Thirty-seventh
Federal-Provincial
Wildlife Conference

TRANSACTIONS 1973

Ottawa, Ontario
July 9 to 12

Environment Canada
Wildlife Service

Environnement Canada
Service de la Faune

Transactions of the
Thirty-seventh Federal-Provincial Wildlife Conference
held in Ottawa, Ontario
July 9 to 12
1973

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Honourable Jack Davis, P.C., M.P.
Minister of the Environment

Canadian Wildlife Service

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Summary of the 37th Federal-Provincial Wildlife Conference

Conference opening

Dr. John Tener, conference chairman, introduced Robert F. Shaw, deputy minister of environment Canada.

Mr. Shaw officially welcomed the delegates. He remarked on the changing nature of the conference, and on the greater involvement in it at both the provincial and federal levels of government and in the private sector. This, he said, reflected the response of wildlife people to changing demands on, and a better understanding of, the wildlife resources. He emphasized the necessity of avoiding tunnel vision and the danger of managing our wildlife with our emotions rather than with thoughtfulness.

He cited examples of the deterioration of our environment and asked the question: "What are we doing to wildlife, and to man?" He stated his conviction that we cannot stop development in the face of the needs of exploding populations; that our responsibilities are not confined to our own boundaries; that we must drop our "traditional loyalties of clan, tribe, city, province and nation or alliance", and that we must look to the ultimate survival of the species man.

1. Recommendations of the 36th conference

Doug Pollock, conference secretary, reported that recommendations 1—6, 9, 11, and 13 had been actioned and completed as far as possible, and that the statistics panel scheduled for that afternoon would probably answer any questions that might arise from recommendations 7 and 8, while Dr. Hatter's and Mr. Loughrey's presentations on Thursday morning would cover recommendations 10 and 12 respectively. There was no discussion.

2. Appointment of recommendations committee

Dr. Tener appointed the following to the recommendations committee: Merrill Prime (chairman); George Couldwell; Bill Sinclair; and John Cameron (secretary).

3. Report of the Canadian Wildlife Service, 1973

Dr. Tener's report to the conference on events during the past year had been pre-circulated and was, therefore, not read. Because events had bypassed his report, he made reference to the fact that the Canada Wildlife Act had received the unanimous support and approval of the standing committee on fisheries and forestry of the House of Commons and had been referred back for third reading.

He was able to update, as well, the section of his report dealing with the epizootic of duck virus enteritis on the Lake Andes national wildlife refuge, South Dakota, U.S.A., last winter. He had reported that in the first two weeks of May, a die-off involving several hundred Old Squaw ducks occurred at Long Point, Ontario, and that a number of those birds were examined at our pathology laboratory and at the Animal Diseases Research Institute.

He was now able to inform delegates that the examination conducted at the institute had failed to reveal any evidence that duck virus enteritis was involved in the deaths of the ducks at Long Point, and that those deaths were tentatively being attributed to a parasitic infection, more specifically to the fluke *Sphaeridiotreme globulus* (Rudolphi). With regards to the die-off in early May in a captive flock of Wood Ducks near Winnipeg, the statement that "analyses of specimens did not show the presence of DVE" was somewhat premature as we still had no official report on the significance of results obtained.

Discussion

Dr. Moisan inquired about the general conclusion of the five-year study on reindeer herd management in the Mackenzie Delta. He was informed that we were working towards a solution to the problem but that the report is the property of the department of Indian and northern affairs.

4. Report of the Canadian Wildlife Federation

Dick Passmore's report to the conference had been pre-circulated and was, therefore, not read. He did, however, thank the provinces and territories and the Canadian Wildlife Service for their tremendous level of co-operation in making the Man and resources National Wildlife Week program for 1973 the biggest and best yet. He expressed the hope that this new level of achievement could be maintained and improved upon. He asked delegates to consider postponing yet another time the theme Preservation of wetland habitat in favour of the theme Man and wildlife for the 1974 National Wildlife Week program. No decision was reached, but a vote taken subsequent to the conference resulted in seven for Preservation of wetland habitat and six for Man and wildlife.

In commenting on Mr. Passmore's planned re-

tirement from the Canadian Wildlife Federation at the end of July, Dr. Tener expressed his appreciation and that of the entire conference for his contributions to wildlife and environmental interests throughout the country.

5. Report of Ducks Unlimited (Canada)

Stew Morrison tabled his report and highlighted two important areas. First his organization has presented a five-year program to the United States organization which would involve the raising of approximately $20,000,000—primarily to obtain additional acreage for ducks, but also to manage more intensively some of their older projects. Second, that in order to have programs available for their expanded budget, they were starting a special projects team which would be responsible for planning.

Discussion

Mr. Couldwell acknowledged with thanks the assistance of Ducks Unlimited on the Saskatchewan wetlands committee.

6. Waterfowl populations—1973

Dr. F. G. Cooch presented information collected in cooperation with the provinces, Ducks Unlimited, the Wildlife Management Institute, the Bureau of Sport Fisheries and Wildlife, and the Canadian Wildlife Service. There was no discussion.

7. Reports from migratory bird technical committees

John Bain requested that the report of the eastern Canada migratory bird technical committee be given in closed session. Harold Weaver presented the report of the western Canada waterfowl technical group and the provincial technical committees. There was no discussion.

8. Report of the activities of the U.S. Fish and Wildlife Service

Dr. John Rogers reported to the conference the major events of the past year in the U.S. Bureau of Sport Fisheries and Wildlife. There was no discussion.

9. Convention on international trade in endangered species of wild fauna and flora

Dr. D. A. Munro led a discussion on the convention on international trade in endangered species of wild fauna and flora. His introductory remarks, as well as those of Dr. M. L. Prebble, department of the environment; W. P. Molson, department of industry, trade and commerce; and Dr. N. S. Novakowski, Canadian Wildlife Service, are included in these transactions.

