RIVER OTTER MANAGEMENT SYSTEM AND DATABASE

September 1988

Maine Department of Inland Fisheries & Wildlife
Wildlife Resource Assessment Section
Furbearer / Bear Project

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PART I. – RIVER OTTER MANAGEMENT SYSTEM

INTRODUCTION

This document describes the current system by which biologists of the Maine Department of Inland Fisheries and Wildlife (MDIFW) make otter (Lutra canadensis) management decisions on an annual basis. Part I outlines the decision-making process by which biological information indicates management options. Part II details techniques for estimating biological parameters used as inputs in the decision-making scheme presented in Part 1. Goals, population and allowable harvest estimates, and habitat information were detailed in the 1985 otter assessment.

This document addresses biological factors of current otter management only. Social, political, and economic factors and goals are addressed in the 1985 otter assessment.

MANAGEMENT GOALS AND OBJECTIVES

Goals and objectives for otter management were established in the 1985 otter assessment to guide management through 1990. Goals and objectives were based on recommendations made to MDIFW by a working group composed of individuals representing public groups interested in otter management.

Management Goal

Maintain otter populations at 1985 levels (estimated to be at least 18,000).

Abundance objective

Maintain otter population at 1985 levels through 1990.

Harvest Objective

Maintain opportunity (season length and timing) and average harvest (currently about 700 otter) at 1985 levels through 1990.

Assumptions

Otter management goals and objectives are based on the following assumptions from the 1985 otter assessment:

- otter habitat throughout the State is capable of supporting otter populations at 1985 levels.

- the otter population is assumed to be at carrying capacity statewide and estimated at no less than 18,000.
- current harvest levels are not limiting otter populations.

MANAGEMENT DECISION PROCESS

Management decisions address the goal of maintaining a stable otter population while providing opportunity for use of the resource.

Decision-making is a series of yes or no answers to questions related to otter population status (Figure 1). Responses to questions are based on evaluation of all input criteria and the flow chart guides the manager to the appropriate and/or current management option.

For the purposes of this process, otter carrying capacity is considered constant between 5-year assessments of habitat quality and quantity.

Input Criteria for Otter Management

The following criteria are used to evaluate otter population size and stability. These criteria provide input to decision points in the flow chart and subsequently direct the manager to the best currently available management action or option(s).

In the 1985 otter assessment, otter carrying capacity was estimated at approximately 18,000 statewide, and the otter population was estimated to be at carrying capacity. An annual objective harvest of 900 otter was set in 1980 (5%), and an allowable harvest was estimated to be 3,200 (18%). During development of this document, the allowable harvest was reduced to 10% of the statewide population estimate, or to 1,800 otter. The otter harvest has exceeded 900 (half of the estimated allowable harvest) only twice in the last 10 years.

FIGURE 1. CURRENT OTTER MANAGEMENT DECISION MAKING PROCESS.

