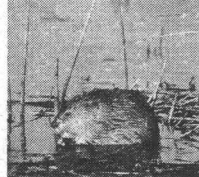
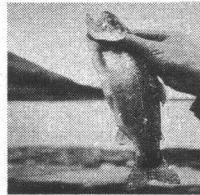


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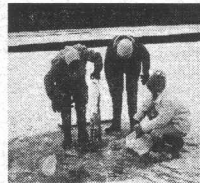
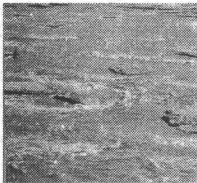


Northern River Basins Study



NORTHERN RIVER BASINS STUDY PROJECT REPORT NO. 1
MINK CONTAMINANTS STUDY
 FIELD COMPONENT
 JANUARY TO MARCH, 1992

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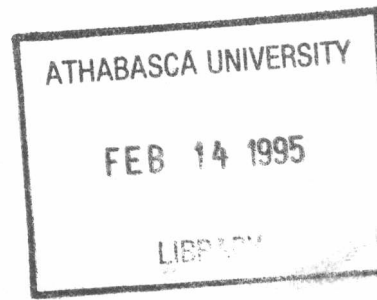


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by
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PREFACE:

The Northern River Basins Study was initiated through the "Canada-Alberta-Northwest Territories Agreement Respecting the Peace-Athabasca-Slave River Basin Study, Phase II - Technical Studies" which was signed September 27, 1991. The purpose of the Study is to understand and characterize the cumulative effects of development on the water and aquatic environment of the Study Area by coordinating with existing programs and undertaking appropriate new technical studies.

This publication reports the method and findings of particular work conducted as part of the Northern River Basins Study. As such, the work was governed by a specific terms of reference and is expected to contribute information about the Study Area within the context of the overall study as described by the Study Final Report. This report has been reviewed by the Study Science Advisory Committee in regards to scientific content and has been approved by the Study Board of Directors for public release.

It is explicit in the objectives of the Study to report the results of technical work regularly to the public. This objective is served by distributing project reports to an extensive network of libraries, agencies, organizations and interested individuals and by granting universal permission to reproduce the material.

Appendices E, F and G, which contain names and addresses of individual trappers are not included in this publication.

**NORTHERN RIVER BASINS STUDY
PROJECT REPORT RELEASE FORM**

This publication may be cited as:

Horstman, L.P., and Code, T.E., Pecan Resources Inc., *Northern River Basins Study Project Report No. 1, Mink Contaminants Study, Field Component, January to March, 1992*, Edmonton, Alberta, Canada, October, 1992.

Whereas the above publication is the result of a project conducted under the Northern River Basins Study and the terms of reference for that project are deemed to be fulfilled,
IT IS THEREFORE REQUESTED BY THE STUDY OFFICE THAT;
this publication be subjected to proper and responsible review and be considered for release to the public.



(D. W. Ferrier, P.Eng., Study Director)

Nov. 30/92
(Date)

Whereas it is an explicit term of reference of the Science Advisory Committee "to review, for scientific content, material for publication by the Board",

IT IS HERE ADVISED BY THE SCIENCE ADVISORY COMMITTEE THAT;
this publication has been reviewed for scientific content and that the scientific practices represented in the report are acceptable given the specific purposes of the project and subject to the field conditions encountered.

SUPPLEMENTAL COMMENTARY HAS BEEN ADDED TO THIS PUBLICATION: [] Yes [] No



(Dr. P. A. Larkin, Ph.D., Chair)


Dec 7/92
(Date)

Whereas it is the duty of the Operations Committee to attend to the day-to-day management of the Study on behalf of the Study Board,


IT IS THEREFORE RECOMMENDED BY THE OPERATIONS COMMITTEE THAT;
this publication be released to the public and it is reported that
THIS PUBLICATION HAS BEEN FORWARDED TO APPROPRIATE HEALTH AUTHORITIES FOR A HEALTH ASSESSMENT: [] Yes [] No

Whereas the Study Board is satisfied that this publication has been reviewed for scientific content and for immediate health implications,
IT IS HERE APPROVED BY THE BOARD OF DIRECTORS THAT;

this publication be released to the public, and that this publication be designated for: [] **STANDARD AVAILABILITY** [] **EXPANDED AVAILABILITY**


(Bev Burns, Co-chair)

29/3/93
(Date)


(Peter Melnychuk, Co-Chair)

29/3/93
(Date)

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MINK CONTAMINANTS STUDY

Field Component

1.0 INTRODUCTION

This is the final report of the field component of the mink contaminants study conducted from 31 January - 31 March 1992 by Pecan Resources Inc. for the Northern River Basins Study.

The basic objectives of this study were to obtain mink carcasses from the 1991/92 trapping season for laboratory analysis and to provide detailed procedural recommendations for mink carcass collection in 1992/93.

As summarized from the Terms of Reference for this study, the contractor was to:

- 1) Follow up previous contacts made by the Canadian Wildlife Service (Saskatoon) with registered trappers and government personnel regarding mink carcasses available from the 1991/92 trapping season.
- 2) Obtain the above carcasses and export permits; label carcasses with the requisite information, and ship to CWS - National Wildlife Research Centre in Hull, Quebec, ensuring that they remain frozen.
- 3) Contact individual RFMA (Registered Fur Management Area) holders in each of the 11 study sites below regarding their willingness to trap on the mainstem rivers in 1992/93 and assess the likelihood of their obtaining mink from these sites:
 - (1) Peace-Athabasca Delta
 - (2) downstream from SUNCOR site on the Athabasca River
 - (3) upstream from Fort McMurray
 - (4) downstream from Athabasca (ALPAC mill site)
 - (5) upstream from Athabasca but downstream from the confluence of the Athabasca and Lesser Slave Rivers
 - (6) downstream from Hinton (Weldwood mill)
 - (7) upstream from Hinton or on associated feeder creeks and ponds
 - (8) downstream from Peace River (Daishowa)
 - (9) upstream from Peace River on the Peace River

- (10) downstream from Grande Prairie (Procter and Gamble mill) on the Wapiti and Smoky Rivers
 - (11) upstream from Grande Prairie on the Wapiti River or in associated feeder creeks and ponds.
- (Sites limited to 150 km with 20-km buffer zones maintained around towns and mills)

4) Provide detailed reports on:

- a) all carcasses collected (trappers' name, address, phone number, RFMA, study site code, specimen code, date trapped trapping location, latitude, longitude, date shipped to NWRC);
- b) registered trappers who are interested in obtaining mink in 1992/93 (as per item #3 above) either during the regular trapping season or by contract trapping under research permit; and
- c) procedures for obtaining mink carcasses in 1992/93.

2.0 PROCEDURE

2.1 Mink Carcass Collection and Shipment

All persons initially contacted by M. Wayland of CWS Saskatoon were contacted again to determine whether mink carcasses suitable for analysis from the 1991/92 trapping season had been obtained. Ten carcasses were identified in this manner and following consultation with M. Wayland it was determined that they were acceptable. Six were shipped by air freight to Edmonton and the remaining four were picked up by Pecan Resources. Local Alberta Fish and Wildlife personnel and Canadian Park Service personnel were most helpful in this and other phases of this project.

While contacting RFMA holders during the next phase of this project, it was found that three additional mink carcasses were being stored for the study by trappers who had heard of the program but had not notified anyone of their carcasses. Following consultation with M. Wayland, these carcasses were also collected.