10. Panel—Wildlife statistics and socio-economics

Denis Benson led a panel of: J. P. Secter (CWS); R. A. Chadwick (Statistics Canada); A. R. Lucas (A. R. Thompson Research Ltd); and D. H. Schweitzer (Institute for Northern Studies).

Mr. Benson's paper reported on the action taken pursuant to recommendation 7 (a) of the 36th Federal-Provincial Wildlife Conference: "That the conference endorse the compilation of (a) national wildlife-based outdoor recreation statistics . . .".

A proposal, including a uniform table format, had been prepared, in cooperation with Statistics Canada and a number of provincial wildlife agencies, for a cooperative program of collection, compilation and publication of wildlife statistics. The CWS now required from the provinces and territories either an affirmation that the proposed program and table format were suitable or that further modifications should be made. The consensus was in favour of proceeding with the program as outlined but that the studies should be expanded to encompass wildlife-based commercial statistics and the kill-of-wildlife-by subsistence hunters statistics as had been recommended in parts (b) and (c) of the same recommendation 7. The matter was left to the recommendations committee.

Attention was then turned to the report by A. R. Thompson and A. R. Lucas on "Landowner—Wildlife relationships, a preliminary legal study", which attempted to identify the legal framework that relates to the whole issue of landowner—wildlife relationships.

Having done so, they hope to move forward into the second research stage which would involve studies of: the near urban area, in order to identify the legal position of municipalities with regard to wildlife regulation and management; the constitutional question of ownership of wildlife and the questions of trespass and access control; comparative work, particularly with some of the European jurisdictions like Germany and some of the states of the United States; and case studies (e.g. private, commercial hunting operations: the statutory rules and regulations to which they are subject, etc.). The delegates reacted favourably to the work that had been done and encouraged its continuation.

Jon Secter summarized his paper on "Canadian Wildlife Service research into the social and economic aspects of wildlife management in western Canada". Mr. Schweitzer then presented his on "Socio-economics in migratory bird management". There were a few general questions and a brief discussion of the types of information being produced by the study.

11. Provincial forum

George Kerr, chairman of the provincial forum, has indicated that a summary of the discussions would be prepared and distributed at a later date. The one paper presented during the forum, "What is required in the Canada fur industry?", by Dave Gimmer, is included in these Transactions.

12. Committee report on examination of objectives of Federal-Provincial Wildlife Conference

The committee tabled its report on the action taken on recommendation 12 from the 36th conference. Discussion led to consensus in the following areas:

1. that objectives 1-5 of the conference, as outlined in the report, were relevant and valid;
2. that the conference should not support the expansion of its role to a national scientific forum;
3. that the conference would consider supporting outside action to establish a national scientific forum.
4. that the chairmanship of the conference should rotate among the provincial and federal directors of Wildlife;
5. that the secretariat of the conference should remain with the CWS.
6. that more technical committees could profitably be established. It was noted that those committees need not necessarily meet in conjunction with the Federal-Provincial Wildlife Conference, but rather at different times and locations throughout the year; and
7. that a formal program committee should be established to take responsibility for the conference content and procedures, its format, timing, size and membership.

A consensus was not reached about objective 6 of the conference: its role in formulating and passing recommendations. The point of contention was primarily the type of recommendations that should be made and whether they should be allowed to touch on policy matters as they have in the past.

13. Ministry of transport's anti-pollution activities in the marine field

Captain F. J. Bullock presented his report to the conference. There was no discussion.

14. Report on new federal lands program

R. J. McCormack presented his report to the conference. Because the administration of land in Canada, except for federal Crown land, comes under provincial jurisdiction, there was some question as to the role of the federal government in the area of land management. That role was clarified as being one of data gathering pertaining to the land resource as a whole.

15. Waterfowl management—2,000 A.D.

Because of the shortage of time, Mr. Boyd's paper was not presented. It is included in these Transactions.

16. Discussion on consumptive use of wildlife

Mr. Passmore began by providing background information to delegates on the purpose of the discussion. He referred to the committee he had chaired which had studied the whole question of anti-hunting sentiment and the ever-increasing closure of lands to hunting by private posting and by municipal bylaw prohibiting discharge of firearms. He referred to the recommendations that that committee had made to the 36th Federal-Provincial Wildlife Conference and asked delegates if they had implemented any of those recommendations and if not, were they planning to do so. Unfortunately, time restrictions necessitated the ending of the session before all provinces had had an opportunity to comment.

Dr. Hatter described a study they have contracted for with a Vancouver firm to make recommendations for a new system of hunting on the lower mainland. He pointed out that there was very little hunting opportunity left on those low agricultural lands and that the hunter would have to be prepared to make more sacrifices for the privilege of hunting. He recommended the book Meditations on hunting by Jose Ortega Y. Gassett. He mentioned also that they were stepping up their hunter training program and making it compulsory for first-time licence applicants. The B.C. information program is being expanded as well.

Alberta is developing an information and education program to encourage public involvement and cooperation in resource management. Their

first pilot project, the Civil wildlife patrol program, does not appear to be feasible. Their new "Buck-for-wildlife" program, which established a levy (a $1.00 contribution) on angling and hunting licences, is going well, however, and they now want to set up opportunities for non-consumptive users to contribute to that same program.

Both British Columbia and Alberta have particular regulation problems because of their discreet population pockets. British Columbia regulations next year will see an increase in the number of management units to enable them to go more effectively into limited entry systems. Alberta now has 180 management units which have been broken down into 16 management zones. They have set up limited entry systems on a number of species.

Anti-hunting sentiment is Saskatchewan is directed mainly towards non-resident hunters. As a result, Saskatchewan has placed many restrictions on those hunters. They have the usual problems of reduced habitat and landowner concern about hunter behaviour. They hope to have a hunter training program by 1975 and like Alberta, they have instituted certain vehicle control regulations to curtail some of the abusive practices of all-terrain vehicles.