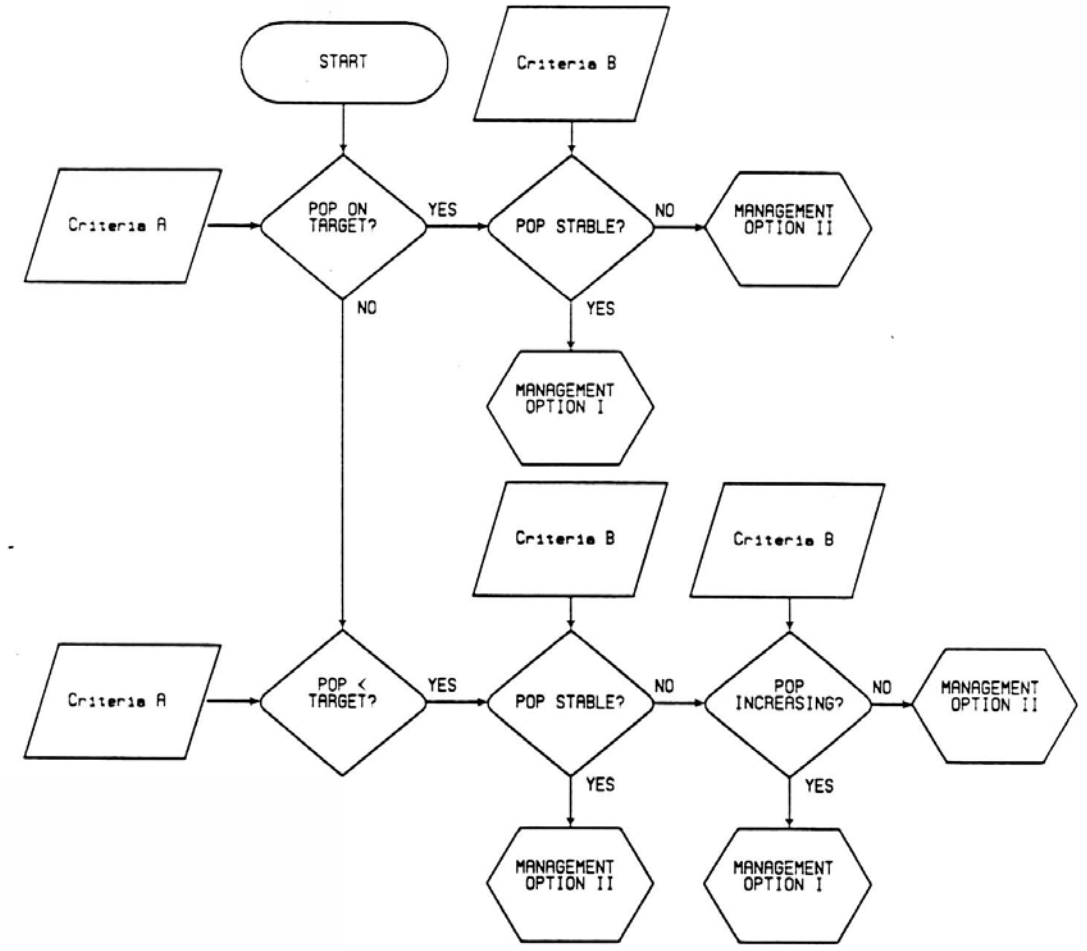
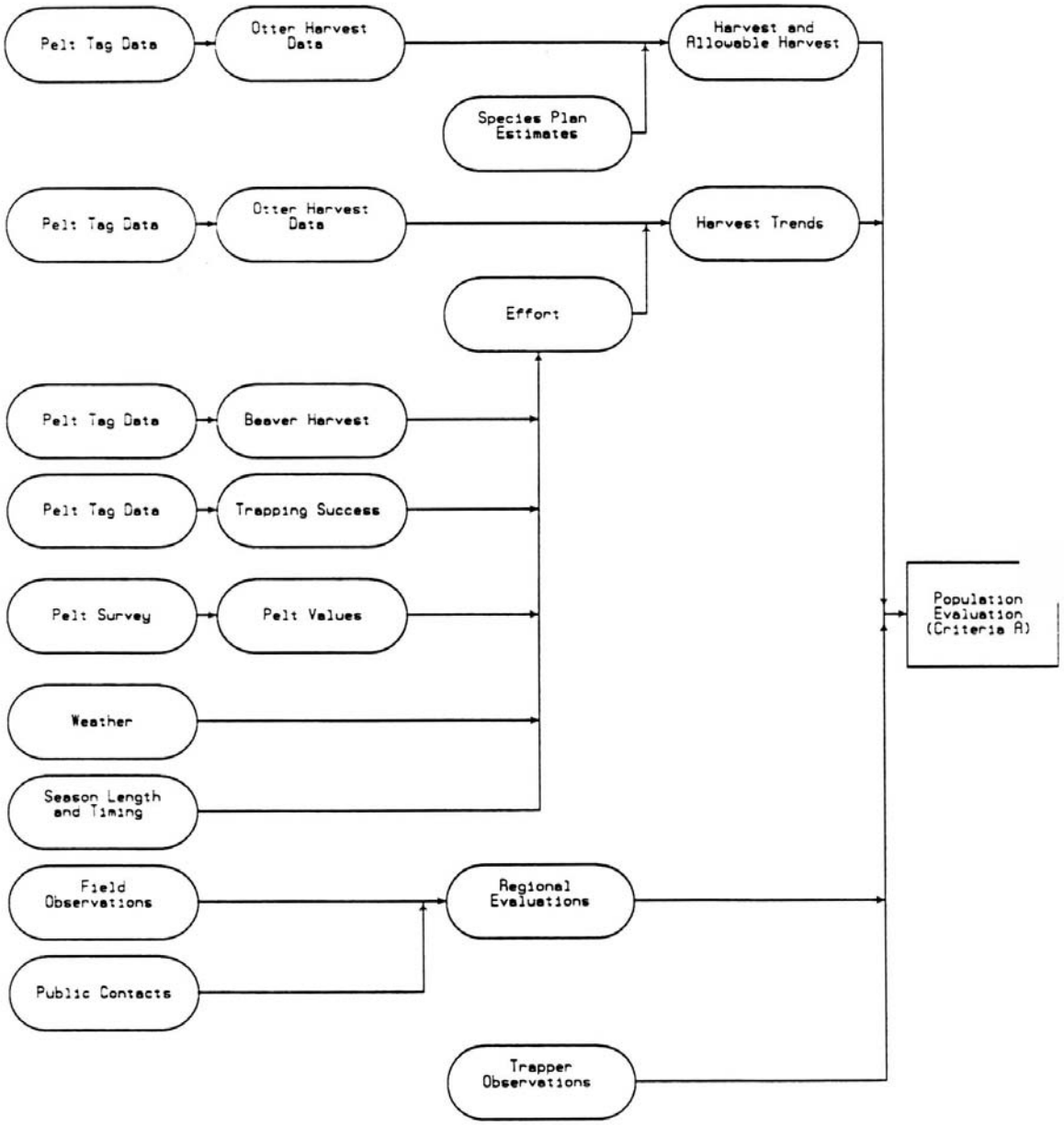


