

MOOSE HARVEST WORKSHOP

Whitehorse, Yukon
July 30, 1982

Vince Crichton] - Co-Chairman
Tim Timmermann]

Participants

- Sask. - H. Hunt
- Man. - V. Crichton
- Ont. - C. Greenwood and T. Timmermann
- Ak. - B. Gasaway, W. Ballard, D. Kellyhouse
- B.C. - B. Churchill
- P.Q. - M. Crête
- Idaho - J. Peek
- Alta. - B. McKettridge
- N.W.T. - V. Hawely
- Me. - A. Crossley
- Sweden - F. Sandegren
- Minn. - P. Karns
- CWS - G. Trottier

1.a) How many moose hunters hunted in your Province/Territory/
State in 1981?

Questionnaire Summary:

<5,000	10-25,000	65,000+
N.W.T. (5,000)	Ak. (24,000)	P.Q. (115,000)
N.B. (4,900)	Nfdl. (11,000)*	Ont. (72,200)
Yukon (3,000)	Sask. (14,000)	Alta. (68,000)
Minn. (2,500)**	Man. (10,500)	B.C. (65,000)
Me. (1,000)		
N.S. (440)		

* # lic. issued, 2 hunters per licence permitted
** 4 hunters per licence

- b) Moose harvests for above 1979-80 - total approx. 70,000
(see Workshop session Alces 17: XXI - XXVI).
- Est. † 400,000 hunters took † 70,000 moose in above 14 N.A. jurisdictions.
 - 81% of the hunters in P.Q., Ont., Alta., and B.C. took 66% of the kill.

2. What type of hunting strategy do you employ in your jurisdictions (ie. any sex/age, selective sex/age, sharing moose, draws, season manipulation, etc.)?

Questionnaire Summary:

- 5 different strategies employed;
- 8 Prov./Terr. use any sex incl. calves
- 2 use bull only with limited draws
- 2 use season manipulation and selective sex
- 1 use bulls/calves
- 1 use combination of above.

Workshop discussion question: how does Sask. who employ the bull/calves and cow quota strategy explain the continuing decline in moose populations?

Answer: Our selective harvest system has been overwhelmed by other influences - primarily the harvest year - round by Treaty Indians in many parts of Sask.

Question: What is your option in those areas?

Answer: - to have the Federal Government change treaties or
- perhaps to create linear game preserves on all haul roads and highways in moose range which would apply to all hunters including Treaty Indians. We estimate this could reduce the unregulated kill by 80-90%.
- or close all forest access roads that forest companies no longer need (we have \$100,000 available this year for this purpose).

We still feel our harvest strategy works if we can control the other influences.

Man. - similar problem with Treaty Indians and access
- we cannot close roads if public funds spent on their construction
- we have had a bulls only season for 10+ years in many areas with shortened moose winter seasons
- present licenced harvest = 1,700 moose scattered over Province
- generally do not feel this magnitude is negatively impacting our bull population
- in some areas we have had a bulls only for about 15 years, this past winter we have observed up to 110 calves/100 cows and in others 90/100.

Ont. - we should strive to open roads to distribute the kill more evenly
- otherwise hunters are confined to smaller and smaller areas
- also permanent road systems allow a greater flexibility by forest management companies to modify cuts.

Ak. - managing access is not the answer, we have a problem with ethics/morals in our society
- hunting regulations should handle these problems but unfortunately people don't all go by regulations
- people's attitude have been the success of the Scandinavian and European system
- before we create roads we should change people's attitudes.

