

RESOURCE ALLOCATION:  
AN ONTARIO SOLUTION.

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ABSTRACT

Conflict among resource users is a common phenomenon, which often confounds the task of resource management. In 1983, Ontario embarked on a "Selective Harvest Program" for moose, in which opportunity to harvest adult animals was limited. In order to facilitate the implementation of this program, a resource allocation policy was developed which partitioned the resource among the four major users (viewers, subsistence hunters, resident hunters and the tourist industry) in a hierarchical and proportional fashion. Conceptually, viewers have the use of the resource all year round and the consumptive users have the use of the harvestable portion of the resource during the open hunting season. Within the harvestable portion, the subsistence rights of Treaty Indians are recognized first and the remainder proportioned among the residents and tourist industry on a 90 percent / 10 percent basis provincially. In these latter two groups licences are allocated to individual users by lottery draw for residents and a "Self Allocation Process" for tourist operators.

ALCES VOL. 19, 1983

The moose population in Ontario has declined over the past 25 years and, in most areas is below numbers that the habitat could support. This decline has resulted in a reduction in associated recreational and economic benefits. Uncontrolled hunting is believed to be one of the significant factors affecting this resource, and therefore must be a major part of the solution.

During public discussions of the resource management techniques available to rehabilitate the herd, the mention of active control of hunters resulted in heated, and often polarized, opinion from user groups. The tenet of these opinions was "Don't put any controls on me until you control (get rid of?) the other users." Because resource managers recognized, as legitimate, the use of moose by the different groups, no action was taken to control hunting. This scenario persisted for many years, and effectively blocked all but the most conservative efforts to restore the herd.

In order to break this deadlock, and rebuild the moose population, a Moose Management Policy was approved in principle on October 22, 1980. The two principle components of this policy affecting hunting were: 1) control of the number of adult animal hunting licences, and 2) an allocation section which apportioned the resource among user groups. The purpose of this paper is to describe briefly the overall allocation policy, and the secondary allocation, within one of the user groups, in greater detail.

PRIMARY ALLOCATION

The principle 'users' of the moose resource are viewers,

subsistence hunters, resident and non-resident hunters, and the tourist industry. Each of these users have different objectives for the resource, they may or may not use it at the same time of year, and they have different legal claims to its use. While it is recognized that considerable overlap exists among these groups and that individuals may be in more than one group at the same instant, we have considered the users to be discrete entities for simplicity.

Subsistence hunters are Treaty Indians, who, in general, have the treaty right to kill moose for personal use at all times of the year. Viewers, likewise require the opportunity to see, but not kill, moose at all times of the year. Recreational hunters may only use the harvestable component of the herd during the season open to hunting, and the tourist industry uses the resource for economic benefit (of themselves, and the Province) by catering to hunters or, indirectly, through viewing opportunities available to their guests. Much of the direct economic benefit to the tourist industry comes through non-resident hunters.

Because of subsistence rights stated in Treaties, Indians have legal precedence over all other users. They have priority, and can use whatever component of the herd they choose, at any time of the year. The remainder of the harvestable surplus could be divided among the other "consumptive" users in order to meet the recreational and economic objectives of our wildlife management efforts. Viewers obtain recreational benefits and provide economic benefits with minimal impact on the resource. Their activities need not be controlled.

Theoretically, it was felt that "economic benefits" from

hunting should be accrued through the tourist industry and that low cost "recreational benefits" from hunting should be reserved for Ontario residents, although, in reality, considerable overlap in benefits does exist. Consistent with this, ten percent of the recreational and economic harvest target was allocated to the tourist industry to sell to their resident or non-resident clientele, and the remaining 90 percent was allocated to resident hunters to be distributed through a lottery draw process. A schematic representation of the allocation policy is presented in Figure 1.

The harvest by subsistence hunters is determined through a survey of Indian trappers, or otherwise estimated. The number of hunting licences for each group in each Wildlife Management Unit was determined by field offices, based on traditional proportions and hunting success rates. The recommended quotas were compiled provincially, and adjusted to meet the allocation policy. A schematic of this process is outlined in Figure 2.