Manitoba has instituted a five-year, $1,000,000 land access program, geared towards more intensively-used lands, to purchase land for hunting and other outdoor recreational pursuits. They have produced both a small landowners' manual and, because of their fear of the alienation of consumptive and non-consumptive users—one from the other, a publication called A sampling of Manitoba nature. Their efforts to encourage sportsmen's organizations to police their fellow hunter are not proving successful.

Ontario briefly outlined their expanded efforts to increase emphasis on certain aspects of wildlife management. The N.W.T. stressed the necessity of making it clear to the public that although hunting is a very important management tool, we are managing wildlife for all Canadians and not primarily for the hunter. It was pointed out that we cannot legislate attitudes towards hunting, and that the sportsmen's organizations had an important responsibility in that area.

17. Report on lead shot substitute research program

Mr. Perret was not able to give his slide presentation because of the shortage of time. The information he intended giving is attached as appendix 1 to these Transactions.

18. Report of administrative committee for polar bear research and management; report of administrative committee for caribou preservation; report of the Canada fur council;

Because of the shortage of time these reports could not be presented. They were, however, tabled and included in these Transactions.

19. Federal-provincial co-ordination of information programs

Dr. Hatter summarized his report. Because of the shortage of time, there was no discussion.

20. Panel—UN Stockholm conference: Implications for Canadian programs on wildlife and ecosystems

J. A. Keith (CWS) and Dr. D. A. Munro, director general, liaison and coordination directorate, DOE, led a discussion on the implications of the UN Stockholm conference for Canadian programs on wildlife and ecosystems.

Mr. Keith led off with a brief overview of the meaning of the Stockholm conference: he termed it as "a coming of age of the environmentalist movement", a major event at which the environment had become a world-scale political and diplomatic issue. The great range of subjects discussed, all under the umbrella of the word "environment", pointed out the integral complexity of current environmentalism of which wildlife is only one part. The conference provided the first major reassessment of the set of values implicit in the 19th century concept of progress through industrialization.

The consequences of what happened at Stockholm, on both the national and international levels, were set forth by Dr. Munro:

International

The UN General Assembly, at its meeting in December, passed two important recommendations from Stockholm:

1. for the establishment of a fund for international environmental work. This is a voluntary fund, standing now at about $100 million, for a five-year period, made up of contributions from many countries (Canada has pledged $5—7.5 million); and
2. for the establishment of the UN Environmental Program (UNEP) governing council. The

council's main tasks are: to provide guidelines for and coordinate the environmental programs of the total UN Environmental Program involving such agencies as FAO, WHO, WMO, UNESCO, etc.; and to expend the fund mentioned above as a means of stimulating necessary extensions of environmental programs to be carried out by those special agencies. The headquarters and secretariat of the UNEP governing council will be in Nairobi. The Council is made up of 58 countries (Canada among them); it met in Geneva in June. Some general accomplishments of that meeting were:

1. the provision of guidelines for the development of more detailed plans for environmental programs;
2. the approval of the administrative rules for the use of the environmental fund which provided some flexibility in expenditure to the executive director;
3. the provision of authority to the UN environmental secretariat to administer the convention on international trade in endangered species of wild fauna and flora; and
4. the approval of a Canadian proposal to hold a conference exposition on human settlements in Vancouver in 1976.

One major factor underlying everything that the UN does, and which played a tremendous part in the proceedings leading to the above decisions, is the disparity between and differing priorities of the developed and the developing nations.

Many Stockholm recommendations were to be implemented within UNESCO's man and biosphere program. That program seeks through the integration of techniques available in the physical, biological, and social sciences, to contribute further information toward the relationship of man and his environment and to find solutions to the problems therein. This will have the effect of both enlarging the MAB program and tying it closely to the UN Environmental Program. The financial implications for Canadian federal and provincial agencies are still not settled.

National

1. Many of the recommendations passed at Stockholm can only be implemented by countries individually within their own boundaries. Some of those recommendations are by no means novel but the support given them by the international community as a whole will be helpful to countries wishing to begin or extend environmental programs.
2. In Canada, we are in the process of developing a "National action plan", a statement of policy with respect of environmental activities which would guide environmental agencies, and which hopefully will reflect the views of the federal and provincial governments of Canada. It is hoped that the first working draft will be ready by September.

Part of the subsequent discussion revolved around the lead times given provincial governments for their responses to the many recommendations arising from Stockholm, and part of it to the need for finding better coordinating mechanisms within governments so that all agencies would have an opportunity to comment on the recommendations which had implications for them.

Those recommendations, with almost staggering possibilities, led to a discussion as to if, and how, a national action plan could lead to a rational and orderly response at the practical level. Mention of the Canadian commitment to increase aid to developing countries—having in mind the environmental programs of those countries—led to a general discussion of the extent of aid and the priority that aid should have in relation to domestic needs.

21. Recommendations committee report

The recommendations were read and adopted unanimously.

22. Choice of theme for 1974 conference

People and wildlife was the theme chosen for the 1974 conference.

23. Election of chairman for 1974 conference

Dr. Jim Hatter, director, fish and wildlife branch, B.C. department of recreation and conservation, was elected as chairman for the 1974 conference.

Report on action taken on recommendations of the 36th Federal-Provincial Wildlife Conference

D. K. Pollock

Recommendation 1

That the conference express its appreciation to the government of Nova Scotia and especially to the Honourable Benoit Comeau, minister of lands and forests, and Merrill Prime, director of the Wildlife Branch and their staff for the excellent arrangements and hospitality extended to the delegates of the 36th Federal-Provincial Wildlife Conference.

Action

Letters of appreciation were sent to the Honourable Dr. M. E. DeLory (Mr. Comeau's successor) and Merrill Prime.

Recommendation 2

That the conference commend the formation of the western Canada wildlife advisory committee and urge that similar action be considered for eastern Canada to act as a formal intergovernmental co-ordinating vehicle.