- Ont. - agree - in Europe the hunter has an obligation which the N. A. hunter lacks
 - ideally we should construct all roads so that we can maximize hunter distribution and deal with the attitude problem over time.
- B.C. - we have 2 issues; regulating the hunt and the effects of access on harvest
 - in B. C. ATV access is quickly replacing road access problems
 - we have a limited problem with Treaty rights compared to Sask.
 - suggest that PR with native groups is the long-term solution
 - we attempt to regulate our legal hunter harvest by restricting ATC's and the use of roads (closing some to hunting) and have good compliance
- P.Q. - hunters only have 2 ways to access moose, by road or by air
 - can't understand why roads should be closed.
- Man. - we use a designated route system in a number of game hunting area
 - hunters are restricted to specific routes ie. old roads and trails until they shoot an animal
 - thereafter they may retrieve their kill by the most direct route using a vehicle
 - if we let them travel anywhere by vehicle while hunting our population just could not stand up
 - max. distance between designated routes is about 6 mi.
 - hunters don't randomly distribute, they clump.
- Sask. - we have no problem with our regulated hunters
 - they feel we are doing a good job
 - our problem occurs after the legal season closes
 - there is no place in good moose range where a person cannot drive within about 3 miles
 - from November 15 till spring the unregulated kill by Treaty Indians accounts for 50+% of the legal kill
 - our main objective is to protect the resource
 - linear game preserves which would apply to all regulated hunters and all unregulated hunters appears to offer a method of controlling the kill.
- Man. - our hunters support the designated route system and are asking us to expand it in some areas
 - this tends to improve the quality of our hunt.
- Idaho - interesting to see differences in our perspective
 - road closure is a major component of road management programs in some NW states
 - elk for example tend to avoid an area $\frac{1}{2}$ mi. from roads
 - I am not aware of good information on response of moose in hunted areas to human activity
 - alot of elk habitat is not being used during and after the season in Idaho because of so much human activity. These animals are conditioned to effectively shun the area.

- Ont. - over 80% of the kill occurs within $\frac{1}{2}$ mi. of roads generally during first 2 or 3 weeks.
- Idaho - same thing for elk in Idaho - all elk are killed within a short distance of a road
 - however, elk densities are much higher the farther away from a road you travel
 - in some parts of the state the unregulated harvest of elk by Treaty Indians and poaching is more than the legal take
 - the legal take is $\frac{1}{2}$ or less of the total take state wide
 - this problem is aggravated by access and with moose we have a problem of control similar to Sask.
- Man. - in some cases our subsistence take is many fold that taken by licenced hunters.
- Ala. - if in Canada you don't have control of your subsistence take, it doesn't matter what you do with access
 - the issue really is what can be done to regulate the native harvest, otherwise I don't see how you can have any kind of a satisfactory management scheme.
- Man. - agree in Man. further restriction of the licenced hunter will not affect the population one bit.
- Alta. - we are just bringing in the designated route concept you have in Man.
 - assuming the majority of native harvest occurs from vehicles, and if we can control vehicle access on designated route's we could reduce that particular kill.
- NWT - we have very few moose taken by sport hunters but we have a demonstrated decrease in densities close to native communities
 - have agreed to control harvest with native bands within 4 mi. of a highway
 - we believe if we can start talking with them then we have a chance.
3. How do you estimate the total number of moose in your jurisdiction or game management areas?
- Answer: Adequately covered in July 27th aerial survey techniques workshop session.
4. How do you arrive at the number of moose to be harvested and how do you translate this to licences?
- Questionnaire summary:
- 4 jurisdictions do not attempt to limit anything
 6 jurisdictions use population surveys with estimates of what is ideal and use past hunter success
 1 jurisdiction uses public pressure.
5. What percentage of the prehunt population do you consider to be available for hunting purposes?

Questionnaire Summary:

varied from 5% up to 20%.

Workshop Discussion- Question: In Ontario without a restriction on hunter numbers, how do you apply the 10%?

Answer: the 10% is applied to the 2 controlled hunts we presently run
 - in the balance of the Province it is not presently being applied because we do not control the number of licences issued
 - we have used a model to determine a max. allowable harvest
 - in our 2 controlled hunts, we wanted a 5% increase in population each year so we set a 10% harvest rate. This was reported on in the 17th N.A. and will be published in the 18th be Greenwood et al.

Man. - speaking for Nfdl. who have a Province-wide quota hunt since 1973 and a hunter success of \pm 50% yet have a population which is decreasing - they have reduced licences from 14,000 to 11,000
 - their objective is to maintain hunter success.

Ak. - we use population trend data monitored through a harvest ticket to set quotas
 - while we have an excellent method (aerial census) of estimating population size, the sheer size of the State, limits its application
 - trend counts and changes in the bull ratio are used
 - reported harvest over large areas approximate 5% of the population
 - unreported harvests can be substantial but usually in areas where we have a very low sport harvest
 - in most areas, it appears we can presently support both the unreported (illegal subsistence) and sport harvest
 - where we have problems we use a lottery permit.