Prior to shipping the carcasses to NWRC, a specimen code label was attached to the outside of the tinfoil in which each carcass was wrapped, and the carcass was put into a plastic bag tied with wire to which a second identical label was attached. The specimen coding system (modified slightly

from the Terms of Reference following conversation with M. Wayland) is as described below:

study site no- month trapped-yr trapped-trapline no-our no (1-13)

(example: 02-01-92-2211-13)

The study site numbers correspond to those listed in Section 1.0 above.

The carcasses were packed in a vented container filled with dry ice. Because of inconvenient airline arrival times in Hull, previous experience with shipments on dry ice, and the severity of penalties to the original shipper for incorrect packaging or labelling of a dangerous good (i.e. solid carbon dioxide), shipments were made via a professional expediting service in Edmonton.

2.2 Survey of RFMA Holders

RFMA's along the Peace, Athabasca, Wapiti and Smoky rivers in the 11 study sites listed above were identified via RFMA maps. Names of persons holding these RFMA's were provided by Alberta Fish & Wildlife and CWS-Saskatoon. An attempt was made to contact every RFMA holder thus identified by phone regarding his/her interest and ability to obtain mink along the main rivers (or in the case of Sites 7 and 11, also along feeder creeks).

The questionnaire used for this survey is included in Appendix A. These questions were prefaced by an explanation of the mink contaminants program and the fact that we were compiling a list of trappers who might be able to trap mink at the main river during the next trapping season. It was stated that if this method of carcass collection were used, there would be some compensation for carcasses, excluding pelts (amount not cited). The importance of obtaining mink from near the main river (except at Sites 7 and 11) was stressed. Those who felt they were able and willing to participate were told that further information would be forthcoming.

2.3 Contract Trapping

RFMA holders who were interested in participating were also asked whether they would be interested in contract trapping, in the event that this method was employed. If their reply was affirmative, further information was obtained about their preferred method of trapping, timing, and available equipment.

In addition, a list of persons with suitable equipment available for contract work on the Athabasca River was obtained from Alberta Fish & Wildlife. These people were contacted with regard to their rates.

3.0 RESULTS

3.1 Carcasses Obtained

Thirteen mink carcasses were obtained for analysis from the following locations: Site 1 (5), Site 10 (4); Site 6 (3), and Site 8 (1) (see Figure 1). Some of the trapping sites were removed from the mainstem river, but they were nevertheless felt to be potentially useful and worth obtaining by CWS. Details regarding each carcass are presented in Appendix B. Shipments to the NWRC laboratory in Hull were made on 18 and 24 February and 23 March. Copies of the export permits for these carcasses are included in Appendix C.

3.2 Response of RFMA Holders

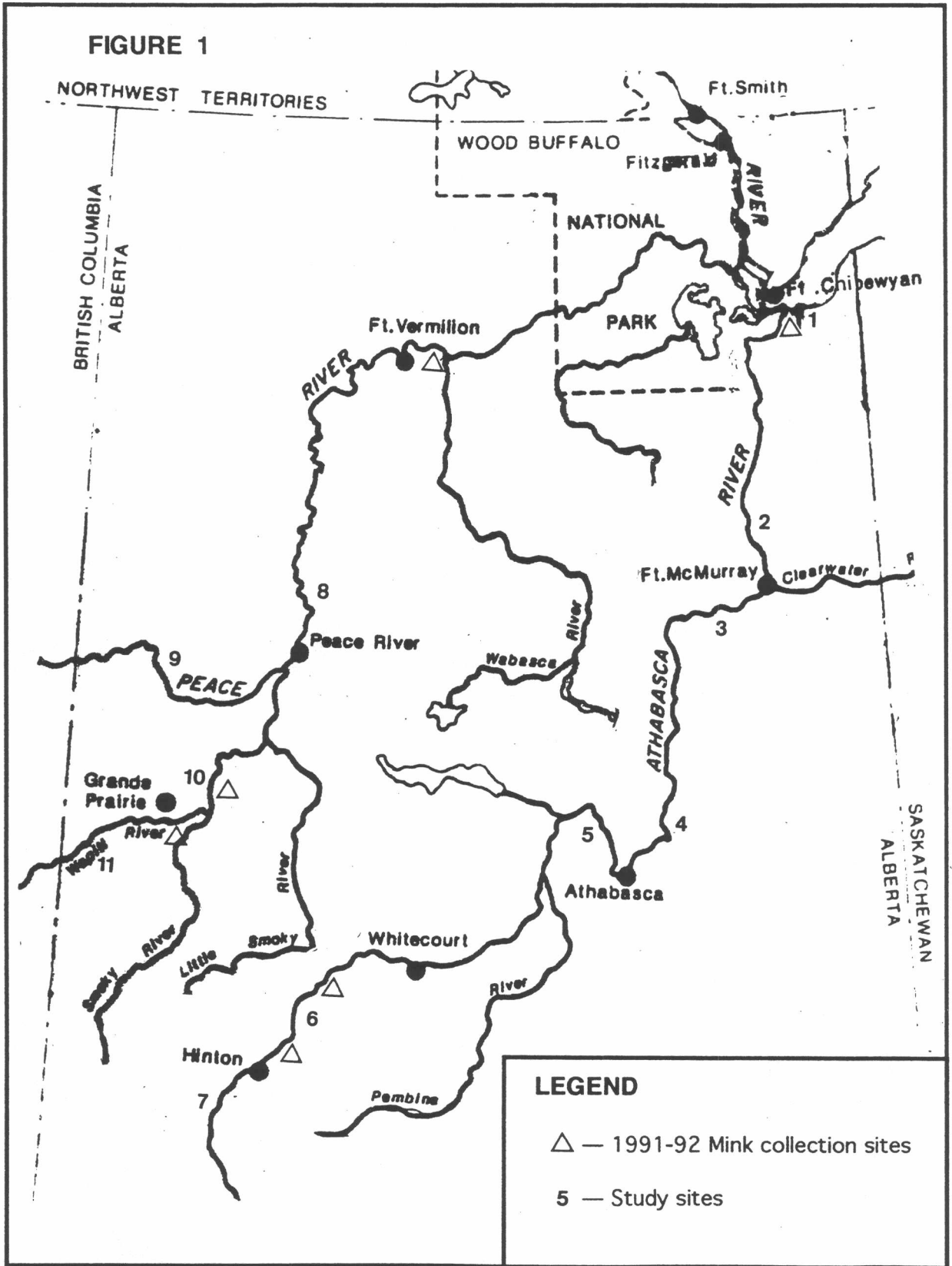
3.2.1 Overall Response

A total of 135 RFMA holders along the major rivers in the 11 study areas were identified, as shown in Appendix D. Of these, we succeeded in contacting 101. Another 34 were not contacted due to lack of phone service or no answer despite repeated attempts.

The general response of those contacted was positive with regard to the intent of the study and to the fact that they were being contacted about their interest in participating. However, many felt that mink were scarce along the river and did not normally trap them there but rather in upland creek situations. Access to the main rivers was seen as a problem by many, although some have access via tributaries and creeks. Only a small minority stated that they could easily obtain mink along the river. In addition, there was a general consensus that mink numbers are low everywhere at this time.

In spite of these problems, 85 RFMA holders expressed a willingness to attempt trapping at the river or at the mouths of creeks joining the river. Sixteen did not wish to participate for various reasons, the main one being that mink in their area were too scarce. The addresses of persons willing to participate and also of those not successfully contacted are listed in the Directory (Appendix F).