Action

Letters were sent to the provinces of Ontario, Quebec, New Brunswick, Prince Edward Island, Nova Scotia and Newfoundland suggesting the establishment of an eastern wildlife advisory committee and outlining suggested terms of reference. The suggestion was also made that a sub-committee be established, composed of the directors of Wildlife for each province and the eastern regional director of the Canadian Wildlife Service, which would serve as a scientific advisory committee and implementation arm of the main committee.

The formation of an eastern wildlife advisory committee is not imminent, however. Before initiating a committee for the east, we wish to examine and review the functions and problems encountered by the western wildlife advisory committee. It appears that there is not as clear a focus of problems in the east as there was for the west. Also, the passage of the Canada Wildlife Act will set the real framework for a productive eastern committee. No one yet knows when that will be. We believe it to be important, in the absence of a focus of problems and in the presence of some reluctance on the part of some provinces, to defer establishment until the Act has been passed.

Recommendation 3

That the theme of National Wildlife Week in 1973 be Man and resources to lend support to Man and resources year. It is further recommended that the theme Preservation of wetland habitat be deferred to 1974.

Action

A letter expressing the wishes of the conference was sent to R. C. Passmore, executive director of the Canadian Wildlife Federation. The Man and resources theme was adopted for the 1973 National Wildlife Week. It was a very successful week. Mr. Passmore will be reporting in more detail. He will also be proposing the themes for 1974 and 1975.

Recommendation 4

That the conference commend the action of the government of Canada for financially supporting public organizations dedicated to soundly oriented wildlife education activities and that high priority be placed on increasing present financial support to such organizations.

Action

Last year the department of the environment re-examined its policy of awarding new grants and increases to continuing grants and placed a moratorium on them. The policy will be re-examined within the year.

Recommendation 5

That the conference commend Ducks Unlimited (Canada) for its expanded efforts throughout many areas of Canada.

Action

A letter of commendation was sent by the chairman of the Federal-Provincial Wildlife Conference to D. S. Morrison, general manager of Ducks Unlimited (Canada).

Recommendation 6

The conference recommends that in provinces with hunting licence quotas or permit draws for the harvest of any wildlife species that there be no discrimination against employees of wildlife management agencies in those provinces.

Action

Letters giving official notification of the recommendation were sent by the chairman of the Federal-Provincial Wildlife Conference to all provincial and territorial game directors.

Recommendation 7

That the conference endorse the compilation of national wildlife-based outdoor recreation sta-

tistics; Wildlife-based commercial statistics; the-kill-of-wildlife-by-subsistence-hunters statistics, and recommend that the Canadian Wildlife Service co-ordinate the compilation of these data as a basis for management research and Statistics Canada.

Action

A proposal for a cooperative program of collection, compilation and publication of wildlife statistics was developed with a number of provincial wildlife agencies. The joint proposal was pre-circulated to delegates, and was open for discussion at the panel on wildlife statistics and socio-economics. That proposal arose from the first part of the resolution.

The service has a limited program aimed at developing economic assessments of wildlife resources. It is in line with the second part of the recommendation. However, the service would appreciate the guidance of the conference in developing a mutually agreed upon definition of "wildlife-based commercial statistics" if that part of the recommendation is to be renewed at this conference.

The third part concerned statistics on the kill of wildlife by subsistence hunters. We admit our inability to develop practical methods for obtaining such statistics for migratory birds. Further study of the problem by the federal and provincial governments is required.

Recommendation 8

That the Canadian Wildlife Service be requested to continue and expand its involvement in socio-economic wildlife studies in Canada.

Action

The Canadian Wildlife Service has expanded its program of socio-economic studies in Canada. Reports on several of them have been pre-circulated to delegates and were open to discussion at the panel on wildlife statistics and socio-economics.

Recommendation 9

Whereas the conference recognizes the inadequacy of wildlife education and information services in various management agencies and;

Whereas such programs are essential to hunter training programs, non-consumptive user information and the explanation of complex management programs to the general public as well as to measure public wants and needs;

It is therefore recommended that all provincial governments and government of Canada wildlife agencies place high priority on the development of education and information services and assure there be adequate staffing of both professional resource managers and professional information people.

Action

Letters giving official notification of the recommendation were sent by the chairman of the Federal-Provincial Wildlife Conference to all provincial and territorial game directors. We in the Wildlife Service have argued for more money and man-years for 1974-75, especially to provide capability in our regions.

Recommendation 10

Whereas the activities of the Canadian Wildlife Service and provincial wildlife agencies experience considerable overlap of interest; and, whereas there is often a lack of familiarity with each other's program; it is recommended that a formalized co-ordination of public information and promotion programs be developed.

Action

Letters were sent to all provincial and territorial game directors asking that they provide us with up-to-date lists and forecasts of publications and films. The letters also proposed that a committee of three be formed to co-ordinate information activities. Dr. James Hatter, its chairman, reported later in the conference.

Recommendation 11

That the conference commend the effort of the Northwest Territories government to manage muskox on Banks Island and that further efforts be made to control herd size through an immediate herd reduction and that a range investigation be conducted upon which to base future management objectives.

Action

The Canadian Wildlife Service, together with the Northwest Territories game management service, prepared an outline of a range study of muskoxen to be conducted on Banks Island. The study is well in hand.

Recommendation 12

That a committee be established to examine the need for, the feasibility of, and the logistics for a national symposium, conference or gathering focused on wildlife planning both in theory and application.

Action

Action on this recommendation was postponed pending the results of the committee formed to examine the future role of the Federal-Provincial Wildlife Conference. A. G. Loughrey, chairman of that committee, reported in more detail later in the conference.

Recommendation 13

That an *ad hoc* committee be formed to consolidate the views of the provinces, territories and the Canadian Wildlife Service to explore with the Canadian ministry of transport matters of aircraft control and jurisdiction in respect to hunting, fishing, and wildlife harassment and that this committee report to the 1973 conference.