6. In setting quotas, what assumptions do you make?
 What are the key elements employed in the development of quotas?

Questionnaire Summary:

4 jurisdictions don't take anything into account
 6 of 12 jurisdictions consider losses from subsistence predation and poaching
 5 jurisdictions assume that past harvest success rates etc. will follow
 4 jurisdictions assume recruitment will be close to what they are anticipating
 3 assume that their population size is accurate
 1 assumed that typical hunting conditions will prevail
 1 assumed that the total harvest will favour bulls.

Workshop discussion:

P.Q. - a quota is too simple a concept
 - should consider max. sustained yield and carrying capacity since depending on natural mortality factors the percent of the population that can be taken will change.

Me. - we decided to distribute hunters by quotas to avoid excessive kills in traditional moose viewing areas
 - in future we will look more closely at biological rational.

Ont. - quota setting is extremely difficult
 - we may be over emphasizing the accuracy of aerial census
 - other parameters ie. physiological, population demographics, etc. should receive more attention.

Ak. - our aerial census technique is used in tandem with trend indicators.

Ont. - we spend alot of time and effort on aerial census
 - however without mandatory reporting of kill, some of our harvest estimates are questionable.

Ak. - for the most part we set hunting season length and bag limits to achieve a number of animals killed and adjust if we don't like the number killed the previous year
 - aerial population estimates are carried out in such few areas that they really play a minor role.

Sweden - quotas as decided entirely on the basis of aerial census techniques similar to those described by Gasaway
 - in addition, we use data provided by hunters ie. number of twins per cow, etc.

Question: We agreed that aerial census was less than accurate, does Sweden use an adjustment figure to estimate the number of missed moose?

Answer: - we only census under very specific conditions and believe we get approximately 90% of the animals
 - based on this figure we set a quota
 - in last few years this consists of 50% calves, 50% adults (equal bulls and cows)
 - more recently we are promoting a higher cow harvest and decrease the cow/calf ratio in the harvest
 - every moose shot is registered so we know sex and many are aged.

P.Q. - in N.A. it appears clearer and clearer that moose populations are limited more by predation than habitat
 - suggest it be desirable to consider physical conditions re: reaching carrying capacity.

Ont. - some jurisdictions use a mandatory report/return but few enforce such a requirement
 - there is a real variation in the percentage return either voluntary or mandatory
 - 20-30% of hunters do not comply
 - Sweden has the ideal system (100% return)
 - we should emphasize population demography and avoid using only aerial census data.

LIII

- Ak. - to put this question to rest, suggest if we knew that we had the capability to count every last moose, can anyone knowing only the exact number set a harvest quota?
 - obviously no one can, so the census data is of some value but all other parameters need to be considered
 - relative change (is the population increasing or decreasing) is most important as well as the relative health of that population. Numbers of animals is just one small component in setting quotas.

7. How do you assess the licences hunter harvest (questionnaire etc.)?

Questionnaire Summary:

- 8 jurisdictions use voluntary mail questionnaires and check station returns
 6 jurisdictions employ mandatory reporting, registration and/or questionnaires.

Workshop Discussion:

Question for the 6 jurisdictions (Minn., N.B., N.S., P.Q., Me., and Ak.) which employ mandatory registration or reporting - how do you enforce?

- Ak. - we have 2 kinds of hunts; a lottery permit hunt and a regulation permit hunt
 - the lottery permit hunt puts all successful candidates on a computer list and requires mandatory reporting
 - our F&W protection arm attempts to enforce non-compliance
 - our regulation permit hunt is essentially voluntary but we coerce hunters into thinking its mandatory.
- P.Q. - registration is required within 72 hours after extraction from bush
 - mail questionnaires indicate a 90% compliance level but the 10% non-compliance cannot be detected.
- Minn. - people caught with an unregistered moose are taken to court
 - have had only to arrest 2 or 3 in the last 5 seasons
 - the majority are very co-operative
 - we use registration on W.T. deer which is not enforced and our compliance as determined by mail surveys runs 55-95%
 - suggest for those considering registration, that you need enforcement at the outset, otherwise it becomes a hopeless battle.
8. From a biological viewpoint, what mandatory requirements are made of hunters (ie. register moose, submit jaws, check stations, etc.)? What are the penalties for non-compliance?