While it was acceptable to distribute licences among individual resident hunters by lottery draw, this was not an acceptable procedure for the division of licences within the tourist industry, because their needs could not effectively be met by random processes. It was therefore necessary to develop a secondary allocation methodology which equitably divided licences among tourist establishments.

#### SECONDARY ALLOCATION

The objectives of the policy to allocate licences within the

Figure 1. Schematic representation of the allocation program

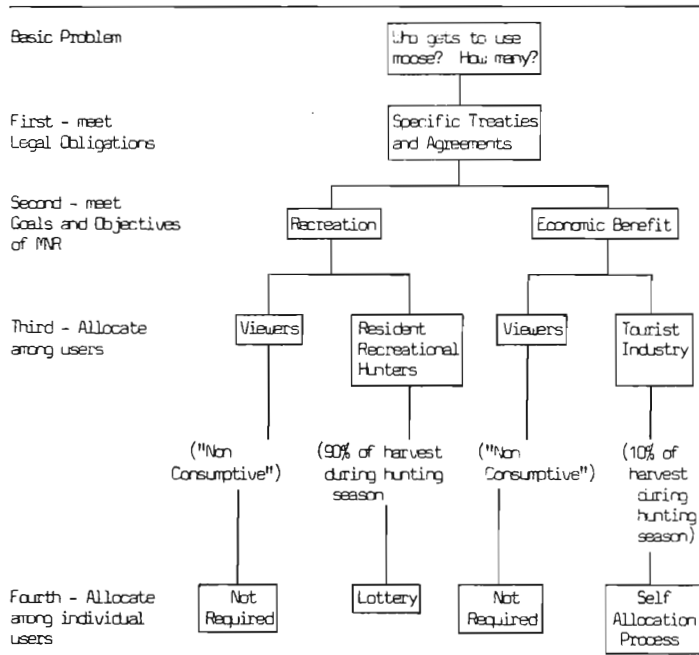
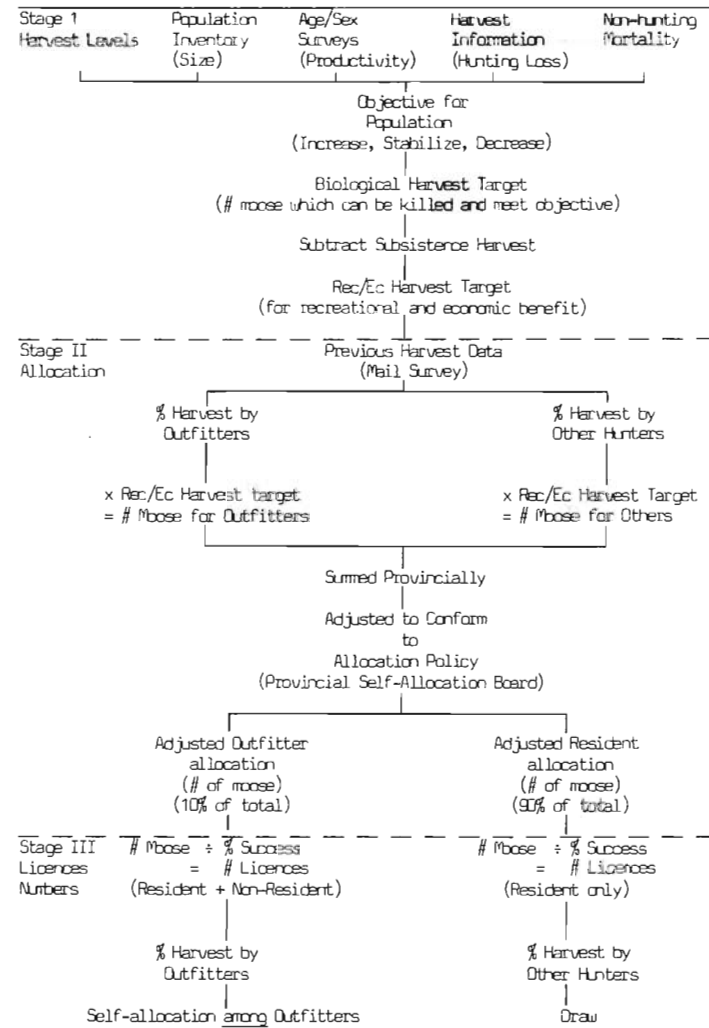