FIGURE 1



3.2.2 Response by Study Area

The number of RFMA holders interested in participating at each site is shown in Table 1. Individual trappers' statements about access to the main river, presence of mink, and personal information related to their trapping effort (health, time available, amount of interest in the study, etc.) are cited in Appendix D. Based on these statements, we estimated the relative abundance of samples expected from each site by placing each RFMA in one of four categories: not likely, somewhat likely, likely and very likely to obtain samples. An overall relative value for the anticipated success at each site was then derived by multiplying the number of RFMA's at each of these levels by a value assigned to each level (not likely = 2; somewhat likely = 4; likely = 6; very likely = 8). This rating, while highly speculative, should help in assessing the relative degree of difficulty with which an adequate sample number may be obtained from each site. A brief assessment of the degree of difficulty at each site based on this evaluation follows.

Table 1. Expected Success at Each Site

Site	Expected no. of interested trappers	Likelihood of obtaining mink *				Overall rating †
		not likely	fairly likely	likely	highly likely	
1	4‡	—	1	2	1	24‡
2	1	—	5	4	2	50
3	3	1	—	2	—	14
4	10	2	5	2	1	44
5	9	—	3	4	2	52
6	13	—	4	7	2	74
7	4	—	—	1	3	30
8	9	2	3	1	3	46
9	9	2	4	2	1	40
10	8	1	5	1	1	36
11	5	—	2	1	2	30
total	85					

* Based on trapper's statements

† \sum (number of RFMA's at each level x factor); see text

‡ More trappers may participate on Peace-Athabasca Delta in Wood Buffalo National Park

Site 1 (Peace-Athabasca Delta):

Although the number of interested trappers at this site appears to be low, more participants may become available if Wood Buffalo National Park wardens are given sufficient time to organize the trapping effort here (E. Wilson, pers. comm.). Some RFMA holders stated that all muskrat and mink are gone; however, one trapper in the Park was able to provide five mink carcasses in the winter of 1991/92 for this study. Thus populations may be highly localized.

Site 2 (downstream from SUNCOR on the Athabasca River):

This site has many interested RFMA holders, some of whom appear to have good access to the river. Many live on their RFMA's, and feel they can contribute samples.

Site 3 (upstream from Fort McMurray):

This is the most difficult site to trap and has the lowest number of trappers interested in participating. Poor access is particularly a problem on the Athabasca River from the House River to Fort MacMurray, where the river is steep and canyon-like.

Site 4 (downstream from Athabasca/ALPAC mill site):

There are many RFMA's along the river in this area. While only about 50% of them were reached, the high proportion of those willing to participate indicates a potentially large trapping effort. Access is difficult for some except at tributary mouths.

Site 5 (upstream from Athabasca but downstream from the confluence of the Athabasca and Lesser Slave rivers):

This appears to be a relatively good area for trapping.

Site 6 (downstream from Hinton):

This site has a large number of RFMA's and interested trappers. However, mink habitat is poor along the river (D. Hobson, pers. comm).

Site 7 (upstream from Hinton or on associated feeder creeks and ponds):

The low rating reflects the small number of RFMA's in this area. Since this is an upstream control area, it might be possible if necessary to add samples from other nearby control areas.

Sites 8 and 9 (downstream and upstream from Peace River):

Many said there are no mink along the river here during the winter months. The river provides poor habitat for mink, as its level fluctuates greatly and the flow is too fast to form the meanders

and flooded flatlands preferred by mink. In winter, large chunks of ice form which are not conducive for mink foraging on the frozen river. Road access is also poor at Site 8, on the east side of the river from downstream of Peace River to Carcajou, and at Site 9 near the B.C. border (W. Johnson, pers. comm.).

Site 10 (downstream from Grande Prairie on the Wapiti and Smoky rivers):

The Wapiti River remains open in winter here Mink are reportedly very scarce along the river, although some trappers would be glad to participate. One trapper at this site collected samples very near the river in 1991/92 and may be likely to expend extra effort trapping here in '92/93.

Site 11 (upstream from Grande Prairie on the Wapiti River or in associated feeder creeks and ponds):

A large range of mink abundance was reported by various RFMA holders at this site. As with Site 7, this control area could be enlarged with further control areas if necessary.

3.3 Contract Trapping

Twenty-six RFMA holders expressed an interest in trapping out-of-season under research permit on contract. These persons and the areas in which they are willing to work are shown in Appendix E along with information about their equipment and availability. Their addresses are included in the Directory (Appendix F). Some of these preferred open water trapping while others preferred winter trapping. Most use Conibear traps for mink, and only one person possessed the Conibear 120 Magnum trap described in Proulx et al. (1990).

None of these trappers were prepared to provide estimates of their rates. Not being in the commercial business of renting their equipment and services, they would need specific details regarding the proposed work and adequate time to work out their costs and rates. For this reason, we also contacted several commercial guides and jet boat owners on the Athabasca River who also had trapping experience (indicated in Appendix E by asterisks). These persons charge approximately \$200/da, plus the cost of fuel, for a speedboat. Several said that they would prefer to negotiate terms rather than cite specific rates, and that rates may differ according to area. Fuel costs are said to be about \$0.58/l, with outboards and speedboats using about 20-25 l/hr and jet boats 70-110 l/hr.

4.0 DISCUSSION

4.1 Methods for Obtaining Samples

Several options exist for methods of collecting mink specimens in 1992/93:

- a) registered trappers on their RFMA's during the regular trapping season;
- b) contract trapping outside of the trapping season on research permit; or
- c) some combination of a) and b).

In selecting among these, a number of considerations regarding quantity and quality of samples, as well as the cost of obtaining them, must be taken into account. These are discussed below in relation to each method.

4.1.1 Quantity

Requirements

According to M. Wayland (pers. comm.), a minimum of ten mink per site is needed.

Discussion

Whether registered trappers will be able to collect ten mink at all 11 sites is doubtful. If all the trappers who expressed a willingness to participate obtained two mink apiece, there would be enough at all but two sites (Sites 3 and 7). However, as discussed previously, the sites differ in trapping difficulty, with Sites 3, 8, and 9 presenting the most difficulty. Two mink per trapper may be expecting too much at these sites. Based on the relative success estimates in Section 3, ten samples will probably be obtained at Sites 2, 5, and 6. Sites 1 and 10 may also be successful, judging from this past season's record.

The numbers obtained will depend in part on the amount trappers are paid for carcasses and on pelt prices. Many persons contacted said they did not trap mink this past winter because of low pelt prices and low populations. On the other hand, some offered to supply mink free to assist this study. Others (a minority) said they would trap at the river only if the price was right. Hence if pelt prices and/or carcass payments are high, the overall effort will undoubtedly be greater, but if prices and payments are low, some trapping effort will still be expended. It is difficult to estimate in advance how many samples would be obtained in the latter case, although there are some "keen" trappers at each site (see Appendix G). If samples were collected over two years, this approach could be tried. If the registered trapping method is the only method used, it may be necessary to pay a relatively high amount in order to obtain enough samples from the difficult sites. In this case, a

means of limiting the numbers obtained at the easiest-to-trap sites would be needed. A possible system for doing this is described in Section 4.1.4 below.

Contract trapping could also be done and may be necessary at the sites where the most difficulty is anticipated, such as Sites 3, 8 and 9. Many trappers at Sites 8 and 9 said that mink are at the main river only during open water season. As the registered trapping season for mink usually opens November 1, leaving little or no open water time, contract trapping would best be conducted at this time. Late summer or fall, when water levels are low and mud at the river's edge allows tracks to be seen, are probably the most preferable times. Several trappers with various types of boats (and one with a float plane) are willing to contract trap at Site 3. Alternatively, the government jet boat at Fort McMurray might be used along with a contract trapper (F. Kunnas, pers. comm.). Sites 8 and 9 are navigable and probably most easily trapped from a boat (W. Johnson, pers. comm.). Contract trapping of feeder creeks in Site 7 (if necessary) could probably be carried out in summer, fall, or winter, without need for a boat.