Questionnaire Summary:

6 jurisdictions indicated mandatory requirements
 8 jurisdictions indicated no mandatory requirements
 some qualifiers.

9. Is subsistence use of moose in your jurisdiction a major problem? If yes, could you elaborate?

7

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Questionnaire Summary:

- 4 agencies indicated it was a problem
 3 agencies indicated it was a limited problem
 5 agencies indicated it was no problem
 the major problem appears to occur in Man., Sask., Alta. and NWT.

Workshop Discussion:

- Man. - our moose population has decreased about 50% in last 5-6 years and sport hunting will terminate if something is not done
 - we attribute a substantial part of the decrease to Treaty Indians
 - all 3 prairie Provinces are governed by the Natural Resource Transfer Agreement signed by Canada and the 3 Provinces in 1929
 - hence this agreement has to be changed before the present subsistence harvest of moose can be affected
 - in Man. a year ago January we started discussions with Treaty Indians and it has been very worthwhile to make them aware of the problem and gain their co-operation
 - we recently met with 3 more reserves and are hopeful that social pressures will reduce the abuse being practiced by a minority
 - one reserve everyone has been pointing to have asked us to put on a general meeting this fall to explain the problem
 - we use a simple model and ask them for data to plug in, to show the effect overharvesting can have
 - Man. will host a Federal-Provincial meeting this fall to discuss this issue - NOTE: this meeting did not occur
 - our government is receiving alot of pressure to act from both the public and the Manitoba Wildlife Federation.

- Ak. - subsistence harvest is not considered to be a major problem
 - it does however prevent moose from increasing near certain villages
 - the Alaskan Native Claims Settlement Act gave a great deal of land to the Natives in 1980
 - the Alaskan National Interest Land Conservation Act, a Federal Act which created alot of parks and refuges included a section which granted rural Alaskans a subsistence priority
 - the state also affords subsistence use a top priority
 - this November an initiative on the ballot if passed would eliminate the States subsistence law.

- Man. - we have set up a system decreed by the Minister to monitor Treaty Indian take which will give us a minimum figure
 - 75% of Treaty Indian kill comes from the cow-calf segment vs 75% bulls for licenced hunters
 - Treaty Indians have the right to hunt and shoot moose even in Manitoba Provincial Parks.

10. In allocation of the moose resource to different user groups, which has priority according to government policy (user groups, licenced residents, non-residents, non-resident aliens, subsistence users [Treaty Indians], others)?

Questionnaire Summary:

2 jurisdictions give priority to subsistence, followed by

8

resident and non-resident users

3 jurisdictions give priority to residents only

2 jurisdictions give priority to residents followed by non-residents

1 jurisdiction gave priority to residents, followed by non-resident Canadians and then aliens

7 of 13 agencies indicate subsistence use takes priority over all other users.

Workshop Discussion:

Ak. - in Alaska, we fought hard to preserve as much subsistence hunting opportunity as possible, especially in Park areas created by Federal government
- a state court decision gives Natives the right to take moose at any time of year for funeral potlaches.

Man. - CWS has recently indicated a volume of game is being transported south across the border to the U.S.
- Natives justify this by saying it is customary to give their neighbours in the U.S. moose meat.

B.C. - Natives have right to shoot moose year round in only one part of Province
- in the balance of Province even though they don't have the legal right its difficult to enforce.

Question: Does B.C. not issue permits to a reserve or family to control subsistence take?

B.C. - yes, based on the good graces of the Director's discretion, it gives us some control.

Question: Do any agencies have good information on the magnitude of poaching?

Man. - have a gut feeling in some areas, but nothing quantitative.

B.C. - our C.O.'s are attempting to define this problem by strictly recording all reported kills and sources
- reported poaching rate est. at 10% of unreported kill and if correct illegal kill may be as high as legal kill.

Ak. - discovery rate 10%, for every 10 poachers only one is caught
- in some areas there is a complete lack of harvest ticket compliance, so its critical to gain the confidence of persons to estimate total mortality
- we find poachers take bulls in summer and cow/calves in winter.

Question: Does Sweden have a poaching problem?

Sweden - no, not overall as there is limited access to hunting grounds
- hunters keep close watch over their grounds and discourage poachers
- in some parts of Northern Sweden, poaching may be preventing populations to develop.