Figure 2. Information contributing to annual otter population evaluation (Criteria A).



Criteria A

This input attempts to address the question "Is the population on target (at 1985 levels)?" based on harvest data. if the statewide harvest exceeds the allowable harvest of 1,800 otter, the population is considered below target. If Criteria B indicates that the otter population is declining for 3 years, and there is no indication of a change in effort, the population is considered below target. The otter population can not rise above the target, because the target level is at carrying capacity.

Criteria B

This input answers the question "Is the population stable?" based on otter and beaver harvest trends. The assumption is that beaver trappers are potential otter trappers under the current beaver-otter season framework. Trends in both harvests are computed separately as running 4-year slopes produced by regressing harvest against year. Each species' harvest trend is considered stable if the computed slope is $\leq$10% (+/-). If the harvest trend slope is >10% (+/-) it is considered increasing or decreasing, respectively. Trends in otter and beaver harvests are compared, and if they diverge (i.e. otter harvest trend negative and beaver harvest trend positive, or,-vice versa) the otter population is considered unstable. otherwise, the otter population is considered stable. In addition, if the otter harvest exceeds the allowable harvest (1,800 otter) the population is considered unstable.

MANAGEMENT OPTIONS AND RECOMMENDATIONS

Lengthening otter seasons outside the standard fall water trapping season may be undesirable. To ensure that only otters were taken during the lengthened season, tight restrictions would be required on trapping techniques. In addition, lengthening actions would require modification of beaver season regulations. For these reasons, and because otters do no damage (except minor around fish rearing facilities) and their pelts lose value quickly after mid-December, only 2 management options are considered.

Management Option 1

Maintain current harvest levels through season length, timing, and trapper effort.

Management Option 2

Decrease harvest through shorter season length, change in legal trapping implements, or change in beaver trapping regulations. Common forbearer season dates make specific otter management actions difficult. Often otter are taken incidentally when trapping beaver, and enforcement problems may make otter restrictions impractical. However, realistic otter management options such as restrictions on beaver trapping (seasons or legal implements) may be desirable, depending on priority given otter versus other furbearers.

Criteria and Actions used to Reduce Harvest

The following criteria and actions will be used to reduce the next year's harvest if indicated.

Harvest Size (% of allowable harvest)	Action
• 101-110% (or population below target, as under Criteria A)	A. Prohibit the possession of incidental otter during beaver season.
• 111-125%	B. (A) above, PLUS: Outlaw the use of fencing in setting for beaver or otter.
• 126-150%	C. (A and B) above, PLUS: Outlaw the use of #220 Conibear traps in the fall season unless placed >4 ft above ground.