Figure 2. Process for Determining Harvest Levels, Allocation and Licence Numbers



tourist industry were:

- 1) to provide economic benefits for the people of Ontario through the tourist industry;
- 2) to manage the moose population in order to obtain this benefit;
- 3) to maintain a fair and open marketplace within the tourist industry in order to ensure that the consumer received fair value for monies paid; and
- 4) to provide tourist outfitters with a knowledge of their allocation in time to market moose hunting packages prior to the start of the hunting season.

The most acceptable method for distributing licences among individual outfitters was determined by a survey of the outfitters. This was undertaken during the summer of 1981. A working paper explaining the merits and drawbacks of various options was presented to assist respondents and the results of the questionnaire were published in a Ministry of Natural Resources (OMNR) document entitled "Allocation of Moose Hunting Opportunities within the Tourist Industry of Ontario (January, 1982)". The preferred option was "Self-Allocation" by the users themselves. This implied that the tourist industry, through local "Self-Allocation Meetings" of all eligible and interested outfitters, was responsible for the allocation of licences among its members.

A letter explaining the process and application forms was sent to all known outfitters and a series of self-allocation meetings were held across the province in mid-November of 1982.

There were two possible outcomes of the Self-Allocation Meetings: 1) all licences were allocated with the agreement of those present; or 2) disagreements occurred which prevented the allocation of some or all licences.

If disputes arose at the meeting, no allocation could be finalized. These disputes were forwarded to a Provincial Self-Allocation Board, appointed by the Minister, for resolution. This board, composed of tourist outfitters, businessmen, and hunter representatives, was also responsible for adjusting quotas recommended by the field.

The time span from licence allocation to the opening of the hunting season was nearly one year. In that period a number of events could occur which would alter the numbers of licences needed by each outfitter. To accommodate this, licences were transferable among establishments, with the approval of the Provincial Self-Allocation Board.

Hunting licences in Ontario are only valid to take calf moose unless validated by a tag for an adult animal. At least six weeks prior to the opening of the moose season, the tourist outfitters submitted applications, to the Ministry, for validation tags in the names of their clients. The outfitters received these tags prior to the moose hunt. Changes in validation tags, prior to the actual purchase of the licence, could be made at OMNR district offices at any time.

#### ALLOCATION FORMULA



A number of factors effect an equitable allocation among outfitters. These are:

1. The type of establishment relative to the capital investment, target client group and hunter participation necessary to remain economically viable;
2. The location of the establishment relative to the surrounding moose population and other nearby outfitters;
3. The accessibility of the establishment relative to the moose population and heavily hunted access corridors; and
4. The size of the establishment (guest capacity or units of accommodation) recognizing that larger establishments require more business for viability.

Using some of these criteria it was possible to develop a formula to assist in arriving at a fair allocation. This formula was one of several options to be used at the discretion of those attending the local meetings. Because some tourist establishments have several different types or locations from which they hunt, the formula determines a point value for each establishment (Individual Establishment Value) within each Wildlife Management Unit. Licences were allocated in the proportion that the Individual Establishment Values are of the Total Point Values of all establishments in the Unit.

"Weighting factors" were used to accommodate the differential importance of the criteria or the categories within each criteria. These weighting factors could be differentially adjusted, both within and among criteria, at the discretion of the operators, to place

greater or lesser emphasis on the different attributes. The suggested weighting factors were as follows:

Type of Establishment Value: (This assumed that outpost camps and tourist lodges depend more on hunting/fishing clientele than hotels and motels.)