Ont. - the lack of suitable penalties may be a problem
- what can we do as a group?

Man. - our wildlife act was recently changed and now the max. penalty can go up to \$3,000
- however, judges are not applying high fines
- we have recently in the past arranged through the Chief Magistrate a meeting to enable us to indicate to the judges the consequences of infractions.

Ak. - talking to magistrates individually is a waste of time
- max. penalties are rarely levied so we should consider a mandatory minimum
- we just had a mandatory min. applied to want and waste (ie. leaving a moose).

Man. - there appears to be a great deal of discrepancy across N.A.

Ont. - we should be putting emphasis on hunter education - this is really the key to all our discussions on harvest strategies.

B.C. - our compulsory hunter training has paid dividends ie. we have one of the best hunter safety records in N.A.
- every new hunter for past seven years must take a mandatory course. This increased emphasis on hunter education has recently paid dividends in the passing of a new wildlife act which impose mandatory min. penalties including licence suspensions for major infractions as well as substantial sentences for serious infractions ie. pit lamping, etc.

14. For those jurisdictions with selective harvesting strategy, how do you inform/educate your hunters relative to identification of legal animals?

Questionnaire Summary:

8 of 13 agencies do nothing
4 use brochures, 2 seminars, 2 use the media and 1 uses staff contact with hunters.

Workshop Discussion:

Man. - last spring we initiated a seminar system which was such an unqualified success and in August we are having a second moose hunter seminar
- we charge hunters \$20.00 to shoot at a target and run a Friday evening and Saturday session on a variety of subjects
- its so popular that our Minister wants to get directly involved

hunters want it expanded to deer, elk and waterfowl.

Ak. - we include a detailed narrative of our bull antler configuration restrictions in our hunting regulations
- also have an elaborate F & G advisory committee system consisting of members of the public

- 65 such committees are required to meet 4 times per year
- usually the area biologist or regional staff attend
- we also use pamphlets to convey regulation reasoning.

Ont. - we understand B.C. has introduced selective harvesting of spike bulls, could someone elaborate?

B.C. - a pilot study by K. Childs in Prince George
 - consists of : 1) a season for bulls \leq 2 times on one antler (the antler must accompany the licence and carcass)
 2) a season for calf moose < 12 mo. of age
 3) a cow season.
 - the objective is to manipulate harvest ratios and ratios within the population
 - Ken has had very good compliance as he has taken an appreciable amount of time to sell program via seminars, diagrams, rational, photos, antler collections, etc.
 - it took 6 man months in year 1 and now takes 2 man months/year
 - program has been exceedingly well received but takes a lot of time to sell.

Sweden - everyone wishing to hunt must learn how to carry a weapon, demonstrate shooting proficiency, learn the basic biology and management of moose and then pass a test before a licence can be purchased
 - many forest companies require hunters to pass a shooting test each year before being allowed to hunt
 - Swedish hunters spend as much time educating themselves as hunting; they are very enthusiastic.

Man. - the demand to support moose seminars in Man. is such that we have to turn away sponsors.

12. What mortality factors do you consider to be acting on your moose herds (ie. licenced hunting, illegal hunting, diseases, accidents, trains, cars, etc.)?

Questionnaire Summary:

12 of 13 jurisdictions listed	hunting as one
9	" " poaching, disease and accidents
8	" " predators
6	" " subsistence
5	" " weather and environmental conditions
1	" " ticks.

Workshop Discussion:

B.C. - we consider collision mortality a very big problem
 - have had the extreme of 30 moose and 17 caribou killed by one train.

Ak. - deep snow winters result in significant mortality on railroads as moose move down into the river valleys.

CWS. - highway and railroad mortality can be serious in some National Parks
 - Damus and Smith of Parks Canada, Ottawa recently documented collision mortality in National Parks.

Sweden - our 1980 vehicle kill of moose was approximately 6,600
 - somewhat higher in 1981.