CHRONOLOGY OF OTTER MANAGEMENT ACTIVITIES

Otter pelts tagged	November-April
Pelt price survey	November-April
Harvest data entered	December-May
Meeting with MTA and furbuyers	March-April
Harvest, license, and other data analyzed	May
Meeting with regional personnel	May
Recommendations for rule changes	May-June
Public hearings	July
Regulation changes adopted	July-August

PART II. – RIVER OTTER MANAGEMENT DATABASE

OTTER DATA COLLECTIONS

Otter Harvest Data

State law and CITES require that each harvested otter be tagged by an agent of MDIFW (Appendix 1). Data recorded at the time of tagging include trapper name and license number, month of capture, and township of capture. These data are recorded in registration booklets (Appendix 11). Books are inspected by the Warden Service and submitted to the Data Entry Section of the Bureau of Resource Management. There, data are entered on the IBM mainframe computer of the Bureau of Data Processing. Harvest data are analyzed and summarized by a series of computer programs (Appendix III) that provide information on total catch by township, WMU, statewide, and individual, number of trappers catching otter, harvest/mi2, and historical harvest summary.

Harvest versus Allowable Harvest

Harvest figures are obtained through the summary of pelt tagging data. In the 1985 otter assessment, otter carrying capacity was estimated at 18,000-24,000 otter. Also in the assessment, otter -were assumed to be at carrying capacity statewide, giving a population estimate of 18,000-24,000 otter. An objective harvest was set at 5% of the lower range estimate (900) and an allowable harvest was set at 18% of the lower range estimate (3,200). During the development of this document, the review committee reduced the allowable harvest estimate to 10% of the lower population

estimate, or to 1,800 otter. Annual harvests are compared with objective harvests statewide.

Harvest Trends

Otter harvest trends are compared to trends in beaver harvests for assessing stability of the otter population. Unless trends in these two harvests diverge, the otter population is considered stable. This is the only use of harvest trends in otter management, due to close correlation with beaver trapping effort and lack of information on otter trapping effort.

Effort

There is no system in use to quantitatively evaluate otter trapping effort. However, several indices are used to gain insight into possible reasons for upward or downward trends in effort expended on otter trapping.

From November to April each year, a monthly mail survey of fur buyers is conducted (Appendix IV) to estimate average price paid to trappers for otter pelts. Adverse weather during the trapping season may cause a downward shift in effort. Trends in beaver harvests and/or numbers of trappers catching beaver or mink may grossly indicate changes in numbers of potential otter trappers. These indices may help explain the occurrence of a shift in effort, but cannot indicate changes in otter trapping effort.

Regional and Trapper Observations

When harvest analyses and summaries have 'been completed, copies are sent to regional biologists and to the Maine Trappers Association (MTA). Meetings are held to discuss regional and trapper observations in conjunction with harvest analysis information. These meetings provide supplemental information from people that spend time in the field.

LIST OF APPENDICES

APPENDIX I. – Rules governing the tagging of otter pelts.

H. Tagging Procedure

It shall be unlawful for any person to possess, sell, give away, buy, accept as a gift, offer for transportation or transport any raw fox, bobcat, marten, fisher, coyote, raccoon, beaver, mink, or otter skins unless each skin is tagged.

All raw skins of these species must be presented to a warden, or other agent designated by the Commissioner, and each raw skin legally presented shall be tagged. All information requested relating to the taking of each skin shall be accurately and truthfully reported. A fee of 25¢ shall be paid for each skin tagged.

All raw fox, marten, fisher, coyote, raccoon, bobcat, beaver, mink, and otter skins shall be presented for tagging within 10 days after the closing of the open season thereon, except the raw skins of all bobcat taken during the open bobcat hunting season shall be presented, by the person who killed said bobcat, for tagging within 72 hours of killing said animal.

Any raw skins of these species that come into this State in any manner from any other state, country, or province shall bear the official stamp, tag, or seal of such other state, country, or province. Any suck skins that does not require an official stamp, tag, or seal, shall be tagged in accordance with this section by the person possessing such raw skins. The fee for tagging such imported raw skins shall be 25¢ for each tag so issued. Licensed taxidermists who import raw skins for the purpose of taxidermy are exempt from the provisions of this paragraph.