Action

Before convening a committee, we decided to inform the provincial and territorial governments about the responsibilities of the Canadian transport commission and the ministry of transport. That information was sent on November 27, 1972. At the same time, those governments were asked if they wished us to proceed with the formation of the committee. One province asked for additional information which was supplied, with copies to the other provinces and the territories. The committee was not convened because of the lack of interest shown.

Report of the Canadian Wildlife Service, 1973

J. S. Tener

For several years I have been reporting the impending approval of the organization of the department of the environment. That approval finally arrived last January first. At the time of writing (May 29), the submission for a new organizational structure of the CWS was before senior management of the department.

By now you will know that the Canada Wildlife Act received second reading in the House of Commons and was referred to the standing committee on fisheries and forestry on May 9. By the time of this conference I should be able to report subsequent events.

The revised Game Export Act has been reviewed by our legal officers and the latest draft will be presented to you during closed session for discussion and any amendments required.

At our last conference I reported the establishment of the western wildlife advisory committee and our thought of creating a similar committee for the eastern provinces. Some of the provinces in eastern Canada were favourably disposed to the idea but others were doubtful of its value. Further action to establish the committee, therefore, has been deferred until the western committee has been functioning for a while longer.

We believe that that committee has been extremely useful and we look forward to, among other things, the establishment of an agreed federal-provincial policy and program of waterfowl management in western Canada through its offices.

The activities of the CWS continue in growth and complexity.

The major redesign of the migratory bird hunting permit and associated surveys to which I referred in Halifax has been implemented; not without serious teething pains however.

We are now able to sample hunters' purchasing permits for the first time. Other adjustments included placing hunters in zones of kill and not zone of purchase to derive improved estimates of kill in particular areas. A major redesign of the analyses of the combined harvest and species com-

position surveys was initiated and adjustments are now also possibly related to temporal distribution of responses.

This has had the effect of reducing the estimate of kill of early migrating species and placing more weight on late migrants such as diving ducks. These and several dozen analyses of characteristics of the hunting universe and their kill are underway.

At least one more year of development is required until the permit and survey system is almost totally automated. The intent is to have data of management significance available no later than April 15 of each year.

The breeding bird and nest record schemes are in the process of being transferred from cards to magnetic tape. Approximately 10 per cent of the records have been coded and punched and the retrieval system has been run against that record. By 1975 or 1976 widely scattered data from all parts of Canada will become available at a single centre in Ottawa.

The North American Bird Banding Manual has been printed and distributed to all North American banders. A French version should be available in 1973/74. Because of its loose-leaf format, revisions can be made and this will be done on a biennial basis. Major steps have been taken to provide banding data in a biologist-ready format. All Canadian requests are processed in Ottawa with a turn around time of about two weeks depending on other demands for programmer time. Progress in providing service has not been as fast as we had planned, but the end of the road is now in sight and I anticipate being able to make a more cheerful report in 1974.

New work on migratory bird management problems in western Canada includes studies to work out the best sea-bird inventory methods for the Pacific coast, the effects of ingestion of hydrocarbon components on sea-birds, pilot studies to determine the preferences of the public for some 80 migratory bird-based recreational pursuits in Saskatchewan, and analysis of bird-aircraft collisions around the airport at Vancouver.

A new wing on the Prairie Migratory Bird Research Centre will shortly be completed providing nearly 10,000 sq. ft. of additional working area for the service of Saskatoon. In addition some 15,000 sq. ft. of pens and building have been constructed at Wainwright, Alberta, with the approval of Alberta Lands and Forests, for the breeding of endangered raptors.

An office in Regina has been established as a result of the signing of agreements with the prairie provinces on the control of losses to farmers from ducks eating grain. It is staffed by a federal coordinator who works with counterparts in provincial governments. Under the three agreements, one million dollars is made available annually to the three provinces.

Our migratory bird program in eastern Canada has been active as well.

The study of seabirds at sea in the Atlantic and eastern arctic waters—which for three years has been assessing the relationship of the presence or absence of birds up to 300 miles offshore to a variety of oceanographic factors—was augmented by new studies of breeding populations from the Gulf of St. Lawrence to Devon Island. The joint studies will vastly improve our ability to assess potential damage to Atlantic seabirds from industrial hazards and should provide a useful index of environmental quality in the coastal zone.

Critical assessments are being made of bird populations which may be affected by the proposed James Bay hydro project in Quebec. Baseline data are being collected on waterfowl populations migrating through or breeding in the area and on habitat which may be altered by the hydro project.

Lesser snow goose populations are being measured by vertical photography on their nesting grounds. The first attempt in 1972 was largely ineffective because of a late, cold spring in the arctic islands. However, enough good photography was accomplished to enable staff to determine that the method can be used successfully. (By the time of the conference we should have word on the 1973 survey.)

For the first time in its history, the CWS operated a controlled hunt in 1972. It was carried out on Cap Tourmente national wildlife area in cooperation with the Quebec government. The hunt was deemed necessary to ensure that the birds were not allowed to congregate entirely on the N.W.A. Such a concentration could have disastrous results on the *Scirpus* beds and would also antagonize hunters elsewhere in the vicinity, particularly on the south shore of the St. Lawrence where several outfitters operate. The hunt was limited to 600 Canadians with a potential maximum bag of 6,000 snow geese. In the event only 448 hunters were accommodated before the birds set out for the south. Those hunters took only 538 geese and 378 ducks. The low success rate was

largely attributable to the virtual absence of young birds in 1972. A similar hunt will take place in 1973.

Good progress was made on our land acquisition program during the past year. During the 1972/73 fiscal year we spent $3,004,206 on the purchase of 2,288 acres. To the end of last March about 38,569 acres had been acquired at an approximate cost of $7,103,085.