Outpost Camp or American Plan Lodge	=	2 points
Housekeeping Cabin or Cottage Establishment	=	1.5 points
Hotel/Motel	=	1 point

Accessibility Value (This assumed that moose are generally more abundant in less accessible areas);

Road access	=	1 point
Train or Boat	=	2 points
Fly-in	=	3 points

Size Value (This recognized that larger establishments require more clients to remain viable);

Each 'unit' (cabin or hotel/motel type room or bed)	=	1 point
Unauthorized structure ie. no permit	=	0 points

For each outfitter a separate point value is calculated for the portions of his establishment in each Wildlife Management Unit in which he operates, according to the following formula.

$$\text{Individual Establishment Value (IEV)} = T \times A \times S$$

where: T = Type Value

A = Accessibility Value

S = Size Value

Total Point Value (TPV) =  $\Sigma$  (IEV)

Individual Outfitter Allocations =  $\frac{IEV}{TPV} \times \#$  of licences

An example of the use of this formula is presented in Table 1.

#### USE OF PREVIOUS HUNTER NUMBERS OR HARVEST

One problem within the allocation process was whether or not to restrict the availability of licences to those outfitters who had previously catered to moose hunters. This issue was addressed at the local Self Allocation Meetings.

Presumably, the inclusion of this criterion in a formula would be based on the number of hunters accommodated, or the number of moose harvested. This however would raise other allocation problems. For instance, should outfitters with low success (ie. few kills) receive more licences because they provide greater economic return for each animal harvested, or should outfitters with high kill rates receive more licences, because they might be in better moose range?

#### SUMMARY

While the first year of the use of this Allocation Policy is not complete, the signs of success are most encouraging. There has been almost no disagreement among the different resource user groups. Within the tourist industry, the local meetings were well attended and the allocation formula was used, in an unaltered form, in most of the

Table 1. Example of the use of the allocation formula

#### A. Information from Outfitters

- #1 Smith has four outpost camps, two accessible by road and two accessible by air, and a motel with five units accessible by road.
- #2 Jones has four licenced outpost camps and two unlicenced housekeeping cabins which he uses occasionally for clients. All are fly-in.
- #3 Doe has 13 outpost camps, three accessible by water, four accessible by road and six accessible by air.

#### B. Calculation of Individual Establishment Values

- #1 Smith  
 2 (x) road accessible (x) outpost units =  $2 \times 1 \times 2 = 4$   
 2 (x) air accessible (x) outpost units =  $2 \times 3 \times 2 = 12$   
 5 (x) road accessible (x) motel units =  $5 \times 1 \times 1 = 5$   
 TOTAL 21
- #2 Jones  
 4 (x) air accessible (x) outpost units =  $4 \times 3 \times 2 = 24$   
 2 unlicenced (x) air accessible (x) housekeeping units =  $0 \times 3 \times 1.5 = 0$   
 TOTAL 24
- #3 DOE  
 3 (x) water accessible (x) outpost units =  $3 \times 2 \times 2 = 12$   
 4 (x) road accessible (x) outpost units =  $4 \times 1 \times 2 = 8$   
 6 (x) air accessible (x) outpost units =  $6 \times 3 \times 2 = 36$   
 TOTAL 56

TOTAL POINT VALUE = 101

#### C. Calculation of Licence Numbers

50 licences are available:

- #1 Smith =  $\frac{21 \text{ (Individual Value)}}{101 \text{ (Total Points)}} \times 50 \text{ licences} = 10 \text{ licences.}$
- #2 Jones =  $\frac{24 \text{ (Individual Value)}}{101 \text{ (Total Points)}} \times 50 \text{ licences} = 12 \text{ licences.}$
- #3 Doe =  $\frac{56 \text{ (Individual-Value)}}{101 \text{ (Total Points)}} \times 50 \text{ licences} = 28 \text{ licences.}$
- TOTAL = 50 licences.

meetings. The number of complaints received have been relatively few, and these relate mostly to the reduction of hunting opportunities or being missed by the mailings. The overall process and its fairness seems most acceptable to all concerned.