I. Raccoons

Raccoons may be hunted at night during the open season only when the hunter (i) is accompanied by a dog, (ii), uses an electric flashlight to locate raccoons that are treed, or held at bay, by a dog or dogs, and (iii) is in possession of, an uses a rifle, pistol, or revolver of no greater power or caliber than one which uses.22 caliber long rifle ammunition; said rifle to be loaded only when being used to dispatch a raccoon that is treed or held at bay by a dog or dogs.

J. Size of Traps

Animals may be trapped with any common ordinary steel trap.

APPENDIX II. – Sample page from pelt tagging registration book.

FUR TAGGING SHEET

(see instructions outside and inside front cover)

License Type [1]	License Number [2]	Seal Number [3]	Species [4]	Month [5]	Year [6]	Town Caught (use complete Township ID) [7]	County [8]	Beav Size
41	T-16 73	71 9 76	Red Fox	11	86	Moose River	Somerset	
41	T-16 73	71 9 77	Marten	11	86	T[illegible]	"	
41	T-16 73	71 9 78	"	11	86	"	"	
41	T-16 73	71 9 79	"	11	86	"	"	
41	T-16 73	71 9 80	"	11	86	"	"	
41	T-16 73	71 9 81	"	11	86	"	"	
41	T-16 73	71 9 82	"	11	86	"	"	
41	T-16 73	71 9 83	"	11	86	"	"	
41	T-16 73	71 9 84	"	11	86	"	"	
41	T-16 73	71 9 85	Marten	10	86	"	"	

APPENDIX III. – Summary of computer programs and analyses applied to otter harvest and trapper data.

Description of furbearer data analysis and information system.

Program	Input Data	Outputs	Users
TRAPLIST SAS	License data (tape)	Alphabetical listing by county of trapping license holders.	Requests from outside sources.
LISTTRAP SAS	License data (tape)	Numerical listing by license and alphabetical listing by name of trapping license holders.	1) Furbearer Project 2) Warden Service
LICSUM SAS	License data (tape) Township data (disk)	Summary of licenses by type by by region and WMU.	1) Furbearer Project 2) Regions 3) Administration
PRELIMHV SAS	Harvest data (tape)	Summary of harvest by WMU for each species.	1) Furbearer Project 2) Regions 3) Administration 4) Public
COUNTYHV SAS	Harvest data (tape)	Summary of harvest by county for each species.	Requests from outside sources.
TAPEFIX1 SAS	Harvest data (tape) License data (tape)	Correct license type in harvest file and create disk file.	
TAPEFIX2 SAS	Harvest data (tape)	Write corrected harvest file back onto tape.	

Continued

Program	Input Data	Outputs	Users
FURTAG SAS	Harvest data (tape) Township data (disk)	Harvest data are summarized by township in data set on disk (FURBEAR. TWNHRVnn). Harvest and harvest/mi^2 listing is produced by township, WMU, region, WMU within region, and statewide.	1) Furbearer Project 2) Regions 3) Public
TOWNSUM SAS	FURBEAR. TWNHRVnn data sets (disk) Township data (disk)	Harvest and harvest/mi^2 listing is produced for all years since 1976. Long term and short term averages are computed for all groupings. Summary data set is produced (FURBEAR. TOWNSUM).	1) Project 2) Regions 3) Administration
TOWNSUM2 SAS	FURBEAR. TWNHRVnn data sets (disk)	Harvest listing is produced for last 2 years by township within region.	Lists are used by regional biologists and public in providing information to Wardens.
LICTAG SASNEW	Harvest data (tape) License data (tape) Township (disk)	Harvest by WMU by harvester (trapper, hunter and combined) data set is created (FURBEAR. TRPHRVnn). Trapper listing by WMU is produced. Summary of harvest in WMU by region of residence (carpet-bagger) is produced to monitor trapper movement.	1) Regions 2) Project

Continued

Program	Input Data	Outputs	Users
TYPETAG SASNEW	FURBEAR. TRPHRVnn data set (disk)	Listing of harvest, catch/successful harvester, and successful harvesters by license type and general category by WMU and statewide is produced. Summary data set is created (FURBEAR. TYPHRVnn).	Project
HARUSUM SAS	FURBEAR. TRPHRVnn data sets (disk)	Tables of historical harvest and success rate by general category and produced by WMU and statewide and plots of harvest, successful users, and success rate statewide.	1) Region 2) Project 3) Administration
WARDNTAG SAS	Harvest data (tape) License data (tape) Township data (disk)	Summary of harvest by individual within each warden district is produced. A summary of pelts tagged by warden district and division is produced.	Warden Service
TGSEARCH SAS	Harvest data (tape)	Search for all information on specific tag number.	Warden Service
TRSEARCH SAS	Harvest data (tape)	Search for all information on specific trapper.	Warden Service
BIOLIST SAS	Biological data (tape) Township data (disk)	Biological data file for all years is created on tape (FURBEAR. BIODATA). A listing by ID number within township is produced.	1) Project 2) Regions 3) Public (age requests)