Some details may be helpful. Substantial pieces of wildlife habitat, for example, were acquired in B.C. The Reifel Farms and Refuge total 668 acres adjoining a provincial Crown foreshore reserve of 764 acres, making a total unit of over 1,400 acres that we are confident can be managed jointly for wildlife-based education and interpretation. This is a major accomplishment as the area is minutes away from a great city.

We are in the process of assembling wildlife lands in the Vaseux Lake area of central B.C., assisted in particular by the Okanagan-Similkameen Parks Association. Some 1,700 acres are currently being brought under control and, with goodwill on the part of local landowners, we hope eventually to operate a block of perhaps 4,000 acres, for the preservation of rare species of wildlife of the Upper Sonoran zone and for their enjoyment by the public. The B.C. fish and wildlife branch is aware of our planning and we expect to work with provincial staff in the management of the area.

Migratory bird habitat has been acquired in Nova Scotia, New Brunswick, Quebec and Ontario. In each province an agreement has been concluded which provides for the establishment of a joint federal-provincial management committee to develop and oversee the implementation of a management plan for each national wildlife area. Eastern region now has nine N.W.A.'s comprising 15,000 acres and another nine (24,000 acres) in process of being purchased. Several more are awaiting submission to treasury board for approval and others are in earlier planning stages.

The mammalogy program in 1972-73 did not expand to meet our many commitments due to financial limitations. Our on-going long term studies on polar bear in the Northwest Territories and elsewhere are continuing but require additional manpower particularly in denning studies in the high Arctic and also in joint studies in the Beaufort Sea.

Our caribou studies have been widely varied. Range capability studies in northern Saskatchewan and northern Manitoba are continuing as are movement and mortality studies on the Porcupine herd and the Banks Island herd. The initial inventory of Peary caribou on Melville, Bryan Martin and Eglington Island has been completed. The studies are designed to provide accurate information on the populations, movements, range requirements, social behavior and responses to human disturbance of various sorts. Another study on food habits of the two species will be started this year on Axel Heiberg Island.

A study of the Ungava-Labrador caribou was started at the request of, and in cooperation with, the provinces of Quebec and Newfoundland. The aim is to obtain information on numbers, movements, ranges and population dynamics of caribou populations in that area so that the herds can be managed more effectively. This project also has links with the James Bay hydro projects; an unknown percentage of the Ungava-Labrador herds will be affected by the hydro development.

Finally it should be mentioned that the Canadian Wildlife Service's long-standing position as advisor to the N.W.T. and Y.T. game branches on wildlife matters is changing as both territorial governments augment their own capabilities in management and research. We view this development as an opportunity to expand research with territorial government approval on wildlife in the north on all fronts, and can only hope that the federal government can keep pace on a cooperative basis, with those added commitments.

A CWS office was opened in Whitehorse. The office was established to deal with pressing needs for wildlife advice in connection with the land-use permit issuance process of DINA, to provide a Yukon base for pipeline route studies and to undertake resource mapping programs organized in conjunction with DOE lands directorate and the arctic land use research program of DINA. When certain formalities have been observed, we plan to establish a similar office at Yellowknife.

A five-year study of reindeer herd management in the Mackenzie delta has been completed and recommendations for the future made to DINA. The CWS contract staff concerned will be replaced by an enforcement co-ordinator, needed to oversee the rapidly escalating search for petroleum and gas in the Mackenzie delta.

Last year personnel of the service's pathology section vaccinated nearly 5,000 bison against anthrax in Wood Buffalo National Park and at Hook Lake, N.W.T. No known cases of anthrax occurred last year in either area where bison herds

were kept under surveillance throughout the summer months.

The laboratory examination of material collected at the postmortem examination of 81 Dall sheep taken in the Mackenzie Mountains, N.W.T., during the winter of 1972, showed lungworm infection to be common. Lesions of pneumonia were noted in most animals. In all animals, the gastrointestinal parasitic load was relatively light.

In the context of the section's study on the health status of wildlife in Canada, field support was given to our eastern region study of the Peary caribou on Melville Island, and to the Peary caribou-muskox interaction study on Banks Island, District of Franklin, carried out by the territorial game division, government of the Northwest Territories.

Material collected during these field studies is being examined for parasites and pathologic conditions. In that context, the examination of furbearing animals in northern Canada and of species of wild birds from various parts of Canada continued.

It is estimated that over 40,000 ducks, mostly Mallards, died as a result of an epizootic of duck virus enteritis at the Lake Andes National Wildlife Refuge, South Dakota, U.S.A., last winter. Nearly 250 Canada Geese also died during the outbreak. The virus affects ducks, geese and swans. It is not known to affect other species of birds.

The outbreak was the first of that magnitude to have occurred in wild waterfowl. Migratory waterfowl is a likely vehicle to spread the disease. Considering the possibility of carriers introducing the disease into Canada, an extensive surveillance program was set up in collaboration with provincial, territorial and other wildlife agencies. Arrangements were also made with provincial veterinary agencies in western Canada as well as with the animal diseases research institute of the Canada department of agriculture for the examination of waterfowl. We are most grateful for the collaboration of the various agencies involved in the surveillance program and the cooperation given us by veterinary agencies at the provincial and federal level.

Early in May a die-off in a captive flock of Wood Ducks near Winnipeg was investigated in collaboration with the Manitoba veterinary services branch and the animal disease research institute. Analyses of specimens did not show the presence of DVE.

In the first two weeks of May a die-off involving several hundred Old Squaw ducks occurred at Long Point, Ontario. A number of these birds were examined at our pathology laboratory and the animal diseases research institute.

Note: Results will also be available later when they can be incorporated in the text of this address.

The CWS interpretive venture had made some notable progress in the past year. Two new programs will be operational in Quebec this summer.

For many years, the Canadian Wildlife Service, when within the department of Indian and northern affairs, provided professional advice to its national and historic parks branch with respect to research and preservation of wildlife and ecological features in the National Parks of Canada.