From the standpoint of obtaining the desired sample size, a combination of contract and registered trapping is probably the best, with registered trapping this winter and open water contract trapping where needed this fall or in fall of 1993.

4.1.2. Quality

Requirements

Samples must be collected close to the main rivers, except at Sites 7 and 11. While a consideration of mink territory and dispersal and the distribution of their fish prey is beyond the scope of this report, we note that a minimum territory size of 7 ha for female mink is often cited (e.g. Banfield 1974). Thus we are assuming that a trapsite should not be more than a few kilometers from the main river. Sample location be accurately known for correct interpretation of laboratory results.

In addition, special handling and storage procedures are required to avoid contamination of carcasses by gasoline or by chemicals from plastic (e.g. plastic bags). Carcasses must remain frozen to prevent enzymatic destruction of tissue residues (M. Wayland, pers. comm.).

Discussion

Most persons contacted trap mink on tributaries and upland creeks and beaver ponds rather than on the rivers. If mink from these upland areas were unknowingly mixed in with river samples, a dilution of any contaminants present in the main river samples would occur. This may be a

potential problem, as this is not the type of carcass collection to which trappers are accustomed (i.e., where all carcasses are submitted for age determination). Rather, river samples must be kept separate from the rest of each day's take at all stages of collection and skinning. In order to reduce the likelihood of a mix-up, it may be advisable to collect an excess number of samples so that only those from the most accurately described and preferred locations need be used. Also, emphasis should be placed on the uniqueness of this collection program by giving out specially labelled bags for keeping these carcasses. A catchy slogan denoting the toxicological nature of the program on the bag and on all informative material would reinforce trapper awareness of the special handling requirements.

Contract trapping of specific locations on the main rivers would reduce the likelihood of location mix-ups and would also reduce chances of contamination by enabling pelts to be left on. The best quality control may be achieved via a general contractor (biologist, technician, or trapper) who would be responsible for trapping the three major problem sites between 1 August and 1 November (approx. 3 weeks/site). This person would hire any equipment or assistance needed (boats, trappers familiar with the area, etc) and would be in charge of the trapping, documentation, and compensation of RFMA holders. Only one tendering process and one special research permit would be required.

4.1.3 Cost

The RFMA collection method would cost approximately \$400-600/site, assuming \$40/carcass and 10-15 carcasses obtained at each site. In addition there would be a cost associated with the trapping kits and their distribution and the cost of collecting the carcasses from trappers.

Given the reluctance of trappers to cite rates, the only basis for cost estimates of contract trapping were the commercial guide, and boat renters rates. Depending on the size of boat, from smaller through speedboat to jetboat, this cost would probably range between \$150 and 300 per day plus fuel. Assuming two mink trapped per day, this equals \$750-1,500 per site plus fuel. However, as mentioned, some RFMA holders with boats may contract out for less. Also, Fish & Wildlife jetboats may be available at some sites. Provision of C120 Magnum traps, should they be required, would cost about \$360/site, assuming 30 per site. (These traps are apparently available from only one source, Mr. Savageau, Pieges Du Quebec, 16125 Demers, St-Hyacinthe, Quebec J2Z 3V4, at a cost of approximately \$12 each; P. Cole, pers. comm.). It may also be necessary to pay compensation for mink taken on RFMA's.

4.1.4 Sign-up System

For the RFMA collection method, a sign-up system could help limit maximum numbers of trappers participating and number of mink obtained and also help with quality control. In this system, all appropriate RFMA holders would be notified of the program by letter prior to the trapping season. The letter would state the amount to be paid and that payment would only be made for properly handled specimens. This would include using specially provided wrapping material and labelled bags for transporting carcasses. These materials (in a kit) would be distributed on a first-come, first-served basis. A tear-off application would be included to be mailed back to the program co-ordinator if participation is intended. The co-ordinator would then send the participant the kit containing handling instructions, plastic gloves for skinning carcasses, tinfoil for wrapping carcasses, waterproof labels, and a special plastic bag for keeping them apart from other animals. Receipt of these materials would be confirmation of the trapper's participation.

If trapping kits were given out at local Fish & Wildlife offices, problems with illiteracy could be avoided, and trappers could come in for more trapping kits (i.e. could try for more mink) at any time during the trapping season, provided they submitted their mink carcasses at that time. In this way, the co-ordinator would know approximately how many carcasses had been obtained to date at each site and whether more were needed; once an adequate number was reached at a site, kits would no longer be given out at that office. If Fish & Wildlife offices do not participate, there would be less control over numbers, as a greater number of kits would have to be given out at the onset of the season; however, this would still be preferable to having an uncontrolled number of mink carcasses at the less difficult sites. A larger number of kits (perhaps 5) could be given out to each person at the difficult sites.

5.0 RECOMMENDATIONS

5.1 Suggested Actions Regardless of Method Selected

Since word of this carcass collection program began in December 1991 and has continued with our trapper contacts, there is bound to be a "rumor mill" in full operation now. Trappers have probably already begun to ask for more information at Fish & Wildlife offices. Therefore we suggest that:

- a) all Fish & Wildlife offices in the study area be notified of the program and collection procedure;

- b) notification be sent to all RFMA holders listed in Appendix D (excepting those not interested in participating) as to the method selected. This will serve either as a notification that carcasses are not wanted if registered trapping is not to be used, or a notification of what the procedure will be if registered trapping is to be used. This notification should also go to those not reached by phone, as they will hear by word of mouth and may go to extra trapping effort without making further inquiries. If the RFMA collection method is to be used, the letter should clearly state the boundary of the study areas (i.e. minimum and maximum river distances from the town or pulpmill) so that each RFMA holder will know from the onset whether his/her area will qualify.

- c) an article about the program be placed in the Alberta Trapper's Magazine (circulation: 1600) in order to clarify what locations are being sampled and by what method. If more support from RFMA holders is desired, a talk could also be given at the Alberta Trapper's Convention in Westlock (June 12-14).

5.2. Summary of Recommendations for Method of Collecting Carcasses

While it is beyond the scope of this study to make final recommendations regarding the method of mink collection to be used, a number of points for consideration in making this decision are summarized below.

- 1) Mink are generally low in numbers along the main rivers in the the study area and mink trapping is not often done there.
- 2) The eleven specified study sites present different degrees of difficulty with regard to trapping of mink at the main rivers, a situation that may result in not enough samples being taken at some sites and too many at other sites if trapping is done by RFMA's.
- 3) A combination of registered trapping at some sites and contract trapping at the most difficult-to-trap sites, or registered trapping over two seasons, would likely be the least costly method of obtaining an adequate number of samples.
- 4) From a quality control viewpoint, contract trapping may give the best control over the location from which samples are taken and the potential for contamination during handling of samples.
- 5) If trapping is done on RFMA's, numbers of samples obtained may be limited and quality of samples helped by an emphasis on the uniqueness of the collection program and a sign-up system approach. Quality control may also be aided by a low payment for carcasses at the risk of not obtaining enough samples.

6.0 REFERENCES CITED

- Banfield, A. 1974. Mammals of Canada. Univ. of Toronto Press.
- Proulx, G., M.W. Barrett and S.R. Cook. 1990. The C120 Magnum with pan trigger; A humane trap for mink *Mustela vison*. J. Wildl. Dis. 26:511-517.