13. Do you have non-resident hunting? What restrictions apply?

Questionnaire Summary:

3 agencies do not offer a non-resident season (N.B., N.S., Minn.)
 11 of 14 agencies offer non-resident hunting
 Ont. require 2 or 3 hunters to hunt together during a 2 week season
 Nfld., Yk. require all non-residents to use outfitter facilities
 Me. issues up to 100 permits to out of state (U.S.) non-residents
 Ak., Sask., Alta., N.W.T. and B.C. requires non-residents to employ a guide
 Man. issues 600 licences, 200 of which are for Canadian residents
 hunters are required to go through an outfitter for a min. 4 day pkg.
 P.Q. non-residents of Canada \$200 and of P.Q. \$125 can hunt any where but most go to an outfitter.

Workshop Discussion:

Ak. - all U.S. aliens must have a guide, but those U.S. residents outside Alaska do not require one.

Question: to Sask. - why do you still allow non-residents hunting given the reduced moose population?

Answer: Outfitter pressure won't let us close.

Ont. - since 1979 we have reduced non-resident participation significantly by requiring two hunters to share one moose and delaying season opening
 - we are attempting to develop a quota hunt that limits the legal take by Wildlife Management Unit
 - with this strategy, we can once again move to a one for one licence and earlier seasons
 - outfitters appear to support the quota approach.

Man. - we restrict non-residents to the far north
 - have set up areas where one outfitter is non-impacting one another and where there is little competition with resident hunters.

Sask. - we issue a max. of 425 licences, closely controlled by zone
 - 80 % are used - given to Northern Outfitters Association who distribute to individual outfitters on a first come, first serve basis.

14. Other problems, relevant information, etc. in moose harvesting (ie. poaching) that may be of interest.

Workshop Discussion:

Man. - hunter education and subsistence - already discussed.

Alta. - tick problem.

Sask. - forest access roads - cause a decrease in moose as well as hunting by Treaty Indians and poaching.

Me. - Smoosa (Save Maines Only Official State Animal) is a group lobbying to have our season closed.

1982 Moose Conference Harvest Workshop Questionnaire - (Province/Territory/State?)

1. How many moose hunters hunted in your province/territory/state in 1981?
2. What type of hunting strategy do you employ in your jurisdiction (i.e. any sex/age, selective sex age, sharing moose, draws, season manipulation, etc.)?
3. How do you estimate the total number of moose in your jurisdiction or game management areas?
4. How do you arrive at the number of moose to be harvested and how do you translate this to licences?
5. What percentage of the prehunt population do you consider to be available for hunting purposes?
6. In setting quotas, what assumptions do you make? What are the key elements employed in the development of quotas?
7. How do you assess the licenced hunter harvest (questionnaire, etc.)?
8. From a biological viewpoint, what mandatory requirements are made of hunters (i.e. register moose, submit jaws, check stations, etc.)? What are the penalties for non-compliance?
9. Is subsistence use of moose in your jurisdiction a major problem? If yes, could you elaborate?
10. In allocation of the moose resource to different user groups, which has priority according to government policy? (User groups - licenced resident, non-resident, non-resident alien, subsistence users (Treaty Indians), others (?)).
11. With limited supplies of moose (and assuming resident use takes priority over non-residents) will the use by one resident user group be curtailed at the expense of another, i.e. subsistence vs licenced or will the harvestable surplus be allocated among both groups? How do you handle allocation when no surplus exists?
12. What mortality factors do you consider to be acting on your moose herds, i.e. licenced hunting, illegal hunting, diseases, accidents, trains, cars, etc.)?
13. Do you have non-resident hunting? What restrictions apply?
14. For those jurisdictions with selective harvesting strategy, how do you inform/educate your hunters relative to identification of legal animals?
15. Other problems, relevant information, etc. in moose harvesting (i.e. poaching) that may be of interest. Elaborate.