Continued

Program	Input Data	Outputs	Users
BIODATA SAS	FURBEAR.BIODATA (disk)	Complete tables of sex and age data are produced. Reproductive data are summarized.	Project
HRVWEEK SAS	FURBEAR.BIODATA (disk)	Tables of frequency of juvenile harvest by sex by date are produced. Tables of sex and age breakdown by week of fall season are produced.	Project
HRVCHRON SAS	FURBEAR.BIODATA (disk)	Bar graphs of chronology of harvest and produced by WMU and statewide.	1) Project 2) Regions
MCIRMOD SAS FCIRMOD SAS MCIRJUV SAS FCIRJUV SAS	Biological data output Warden data output License data output (data form)	Change-in-ratio model to estimate exploitation rate for males and females of juvenile and older age classes	Project
POPMODEL SAS	Biological data output Harvest data output Exploitation rate output (data form).	Life equation type population model used to evaluate management options.	Project
TRAPLONG SAS	Trapper Longevity File	Updates longevity file with current year's license sales.	Project

Continued

Program	Input Data	Outputs	Users
TRAPLONG PRINT	Trapper Longevity File Trapper Listings	Update longevity file when license number is unknown.	Project
TRAPLONG MODEL	Trapper Longevity File	Life equation type population model of trappers.	Project
QUESTnn SAS	Trapper Questionnaire File	Analysis of trapper questionnaire data.	1) Project 2) Administration

APPENDIX IV. – Monthly pelt value mail survey form.

MONTHLY FURBUYERS REPORT (VOLUNTARY)

Please record the average price you paid for the pelts of each of these species bought in Maine from trappers and hunters during the month indicated. This price information will be combined with information from other buyers to develop an average statewide price. To protect your confidentiality, this report will be destroyed after recording the prices given. If you did not purchase any pelts during the month, check "NO" and return the form anyway. If you have any questions, please contact us by mail or phone. A stamped, addressed envelope is enclosed for this report. This form will be mailed to you monthly through April, 1988.

Thank you for your assistance.

Wildlife Division
Maine Dept. Inland Fisheries & Wildlife
P.O. Box 1298
Bangor, ME 04401-1298

(941-4471)

Name of Furbuyer:_____

Month: December

Did you buy pelts during this month: YES____ NO____

Species	Average Price	Species	Average Price
Beaver	_____	Bobcat	_____
Coyote	_____	Grey Fox	_____
Red Fox	_____	Pine Marten	_____
Fisher: Male	_____	Mink: Male	_____
Female	_____	Female	_____
Muskrat	_____	Otter	_____
Raccoon	_____	Skunk	_____
Weasel	_____		

John R. McKernan, Jr.
Governor

William J. Vail
Commissioner

DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

Telephone (207) 289-3371

Wildlife Resource Assessment Section
P. O. Box 1298
Bangor, ME 04401-1298
Telephone (207) 941-4472

November 23, 1987

Dear Maine Furbuyer:

We need your help again this year to keep our fur value information up-to-date. As in previous years, we will mail monthly Furbuyers Report Forms to you throughout the 1987-88 furtaking seasons.

Please report the average pelt price you pay to trappers and hunters each month. We do not need to know about the prices of fur you buy from other sources. The enclosed forms are for the month of October and November; each has a self-addressed, stamped return envelope attached. You will receive a Furbuyer Report form at the end of each of the coming winter and early spring months.

Each completed Furbuyers Report Form is destroyed as soon as the price information is transcribed. Only price information is retained in our files; no names are recorded to ensure your confidentiality.

We appreciate your cooperation in our efforts to monitor prices paid for Maine fur. Please feel free to contact us in writing or by telephone (941-4471) if we can be of assistance.

Sincerely,

Ken Elowe, Leader
Furbearer/Bear Project