PERSONAL COMMUNICATIONS

- Cole, Pam. 1992. Technician, Alberta Research Council.
- Hobson, Dave. 1992. Biologist, Alberta Fish and Wildlife Division, Edson.
- Johnson, William. 1992. Alberta Fish and Wildlife Division, Peace River.
- Kunnas, Floyd. 1992. Trapline Resource Officer, Alberta Fish and Wildlife Div., North East Region.
- Wayland, Mark. 1992. CEPA Biologist, CWS, Saskatoon.
- Wilson, Earl. 1992. Park Warden, Canadian Park Service, Wood Buffalo National Park.

ACKNOWLEDGMENTS

The authors are grateful for the assistance provided by Earl Wilson, Canadian Park Service, Wood Buffalo National Park; and Jan Edmunds, Floyd Kunnas, Bill Johnson, and Owen Sabiston, Fish & Wildlife Division, Alberta Forestry, Lands and Wildlife.

APPENDIX A

MD1-92

NORTHERN RIVER BASIN STUDY

MINK COLLECTION

PECAN RESOURCES INC.

PERSONAL DATA

NAME: _____
 ADDRESS: _____

 PHONE No: _____
 Trapline No: _____
 Location: _____

PHONE RECORD

Date	Time
1 ___/___/___	___:___
2 ___/___/___	___:___
3 ___/___/___	___:___
4 ___/___/___	___:___
5 ___/___/___	___:___
6 ___/___/___	___:___

1- Do you trap mink on your trap line? YES NO

2- Do you have any carcasses from this year you would be willing to give us? YES NO
 Number: (If yes go to MC1-92)

3- Would you be interested in participating next year? YES NO

If no? Not interested not trapping next year
 Don't trap near river Other _____

If yes Do you usually have to thaw mink before skinning? YES NO

How many mink do you usually get? Number
 Where? (a) On main river Name: _____ YES NO
 or (b) Name of rivers or creeks _____

Distance and Direction
 (a) From main river _____
 (b) From closest landmark _____

How many carcasses do you think you could supply? Number
 Very likely Likely Maybe Don't count on it

4- Would you be interested in contract trapping along the river system? YES NO

5- Do you know of anyone else along the river who might be interested? YES NO
 NAME: _____
 ADDRESS: _____

 PHONE No: _____

CROSS REFERENCE:	MC1-92	OTHER:	_____
------------------	--------	--------	-------

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Del Bredeson
 ADDRESS: RR1 Box 11 Site 1
Grande Prairie, AB T8V 2Z8
 PHONE No: 538-4251
 Trapline No: 1564
 Location: Site #10
 Lic. # 1A33106

SHIPPING DATA

Date
 SHIPPED TO PECAN 12 / Feb / 92
 VIA: picked up by Pecan
 Number shipped: 3
 SHIPPED TO CWS 18 / Feb / 92
 VIA: Purolator Courier

RECEIVED: Date 12 / Feb / 92 Time 12 :00

Condition of Carcass received in: Frozen

CARCASS DATA: # _____ # 10-01-92-1564-01
 Tag Number or Catalog Number

TRAP LOCATION:
 Lat: 55° 03' Long: 118° 25'

(a) On main river Name: _____ YES NO
 or (b) Name of rivers or creeks Bear Creek

Distance and Direction
 (a) From main river 1 mi from Wapiti R
 (b) From closest landmark 7 mi downstream from P & G pulpmill

Date Trapped: 5 / Jan / 92 or/ between ___ / ___ / ___ and ___ / ___ / ___

Where and how has it been kept? (outside freezer etc.) Freezer

What has it been wrapped in? tinfoil and plastic (outside)

How long between being caught and freezing? a few hours

Did you have to thaw the mink before skinning? yes

Notes: male

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Dei Bredeson
 ADDRESS: RR1 Box 11 Site 1
Grande Prairie, AB T8V 2Z8
 PHONE No: 538-4251
 Trapline No: 1564
 Location: Site #10
 Lic. # 1A33106

SHIPPING DATA

Date
 SHIPPED TO PECAN 12_/Feb/92
 VIA: picked up by Pecan
 Number shipped: 3
 SHIPPED TO CWS 18/Feb/92
 VIA: Purolator Courier

RECEIVED: Date 12_/Feb/92 Time 12.00

Condition of Carcass received in: Frozen

CARCASS DATA: # _____ # 10-01-92-1564-02
Tag Number or Catalog Number

TRAP LOCATION:

Lat: 55° 03' Long: 118° 25'

(a) On main river Name: _____ YES NO
 or (b) Name of rivers or creeks Bear Creek

Distance and Direction

(a) From main river 1 mile from Wapiti River
 (b) From closest landmark 8 mi downstream from P & G mill

Date Trapped: 08/Jan/92 or/ between ___/___/___ and ___/___/___

Where and how has it been kept? (outside freezer etc.) Freezer

What has it been wrapped in? tinfoil with plastic on outside

How long between being caught and freezing? a few hours

Did you have to thaw the mink before skinning? yes

Notes: male

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Del Bredeson
ADDRESS: RR1 Box 11 Site 1
Grande Prairie, AB T8V 2Z8
PHONE No: 539-4251
Trapline No: 1564
Location: Site #10
Lic. # 1A33106

SHIPPING DATA

SHIPPED TO PECAN 12/Feb/92
VIA: Picked up by Pecan
Number shipped: 3
SHIPPED TO CWS 18/Feb/92
VIA: Purolator Courier.

RECEIVED: Date 12/Feb/92 Time 12 00

Condition of Carcass received in: Frozen

CARCASS DATA: # 10-01-92-1564-03
Tag Number or Catalog Number

TRAP LOCATION:

Lat: 55 03' Long: 118 25'

(a) On main river Name:
or (b) Name of rivers or creeks headwaters of Olsen Creek
YES NO
[X]

Distance and Direction
(a) From main river 1 mile up from Wapiti R.
(b) From closest landmark 10 mi downstream of P & G mill

Date Trapped: 05/Jan/92 or/ between and

Where and how has it been kept? (outside freezer etc.) Freezer

What has it been wrapped in? tinfoil

How long between being caught and freezing? a few hours

Did you have to thaw the mink before skinning? yes

Notes: males

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Andrew Campbell

ADDRESS: c/o Earl Wilson, Park Warden,

Wood Buffalo Natl Pk, Box 38, Fort Chipewyan, AB

PHONE No: 697-3872 (Wilson: 697-3662)

Trapline No: RTA 1123 (WBNP)

Location: Site #01

Lic. # 1W1284 (WBNP)

SHIPPING DATA

Date

SHIPPED TO PECAN 11 / Feb / 92

VIA: Contact Airways/Time Air

Number shipped: 5

SHIPPED TO CWS 18 / Feb / 92

VIA: Purolator

RECEIVED: Date 12 Feb / 92

Time 17:30

Condition of Carcass received in: Frozen

CARCASS DATA: # _____ # 01-12-91-1123-04
Tag Number or Catalog Number

TRAP LOCATION:

Lat: 58° 37'

Long: 111° 05'

(a) On main river Name: _____ YES NO
or (b) Name of rivers or creeks Galoot Lake on Athabasca Delta

Distance and Direction

(a) From main river 0-4 km from southern tip of Lake Athabasca
(b) From closest landmark _____

Date Trapped: 20 / Dec / 91 or/ between ___/___/___ and ___/___/___

Where and how has it been kept? (outside freezer etc.) Freezer at Park

What has it been wrapped in? tinfoil

How long between being caught and freezing? _____

Did you have to thaw the mink before skinning? _____

Notes: male, good body fat

Note: Because this trapline is within the Park, the warden wants all arrangements with the trapper to go through him.