Even though the service was transferred to the department of the environment, it has continued to provide similar services, thanks to agreements between the two agencies concerning research and resource inventory studies in the National Parks. The team which for many years carried out such studies has been able to continue those investigations. It is hoped that the relationship between the two agencies will be maintained at the high level it has achieved for years to come.

At Cap Tourmente, near Quebec City, an interpretive centre on the national wildlife area opened to the public in May. The centre will interpret this region of Canada in general and, of course, the thousands of Greater Snow Geese on the mudflats in front of the centre in spring and fall. The building has a viewing deck which overlooks the tidal marsh, a public lounge, display hall, theatre, and offices. Outside, hiking and nature trails will be available for visitors.

The second Quebec centre is located east of the city of Percé, overlooking the Gulf of St. Lawrence, Bonaventure Island, and Percé Rock. The buildings are not completed, and so the program this year will be guided walks and naturalist talks. An exciting aspect of the program at Percé is that the Quebec government is permitting CWS to use Bonaventure Island for part of its interpretive program. The spectacular seabird colonies on the island will receive much deserved attention in our interpretive story.

In B.C. another centre and program is in the initial stages of planning and development at the Creston Valley wildlife management area. This area offers tremendous potential for an interpretive message about man, waterfowl, and the ecology of this interesting Canadian landscape.

Our first interpretive centre at Wye Marsh near

Midland, Ontario, is now in its fifth year of operation. The program and facilities are now well established and in year-round operation. Experiences at this centre over the past several years offer a vast store of knowledge for guiding the development of our own operations.

There are other proposals for interpretive centres under consideration. As funds permit and proposals become actualities, the nation-wide objective of interpreting the Canadian landscape and its wildlife from coast to coast will be closer to its eventual realization.

In the toxic chemical program in the west, studies on the ecological effects of herbicides are now well under way in Alberta, and a new study has been launched in British Columbia on the toxicity of petroleum compound to seabirds in anticipation of increased oil tanker traffic off the coast.

Last year's wide-ranging Ontario survey of a number of fish-eating bird species breeding on the lower Great Lakes defined where and in which species the major effects of chemical pollutants are occurring. This summer's work is concentrating in detail on a few species in the most highly-contaminated area, namely Lake Ontario.

The toxic chemical laboratory is sorting out the highly toxic contaminants found in commercial PCBs which may account for much of the PCBs' biological damage. The laboratory is also looking in detail at the whole complex of organochlorine contaminants present in Lake Ontario Herring Gulls. This work has been made possible by close cooperation between our Ottawa laboratory and the University of California's space sciences centre.

Our staff played a leading role in negotiating an agreement among 22 western industrial countries to restrict the environmentally-dangerous uses of PCBs, and a similar agreement on mercury is now under discussion.

In the east, we have continued to measure DDT residues in Woodcock. In New Brunswick, where the season was closed in one area because of high concentrations, the DDT levels in Woodcock were lower in 1972 than in 1971. A similar trend showed in DDT levels in Woodcock from Norfolk Co., Ontario. Declines in DDT levels in both those areas followed the cessation of major uses of DDT.

A highlight of our publication program in the past year was the Wildlife Society terrestrial wildlife publication award which was made to Leslie Tuck for his monograph on the Snipes. And it was doubly pleasing to have Tony Erskine's work on the Buffleheads receive an honourable mention in this same category.

Both books are written in a readable style and are valuable additions to the libraries of amateur naturalists and hunters, as well as professional ornithologists. Information Canada has reported that sales are quite brisk and we are helping matters along by advertising in journals and magazines.

Some six titles have been added to our report series since we last met, the most recent title being The Mammals of Waterton Park by J. Dewey Soper. Other titles include a study of the food habits and ecology of wolves on the barren-ground caribou range in the Northwest Territories, by Ernie Kuyt, and the first part of a four-part study of the Kaminuriak caribou herd. A half dozen new or revised occasional papers were published along with a similar number of progress notes.

Public demand for information about wildlife continues to climb. We distributed close to one million pieces of literature last year, mostly copies of our Hinterland Who's Who Series. We have a number of new titles assigned, or written, including Woodcock, Arctic Fox, and Snowshoe Hare.

Last year I told you that we had asked Doug Clarke to write a manuscript on hunting that would be suitable for distribution in pamphlet form. This work is now in its second draft and I believe that all of you have received copies and have been invited to comment. As many of you know, Doug is now serving in Africa as the CIDA advisor attached to Tanzania National Parks.

Work on a script for a film on hunting has been going forward rather slowly. The research has been done and a first draft prepared, but it was turned back for further work because the theme wasn't developed completely enough.

I am afraid that our plan to do a feature film on the Whooping Crane has had to be postponed because of financing difficulties. It was possible to complete the research and we are hopeful that the project can be re-activated sometime.

Research and scripting have begun for a feature film on the Greater Snow Goose. This is a subject that has a number of attractive aspects besides the intrinsic interest of the bird itself.

We will also be making eight new television clips of which four will deal with arctic species.

During the past year the service has participated in a number of projects which should throw more light on the role of wildlife in the social and eco-

nomic spheres in Canada. The service has been guided by recommendations of previous conferences.

It is an area in which joint planning and co-operative efforts are essential if we are to make progress. The subject deserves more time than I can devote to it in these brief remarks.

The panel, shown on the agenda, on wildlife statistics and socio-economics is intended to provide a forum for discussion of the pre-circulated papers and reports; and, hopefully, to project forward the concensus that has guided us in our attemps to learn more of the man-wildlife relationship.

The biometrics unit has contributed to statistical research and has advised other units of the service such as migratory birds, mammalogy, limnology and toxic chemicals. It has also advised the editorial and information unit, the regions and some provinces.

A major activity concerned the development of sampling methods and questionnaire design for obtaining more reliable estimates of hunting characteristics in the waterfowl harvest and species composition surveys.