1982 MOOSE CONFERENCE HUNTERS' WORKSHOP

JURISDICTION	# HUNTERS (1981)	STRATEGY	POPULATION ESTIMATES	MOOSE HARVEST LICENCES	PAST/PRESENT POPULATION AVAIL. FOR HUNTING	ASSUMPTIONS
Alaska	24,021	Draw Antler restriction Restricted sex Season manipulation	Aerial	No specifics.	5 - 101 with 151 in high density areas	Estimates of population size and recruitment are reasonably accurate.
Yukon	1,991	Selective sex/age Season manipulation	Aerial	Licences issued are 3x allowable harvest.		Sex/age estimates of adult survival, calf survival, female productivity are accurate. Assume 50 bulls/100 cows results in maximum productivity.
Northwest Territories		Any sex/age	Aerial			
British Columbia	66,027	Remote areas - bull only with short antler seasons. Other areas - various methods (sex/age/antler restrictions; seasons).	Aerial	Estimate desired harvest. Sell licences based on anticipated success.	113 bulls 233 calves	Biological data gathered is accurate.
Alberta	67,769	Sex restriction Season manipulation	Aerial	General areas - no concern. Estimate allowable harvest and sell licences based on known success.	201 with healthy herd.	Recruitment rates and mortality are accurate. Anticipated hunter success is accurate.
Saskatchewan	13,858	Draw - any sex/age Regular - bull/calf	Aerial	Determine population size. Age/sex surveys. Winter mortality. Productivity based on this and anticipated success allocate licences.	10 - 151	Data gathered is reliable. Mortality factors consistent with the past.
Manitoba	10,000	Bull only - general Winter any sex/age on draw.	Aerial	Season length, age/sex surveys, average success and winter weather in draw areas. General areas - season length.	101	Harvest will be close to average. Biological data reasonably accurate.
Ontario	72,200	2 tags/moose	Aerial	Restrict harvest by seasons.	101	
New Brunswick	4,900	Draw	Aerial age/sex data.			
Nova Scotia	440	Draw - any age/sex	Aerial & pellet counts.	Population data and past success.	Declining population - 10% Other - 20%	Desired harvest Quality hunting Recreational opportunity
Newfoundland	10,970	Licence type restricts hunter to either sex or male only.	Aerial	A specific formula.	10%	Estimate poaching level and adjust licence quota.
Minnesota	2,531	Draw - any moose 4 hunters/moose	Aerial	101 of herd + 95% party success		95% success Harvest more bulls Distribution in fall similar to winter.
Maine	nil	Draw - any sex/age	Aerial	By law only 1,000 licences	101 but by law only 51	Zones to distribute hunters and assume moose in zone.
Quebec	115,000	Try to harvest males and females equally. Promote calf harvest.	Aerial	Restrict seasons.	15 - 201 in some areas.	Adjust regulations annually following surveys.

1982 MOOSE CONFERENCE HUNTERS' WORKSHOP

JURISDICTION	MANDATORY REQUIREMENTS	RESIDENTS ONLY? (YES/NO)	WEEK-ENDS PRIORITY	VEGETATION FACTORS	NON-RESIDENT HUNTING	SPECIAL HUNTER EDUCATION PROGRAMS
Alaska	Generally none	No	Subsistence		Yes - guides mandatory for aliens.	Regulations
Yukon	Nil	Possibly in some areas.	Subsistence	Hunting	Yes - with outfitter.	
Northwest Territories	Nil	Yes	Subsistence	Hunting Predation	Yes - licensed guide.	
British Columbia	On draws, must submit tooth and antler from females.	Yes	Residents	Hunting Predation Disease Weather	Yes - guides mandatory.	Seminar
Alberta	Nil	Yes	Subsistence	Predation Hunting Ticks	Yes - licensed guide required.	
Saskatchewan	Nil	Yes	Subsistence	Hunting Weather Poaching Predators Disease	Yes - limited by area and to licensed operator.	Brochure
Manitoba	Nil	Yes	Subsistence	Hunting Predation Weather Disease	Yes - restricted to specific areas. Must purchase minimum 4 day package at lodge/outfitter.	Seminar Brochure
Ontario	Registration in two areas	In local areas.	Residents with obligation to subsistence.	Hunting Poaching Predation	Yes - short seasons.	
New Brunswick	Mandatory registration	No	Licensed resident.	Hunting Poaching Disease Vehicles	No	
Nova Scotia	Permit for possession.	No	Licensed resident.	Hunting Poaching Disease	No	
Newfoundland	Must submit questionnaire and jaw bone.	No	Licensed resident.	Hunting Poaching Vehicles	Yes - must hunt with licensed outfitter.	Brochures
Minnesota	Nil	Yes	Licensed resident.	Hunting Disease Vehicles Predation	No	Seminar
Maine	Mandatory registration	No	Licensed resident.	Poaching Vehicles Disease Weather	Yes - 100 permits.	
Quebec	Nil	No	Residents	Hunting Predation Poaching Disease	Yes	