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Andrew Campbell

ADDRESS: c/o Earl Wilson, Park Warden,
Wood Buffalo Natl Pk, Box 38, Fort Chipewyan, AB

PHONE No: 697-3872 (Wilson: 697-3662)

Trapline No: RTA 1123 (WBNP)

Location: Site #01

Lic. # 1W1284 (WBNP)

SHIPPING DATA

Date

SHIPPED TO PECAN 11/Feb/92

VIA: Contact Airways/Time Air

Number shipped: 5

SHIPPED TO CWS 18/Feb/92

VIA: Purolator

RECEIVED: Date 12/ Feb 92

Time 17 :30

Condition of Carcass received in: Frozen

CARCASS DATA: # _____ # 01-01-92-1123-05
Tag Number or Catalog Number

TRAP LOCATION: Lat: 58° 37' Long: 111° 05'

(a) On main river Name: _____ YES NO
or (b) Name of rivers or creeks Galoot Lake on Athabasca Delta

Distance and Direction

(a) From main river 0-4 km from southern tip of Lake Athabasca

(b) From closest landmark _____

Date Trapped: 05/ Jan/92 or/ between ___/___/___ . and ___/___/___

Where and how has it been kept? (outside freezer etc.) Freezer at Park

What has it been wrapped in? tinfoil

How long between being caught and freezing? _____

Did you have to thaw the mink before skinning? _____

Notes: male

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Andrew Campbell

ADDRESS: c/o Earl Wilson, Park Warden,

Wood Buffalo Natl Pk, Box 38, Fort Chipewyan, AB

PHONE No: 697-3872 (Wilson: 697-3662)

Trapline No: RTA 1123

Location: Site # 01

Lic. #1W1284 (WBNP)

SHIPPING DATA

Date

SHIPPED TO PECAN 11 / Feb / 92

VIA: Contact Airways/ Time Air

Number shipped: 5

SHIPPED TO CWS 18 / Feb / 92

VIA: Purolator

RECEIVED: Date 12 / Feb / 92

Time 17 :30

Condition of Carcass received in: Frozen

CARCASS DATA: # _____ # 01-12-91-1123-06
Tag Number or Catalog Number

TRAP LOCATION:

Lat: 58° 37'

Long: 111° 05'

(a) On main river Name: _____ YES NO
or (b) Name of rivers or creeks Galoot Lake on Athabasca Delta

Distance and Direction

(a) From main river

0-4 km from south tip of Lake Athabasca

(b) From closest landmark

Date Trapped: 20 / Dec / 91 or/ between ___ / ___ / ___ and ___ / ___ / ___

Where and how has it been kept? (outside freezer etc.) Freezer at Park

What has it been wrapped in? tinfoil

How long between being caught and freezing?

Did you have to thaw the mink before skinning?

Notes: male, good body fat

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

SHIPPING DATA

NAME: Andrew Campbell

Date

ADDRESS: c/o Earl Wilson, Park Warden,

SHIPPED TO PECAN 12/Feb/92

Wood Buffalo Natl Pk, Box 38, Fort Chipewyan, AB

VIA: Contact Airways/Time Air

PHONE No: 697-3872 (Wilson: 697-3662)

Number shipped: 5

Trapline No: RTA 1123 (WBNP)

SHIPPED TO CWS 18/Feb/92

Location: Site.01

VIA: Purolator

Lic. # 1W1284 (WBNP)

RECEIVED: Date 12/Feb/92

Time 17.30

Condition of Carcass received in: Frozen

CARCASS DATA: # _____ # 01-12-91-1123-08
Tag Number or Catalog Number

TRAP LOCATION:

Lat: 58°37' Long: 111°05'

(a) On main river Name: _____ YES NO
or (b) Name of rivers or creeks Galoot Lake on Athabasca Delta

Distance and Direction

(a) From main river _____
(b) From closest landmark 0-4 km from woth tip of Lake Athabasca

Date Trapped: 20/Dec/91 or/ between ___/___/___ and ___/___/___

Where and how has it been kept? (outside freezer etc.) Freezer at Park

What has it been wrapped in? tinfoil

How long between being caught and freezing? _____

Did you have to thaw the mink before skinning? _____

Notes: large male

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Harold Matlock
 ADDRESS: Box 393
Debolt, AB TOH 1B0
 PHONE No: 957-2540
 Trapline No: 1888
 Location: Site 10
 Lic # 1A34588

SHIPPING DATA

SHIPPED TO PECAN 12/Feb/92
 VIA: picked up by Pecan
 Number shipped: 1
 SHIPPED TO CWS 18/Feb/92
 VIA: Purolator

RECEIVED: Date 12/Feb/92 Time ---:---

Condition of Carcass received in: Frozen

CARCASS DATA: # # 10-12-91-1888-09
Tag Number or Catalog Number

TRAP LOCATION: Lat: 55°15' Long: 117°50'

(a) On main river Name: YES NO
 or (b) Name of rivers or creeks upland on Simonette watershed YES NO

Distance and Direction
 (a) From main river 14 mi from Smoky R, 8 mi fm Simonette, 15 mi fm
 (b) From closest landmark 6 mi NE of Debolt Puskwaskaw R.

Date Trapped: --/Dec/91 or/ between --/---/--- and --/---/---

Where and how has it been kept? (outside freezer etc.) Freezer

What has it been wrapped in? tinfoil

How long between being caught and freezing? 1 hr

Did you have to thaw the mink before skinning? no- skinned immediately

Notes: _____

APPENDIX B

MC1-92

NORTHERN RIVER BASIN STUDY

MINK CARCASS REPORT

PECAN RESOURCES INC.

PERSONAL DATA

NAME: Lewis Judd
 ADDRESS: Box 121
Fort Vermilion, AB T0H 1N0
 PHONE No: 927-3596
 Trapline No: 1671
 Location: Site #08

SHIPPING DATA

SHIPPED TO PECAN 24 / Feb / 92
 VIA: Time Air
 Number shipped: 1
 SHIPPED TO CWS 24 / Feb / 92
 VIA: Purolator Courier

RECEIVED: Date 24 / Feb / 92 Time 15 : 00

Condition of Carcass received in: _____

CARCASS DATA: # _____ # 08-01-92-1671-10
 Tag Number or Catalog Number

TRAP LOCATION:
 Lat: 58 24 Long: 115 20

(a) On main river Name: _____ YES NO
 or (b) Name of rivers or creeks Wabasca River mouth

Distance and Direction
 (a) From main river less than 1 mile from the Peace River
 (b) From closest landmark _____

Date Trapped: ___/___/___ or/ between 05 / Jan / 92 and 11 / Jan / 92

Where and how has it been kept? (outside freezer etc.) Freezer

What has it been wrapped in? tin foil

How long between being caught and freezing? _____

Did you have to thaw the mink before skinning? No

Notes: _____

PERSONAL DATA

NAME: Jack Wilson
ADDRESS: Box 5137
Hinton T7V 1X3
PHONE No: 865-7988
Trapline No: 1255
Location: 6
Lic. # 33508

SHIPPING DATA

SHIPPED TO PECAN Date 05 / Mar / 92
VIA: J. Edmunds (F&W)
Number shipped: 2
SHIPPED TO CWS Date 24 / Mar / 92
VIA: Purolator Courier

RECEIVED: Date 05 / Mar / 92 Time _____

Condition of Carcass received in: good (frozen)

CARCASS DATA: # _____ # 06-01-92-1255-12
Tag Number or Catalog Number

TRAP LOCATION:
Lat: 53 33' Long: 116 35'

