutions culturally and historically appropriate for the particular First Nation. The actual development and operation of these institutions will probably involve statistics (see Cornell and Platt, 1989).
- 9 For example, the central district of B.C. includes 39 First Nation communities.
- 10 Generally this would involve the administration of social assistance and education funding to First Nation persons in need, and the administration of housing and capital projects within First Nation communities.
- 11 Not surprisingly, for political and administrative reasons this sparked the evolution of tribal councils. The tribal council is not generally a First Nation cultural creation.
- 12 INAC still administers membership for some First Nations.
- 13 The number of forms for First Nation administration is truly phenomenal. All the forms produce a pile over three inches thick.

- 14 Bill C-31 was passed in 1985 to amend the Indian Act to clarify and expand the definition of status Indian in Canada.
- 15 To demonstrate the extent of actual bureaucratic devolution that has taken place, population counts are kept using old district codes. Some interviews revealed that the only difference was that the Indian agent was in Vancouver instead of Kamloops (Verna Billy interview, 1993).
- 16 The major point of disagreement was the ownership of the information. In the agreement the SNTC capitulated to the Statistics Canada argument concerning privacy of information (interview with Robert Manuel, 1991).
- 17 All individuals nominated by the SNTC were subsequently subject to Statistics Canada standards.
- 18 It should be stressed that, in interviews with Robert Manuel, the Shuswap Nation Tribal Council executive director, Statistics Canada has lived up to all aspects of the agreement, except a vague promise to provide internship positions to persons selected by the SNTC.
- 19 One from each SNTC community and two from Kamloops.
- 20 For example, Bonaparte community includes Bonaparte reserve #3, Upper Hat Creek and Lower Hat Creek. Each of these reserves appeared separately in SC 95-384.
- 21 The First Nation Resource Research Council was the one of the original designers of an earlier research tool, and Statistics Canada provided training on the principles of information collection as part of the post-census survey pre-test.
- 22 Each community had different concerns that the SIS project team would accommodate in their research. The basic survey, however, was not altered significantly from community to community.
- 23 Statistics Canada indicates in its results if the non-response rate was over 5 percent or over 25 percent. No such indications were given for the community statistics appearing in Tables 1 and 2. One is left to assume that INAC is confident that it received 100 percent response rates.
- 24 This is stated on a number of their own newsletters and supported by *The Economist*.
- 25 On Indian reserves a 100 percent sample is taken, so there is no possibility of sampling errors.
- 26 The survey instrument is important in reducing response errors. To aggregate individual responses, Statistics Canada must standardize its census questionnaire. A number of First Nations persons maintain that this standardization does not reflect their unique socio-economic circumstances and cultural identity.
- 27 Although the communities of the SNTC did not officially participate in the 1986 census, census representatives did attempt to enumerate all the SNTC communities. A degree of success was obviously achieved in Bonaparte in 1986. Given the certain population increase in Bonaparte 3 and Lower Hat Creek between 1986 and 1991 due to Bill C-31, these negative percentage changes alone call into question the accuracy of the Statistics Canada population estimates.

- 28 This is especially true for on-reserve populations, which entails greater administrative and capital funding for the particular First Nation.
- 29 A highly placed official in the Quantitative Analysis and Research Branch of INAC has already confirmed that significant data management problems exist in the various data bases INAC keeps.
- 30 In one Shuswap community, five surveys were conducted between April and October, 1991.
- 31 To make this exercise even more preposterous, Statistics Canada has rounded the age cohort figures to the nearest five to protect confidentiality. This fact was accounted for in the calculation of the cohort proportions. Of course, if Canoe Creek would like the actual figures, it could pay Statistics Canada for a special custom tabulation.
- 32 An interesting aspect of this whole issue is the lack of accountability of Statistics Canada. What in all honesty could Canoe Creek do if it made a poor decision by using Statistics Canada data? Other than other professional statisticians, to whom does Statistics Canada answer?
- 33 At issue, of course, isn't the ability of INAC to achieve an administrative goal, it is the nobility of the goal in the first place. The SNTC is aware of the paper circle INAC forces many First Nations to run around. The development of the RIMS software by the SNTC, with data fields customized to the information needs of First Nations, is intended to solve this fundamental barrier between First Nation administration and effective First Nation government.
- 34 The SNTC will undoubtedly be held accountable when its estimates are employed by an SNTC community.
- 35 Interestingly enough, a number of the burgeoning Shuswap entrepreneurs are coming from former SNTC staff and politicians. The reasons for this would be best explored in another paper.
- 36 The cost of the entire 1991 Census was estimated at \$250 million by Andy Siggner. See *Report on the Joint Conference on a First Nations Data Base and the 1991 Census and Post-Censal Programs* (1990), p. 8.
- 37 It is assumed that a round trip and accommodation to Kamloops from Ottawa costs \$2,000, and that \$50,000/year employees spent 5 percent of their time on this agreement. These are conservative estimates.
- 38 A Native liaison for the interior of B.C. was hired on a one-year contract to facilitate the conduct of the 1991 census within the Shuswap Nation. This figure assumes this individual received a salary of \$30,000, and that 15 percent of his or her time and six trips to Kamloops @\$400 per trip were made in the course of his or her job. Judging by the amount of time spent by this individual in Kamloops, this is a low estimate.
- 39 This was a "perk" given to the SNTC for participating in the 1991 census. It involved four SIS team members (\$700 per week), and at least one person from Ottawa (just cost of trip included).
- 40 In a non-census year this budget is assumed to represent product development. Inflation was not taken into account, which makes this estimate more conservative.
- 41 These are probably the lowest population counts available.

- 42 For this amount of money INAC only produces population counts in six categories.
- 43 This assumes two months of a \$36,000/year salary, \$5,000 in travel and \$1,000 in overhead in the pursuit of funding for these projects.
- 44 A better sleuth would have used deductive methods.
- 45 It is incumbent on INAC and Statistics Canada to respond to these rankings on review of this paper.
- 46 In as much as these were global surveys with non-responses present, research would have to be done on the non-response section to legitimately normalize these results.
- 47 The legitimacy of First Nations governments, in the view of their own communities and the surrounding non-First Nations communities, will be linked to quality of their decision making and by extension the quality of the information they base those decisions on.
- 48 For a discussion of these ideas see, Anderson et al. (1990) or Le Dressay (1993).