(a) On main river Name: _____ YES NO
or (b) Name of rivers or creeks Summit Lake

Distance and Direction
(a) From main river about 5 miles from Athabasca River & 1 mi fm
(b) From closest landmark 40 km downstream from Hinton
McLeod R ^{a connecting creek} flows into Ath

Date Trapped: 31 / Jan / 92 or / between ___ / ___ / ___ and ___ / ___ / ___

Where and how has it been kept? (outside freezer etc.) _____

What has it been wrapped in? NB: Wrapped in thick plastic only (not tinfoil) until Mar. 19 (shipped to Hull in tinfoil)

How long between being caught and freezing? _____ a day

Did you have to thaw the mink before skinning? no

Notes: _____

PERSONAL DATA

NAME: Jack Wilson
ADDRESS: Box 5137
Hinton T7V 1X3
PHONE No: 865-7988
Trapline No: 1255
Location: 6

SHIPPING DATA

Date
SHIPPED TO PECAN : 05 / Mar / 92
VIA: J. Edmunds (F&W)
Number shipped: 2
SHIPPED TO CWS : 2³ / Mar / 92
VIA: Purolator Courier

RECEIVED: Date 05 / Mar / 92 Time ___:___

Condition of Carcass received in: good (frozen)

CARCASS DATA: # _____ # 06-12-91-1255-13
Tag Number or Catalog Number

TRAP LOCATION:
Lat: 53 33' Long: 117 02'

(a) On main river Name: _____ YES NO
or (b) Name of rivers or creeks Summit Lake

Distance and Direction Summit L. to Atha R
(a) From main river 5 mi fm Atha R and 1 mi fm McLeod R; creek runs fm ^
(b) From closest landmark 40 km downstream from Hinton

Date Trapped: 12 / Dec / 91 or/ between ___/___/___ and ___/___/___

Where and how has it been kept? (outside freezer etc.) freezer

What has it been wrapped in? plastic only (not tinfoil) shipped to Hull in tinfoil

How long between being caught and freezing? froze in trap

Did you have to thaw the mink before skinning? yes

Notes: _____

APPENDIX C

EXPORT PERMITS

I, Surname Code First Ted Middle _____
Street, Box, R.R. Peca Resources Inc (c/o Can. Wildlife Serv)
Town or City Box 1919
Province/State Morinville Country Alta

hereby make application for this permit to export the wildlife listed herein

TO Surname Canadian Wildlife Service First _____ Middle _____
Street, Box, R.R. _____
Town or City Ottawa
Province/State Ont Country Can

(Identify items of wildlife to be exported and the authority under which each is held)

Description of Wildlife:

Possessed Under Authority Of:

3 Mink Carcasses

Taken by Del Bredesen
RFMA Lic 1A 33106

1 Mink Carcass

Taken by Harold Matlock
RFMA Lic. 1A 34588

(SEE INSIDE FRONT COVER FOR INSTRUCTIONS ON HOW TO COMPLETE THIS PORTION)

[Signature]
Signature of Applicant

Feb 12th, 1992
Date

Carrier's Name

Address Air Freight

Province/State _____ Country _____

The applicant is hereby authorized to export wildlife prescribed herein.

This permit is valid between Feb 12th/92 and March 1/92

Fish & Wildlife
Issuing Agency
Grande Prairie
Location

Sheila E. Graham
for Minister of Forestry, Lands and Wildlife
(not inspected by officer)

27975R

I, Surname Horstman First Louise Middle _____
Street, Box, R.R. Pecan Resources Inc.
Town or City Box 1919, Morinville
Province/State Alberta Country Canada

hereby make application for this permit to export the wildlife listed herein

Canadian Wildlife Service

TO Surname Kessara First Mike Middle _____
Street, Box, R.R. Gamelin Blvd.
Town or City Hull
Province/State Quebec Country Canada

(Identify items of wildlife to be exported and the authority under which each is held)

CO8

Description of Wildlife:

Possessed Under Authority Of:

5 Mink Carcasses Lic # 1W1284
Wood Buffalo
National Park

(SEE INSIDE FRONT COVER FOR INSTRUCTIONS ON HOW TO COMPLETE THIS PORTION)

Louise P. Horstman
Signature of Applicant

Feb. 13/92
Date

Carrier's Name Canadian Pacific
Address Air Freight
Province/State Alberta Country Canada

The applicant is hereby authorized to export wildlife prescribed herein.

This permit is valid between Feb. 13/92 and Feb 28/92

Fish & Wildlife
Issuing Agency

K. Bourke ⁽¹⁴⁾
for Minister of Forestry, Lands and Wildlife

14515-122 Ave Edmonton,
Location Alta

NOTE: The above noted wildlife has
not been inspected by a
Wildlife Officer

FORESTRY, LANDS & WILDLIFE
Fish and Wildlife Division

27976R

I, Surname Horstman First Louise Middle _____
 Street, Box, R.R. Pecan Resources Inc
 Town or City Box 1919, Morinville
 Province/State Alta Country Canada

hereby make application for this permit to export the wildlife listed herein

TO Surname Canadian Wildlife Service
Kessara First Mike Middle _____
 Street, Box, R.R. Camelin Blvd
 Town or City Hull
 Province/State Quebec Country Canada

(Identify items of wildlife to be exported and the authority under which each is held)

Description of Wildlife:

Possessed Under Authority Of:

(08) one milk carcasses LIC # AS 1A32896
4 Copy only ~~AS~~

(SEE INSIDE FRONT COVER FOR INSTRUCTIONS ON HOW TO COMPLETE THIS PORTION)

Louise Horstman
 Signature of Applicant

Feb 18/92
 Date

Carrier's Name

Address Purclator
 Province/State Alta Country Canada

The applicant is hereby authorized to export wildlife prescribed herein.

This permit is valid between Feb 13/92 and March 4/92

FORESTRY, LANDS & WILDLIFE
 FISH & WILDLIFE DIVISION
 14515-122 AVENUE
 EDMONTON, ALBERTA T5L 2W4

Location

Alan A. Surman (14)
 for Minister of Forestry, Lands and Wildlife

NOTE: The above noted Wildlife has
not been inspected by a



APPLICATION AND PERMIT TO EXPORT WILDLIFE

FORESTRY, LANDS & WILDLIFE
Fish and Wildlife Division

28029R

I, Surname Pecan Resources Inc. First _____ Middle _____
Street, Box, R.R. Box 1919
Town or City Morinville
Province/State AB Country Canada

hereby make application for this permit to export the wildlife listed herein

TO Surname Mr. M. Kessarrra First _____ Middle _____
Street, Box, R.R. Canadian Wildlife Service
Town or City Hall
Province/State Que Country Canada

(Identify items of wildlife to be exported and the authority under which each is held)

Description of Wildlife:	Possessed Under Authority Of:
<u>(3) Mink</u>	<u>Permit # 23476</u>
_____	<u># 33508</u>
_____	_____

(SEE INSIDE FRONT COVER FOR INSTRUCTIONS ON HOW TO COMPLETE THIS PORTION)

Louis P. Horstman _____ March 20/92
Signature of Applicant Date

Carrier's Name

Address Carrier
Province/State Alta Country Canada

The applicant is hereby authorized to export wildlife prescribed herein.

This permit is valid between March 20/92 and April 4/92

FORESTRY, LANDS & WILDLIFE
FISH & WILDLIFE DIVISION
14515 - 122 AVENUE
EDMONTON, ALBERTA T5L 2W4

Location

Arleen A. Simon (14)
for Minister of Forestry, Lands and Wildlife
NOTE: The above noted Wildlife has
not been inspected by a
Wildlife Officer

APPENDIX D - Summary of Registered Trappers

Site	Trapline	Response	Distance	River Access
1	WBNP	Yes	on Delta in W.B. Nat'l Pk.	n/a
1	1508	not reached		
1.	2532	not reached		
1	1624	yes	on Delta @ Lake Athabasca	good
1	1542	yes	on Delta	good
1	2407	yes	80 km S of Delta	fair
2	0592	not reached		
2	1650	not reached		
2	1570	yes	112 km S of Ft. Chip	cabin by river
2	2331	yes	50 km dnstm fm Ft. MacKay	
2	445	not reached		
2	2137	yes	70 km dnstm from Ft. McMurray	good
2	965	yes	15 km dnstm of Ft. McKay	good
2	1743	yes	80 km dnstm from Ft. McMurray	fair
2	1275	yes	Mile 76 from Waterways	good

Site	Trapline	Response	Distance	River Access
2	2400	not reached		
2	2457	yes	N of Ft. McKay on House River	good
2	1661	yes	120 km N of Ft. McMurray	fair
2	2892	yes	85 km dnstrm from Ft. McMurray	good
2	2346	yes	150 km N of Ft. McMurray	good
2	2863	yes	160 km N of Ft. McMurray	fair
3	1826	no		
3	1696	not reached		
3	2317	no		
3	1865	yes	190 km dnstrm of ALPAC	difficult
3	1387	not reached		
3	1364	yes	50 km upstrm of Ft. McMurray	good
3	1346	yes	at House River on Athabasca R.	fair
4	2633	yes	25 km downstream Athabasca	traps on creeks close to river
4	602	not reached		
4	2360	not reached		
4	1831	yes	40 km dwnstrm Athabasca	
4	2008	not reached		

Site	Trapline	Response	Distance	River Access
4	1819	not reached		
4	1585	not reached		
4	1828	yes	60 km dnstrm from Athabasca	very poor
4	1980	not reached		
4	2800	yes	130 km dnstrm of Athabasca	poor
4	1292	yes	85 km dnstrm from Athabasca	good
4	1763	no		
4	1824	not reached		
4	1836	yes	5 km dnstrm from ALPAC	fair
4	2194	no	too close to town	
4	2219	not reached		
4	1444	not reached		
4	1794	yes	85 km down stream from Athabasca	
4	1711	not reached		
4	2248	yes	115 km dnstrm from Athabasca	good
4	2109	yes	55 km dnstrm Athabasca on La Biche R.	difficult

Site	Trapline	Response	Distance	River Access
4	1217	not reached		
4	2467	yes	95 km dnstrm of Athabasca	fair
4	1302	not reached		
4	1315	not reached		
5	1908	not reached		
5	2082	yes	1/2 way between Smith & Athabasca	
5	2035	yes	40 km upstrm from Athabasca	could trap on bench by River
5	1465	yes	25-30 km downstrm frm Smith	
5	2579	yes	55 km upstream fm Athabasca	Creek 2 mi fm Athabasca R.
5	2042	yes	25 km downstrm fm Smith	good
5	1400	yes	just downstrm fm Smith	good
5	1863	yes	8dm dnstrm fm Smith	fair
5	2914	yes	10 km upstrm of Athabasca	usually traps on creek 1-2 mi from River
5	2770	no		
5	1928	not reached		
5	1704	yes	30 km upstrm fm Athabasca	

Site	Trapline	Response	Distance	River Access
6	1994	yes	40 km downstream Hinton	
6	1684	yes	110 km downstream Hinton	?
6	1340	yes	30 km upstream fm Whitecourt	
6	1252	yes	60 km downstream fm Hinton	
6	1271	yes	40 km dwnstm fm Hinton	traps always within 5 mi of Athabasca R.
6	2473	yes	just dwnstm fm Hinton	fair
6	2241	yes	16 km dwnstm fm Hinton	
6	851	no		
6	2206	yes	55 km dwnstm fm Hinton	
6	735	no		
6	1272	not reached		
6	1973	yes	100 km dwnstm Hinton	
6	1927	yes	40 km dwnstm fm Hinton	yes
6	2500	yes	120 km downstream Hinton	?

Site	Trapline	Response	Distance	River Access
6	1697	yes	25 km upstrm fm Whitecourt	fair
6	376	yes	upstrm & downstrm of Whitecourt	traps on creeks
6	1725	not reached		
6	1255	yes	40 km dwnstrm from mill	
7	2203	not reached		
7	2201	yes	upstream 16 km from Hinton	
7	2039	yes	near town limits upstream fm pulpmill	traps on River
7	2320	yes	10 km upstream fm Hinton	Solomon Creek runs into Atha
7	2202	yes	20km upstrm from Hinton	traps on Atha River
8	2508	no		access difficult
8	2022	not reached		
8	1419	no		access difficult
8	1573	yes	50 km dwnstrm fm Peace River	good
8	1233	yes	130 km dnstrm fm Peace River	fair
8	1621	no		no access
8	1671	yes	50 km dwnstrm of Ft. Vermillion	mouth of Wabasca (.1 mi)
8	2147	not reached		

Site	Trapline	Response	Distance	River Access
8	789	yes	dwnstm fm Ft. Vermilion	fair
8	2300	no		
8	2187	not reached		
8	2209	yes	20 km dwnstm fm Peace River	fair
8	1300	yes	120 km dnstrm of Peace River	
8	1269	yes	150 km dnstrm fm Peace River	fair
8	1285	yes	150 km dnstrm fm Peace River	good
8	2519	yes	140 km dnstrm of Peace River	good
9	2789	yes	40 km upstrm fm Peace River	good
9	1894	yes	30 km upstrm fm Peace River	fair
9	1712	yes	95 km upstrm fm Peace River	
9	2112	yes	nr B.C. border	good
9	2435	yes	50 km upstrm fm Peace River	needs a boat on river to trap
9	2228	yes	112 km upstrm fm Peace River	1 mi off Peace River
9	1374	yes	95 km upstrm fm Peace River	fair
9	2774	yes	107 km upstrm fm Peace River	fair

Site	Trapline	Response	Distance	River Access
9	2211	yes	110 km upstrm fm Peace River	good
10	2536	yes	80km downstrm on Smoky River	fair
10	1318	no		
10	1835	no		
10	1932	yes	70 km downstrm fm Grande Prairie	no (?)
10	2715	yes	80 km dwnstm on Smoky	yes
10	2160	yes	5 km dnstrm fm mill	Wapiti - yes
10	1886	no		
10	1396	not reached		
10	1918	yes	Smoky R. 55 mi dnstrm fm Gr. Prairie	poor
10	2549	no		
10	1932	yes	50 km dnstrm fm Grande Prairie	on Smoky R.
10	1469	not reached		
10	1886	yes	10 km dnstrm fm Grande Prairie	stays open all winter
11	2831	yes	50 km upstrm of Grande Prairie	on Smoky River
11	1666	yes	50 km S of Wapiti upstrm of Grande Prairie	is on feeder creek (Big Mtn Creek)

Site	Trapline	Response	Distance	River Access
11	2773	yes	40 km upstm of Grande Prairie	Pinto Crk to Wapiti River
11	1558	yes	40 km upstm of Grande Prairie	feeder crk (Pinto)
11	1361	not reached		
11	2669	not reached		
11	1885	no		
11	2673	not reached		
11	2382	yes	40 km upstm of Grande Prairie	feeder creek (Pinto Crk)

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