An improvement in the analysis procedure for the non-game breeding bird survey was completed. In an effort to improve the quality of wildlife surveys a closer relationship has developed between Canadian and United States researchers.

Sport fish capability mapping is complete in the six provinces which are cooperating in that CLI activity. More than 128 wildlife capability maps have been published.

Wildlife Service officials are involved in environmental impact studies in relation to new transportation developments including the Roberts Bank shipping facility, Toronto II airport and the Mackenzie River highway. That type of involvement will likely increase. The service participated importantly in the development of guidelines for future environmental impact studies.

A staff advisor of the Wildlife Service (Dr. Solman) now serves as chairman of the National Research Council, associate committee on bird hazards to aircraft and as the official contact with I.C.A.O. headquarters, Montreal for that committee as well as on behalf of Bird Strike Committee Europe in I.C.A.O. matters. He continues to serve as chairman of the bird/radar/weather committee of Bird Strike Committee Europe.

Bird hazard forecasting for air safety is now operational in Sweden, Denmark, and Germany in addition to Canada (military).

The most vital advances in the service last year are in methodology rather than accomplishment. We are acting on an ever-larger stage, we are doing things more directly for other people, we are doing things with other people rather than alone. As a result we are exchanging more information.

Information that we provide is put to more and greater uses; our opinions are increasingly carefully weighed. This mode of operation is in part a result of the constitutional factor of divided responsibilities, and in part a result of the fact that wildlife is normally managed as one factor in a multiple-use resource management system, and to an extent is the traditional way in which CWS has sought to discharge its responsibilities.

However, during the past two years, there has been a great extension of liaison and interaction. The new department has had a great deal to do with this, through the emphasis that has been placed on developing mechanisms to focus expertise from all federal agencies with environmental interests onto federal, provincial, corporate and private activities across the country, from offshore drilling in the Atlantic to the industrial use of estuarine land on the Pacific; from pollution control in the Great Lakes to environmental assessment of pipeline routes in the western Arctic.

Before closing I would like to mention two events which slipped by last year without recognition. The first was that our conference in Halifax marked the 50th anniversary of the institution of the first Federal-Provincial Wildlife Conference in 1922 here in Ottawa. On looking back over the deliberations and recommendations of conferences held in the 1920's and 1930's, one is struck by the kinds of problems facing our predecessors then which still face us today.

There are several milestones in the advance of wildlife management in this country. Perhaps, over the long term, the most important has been the professionalization of staffs of game departments and the increasingly scientifical sophisticated methods they used to manage our wildlife resource coupled with increasing public interest in, and support of, our endeavours.

The outstanding problems that remained were not amenable to direct wildlife management manipulations before the war and are not now. Some examples of problems are unwise land use decisions, population growth, increasing resource development and advancing technology. They all require integrated multidisciplinary approaches for

their solution. I believe at last we are seeing such approaches. It is deeply encouraging to observe the response of the governments, the industries and the public to those approaches.

The second event was the 25th anniversary of the foundation of the CWS on November 1, 1947. The service was established as the Dominion Wildlife Service and changed its name a few years later to its present name. In 1947, the service had a total professional staff of nine based in head office and in the provinces. Its budget was about $175,000.

Today the organization has a complement of approximately 370 people and its budget this year is $10.7 million. I would like to pay tribute to our colleagues in the early days of the profession in this country for making this conference and our federal-provincial relationships so effective and cordial—and pay a special tribute to those old timers of the CWS who so well and truly laid the foundation of our organization today.

Report of the Canadian Wildlife Federation

R. C. Passmore

National wildlife week, 1973

All aspects of organizing, designing, writing and producing materials for the 1973 national wildlife week program were related directly to carrying out the intent of recommendation 3 adopted at the 36th Federal-Provincial Wildlife Conference. That recommendation read, "that the theme of national wildlife week 1973 be Man and resources to lend support to Man and resources year. It is further recommended that the theme, Preservation of wetland habitat, be deferred to 1974."

You may recall that the Man and resources theme was substituted, last year, at the request of the Canadian Wildlife Federation, because of our belief that devoting the 1973 national wildlife week program to that subject would serve to focus considerable attention on the ongoing activities related to the whole Man and resources program.

By the close of the Montebello workshop, in early November, 1972, it was apparent to us that the Man and resources year would be an event of such importance to warrant the highest level of support that could be mounted through the national wildlife week program. In looking for ways to increase the impact of the 1973 program, we felt that this might be an appropriate time to attempt to achieve an objective which we had previously been unable to approach.

That objective relates to the quantity of booklets distributed during national wildlife week. In previous years, this quantity had been sufficient to distribute only one or two copies to each school—it had always fallen well short of the number required to have one booklet accompany each poster and classroom lesson to the individual classroom participating in the program. Accordingly, we used that part of our national wildlife week budget which is normally devoted to production of a 60-second, public service T.V. clip to increase the quantity of booklets we are able to distribute to cooperating agencies on a complimentary basis. (We had hoped, initially, that we might still produce a T.V. clip, with the help of the Canadian Council of Resource and Environment minister, but this arrangement did not work out.)

When we contacted cooperating agencies in early December, we were able to offer complimentary distribution of sufficient booklets to reach at least one half of the 60 per cent of all classrooms which we recommend as an objective for distribution of national wildlife week materials. We expressed the hope that participation of each

province and territory could be increased by the amount necessary to reach the remaining half of the classroom objective. Your response was most gratifying.

The result was that the booklets were produced in sufficient quantity to permit distribution of approximately equal numbers of posters, booklets and classroom lessons to approximately 60 per cent of all classrooms in each province. Two provinces (Quebec at 75 per cent and Newfoundland at 90 per cent) exceeded the 60 per cent objective by substantial margins.

The result of this magnificent cooperation was distribution of national wildlife week materials in quantities which greatly surpassed that of any of the previous nine programs in which you and we have participated. Actual quantities of materials distributed are reported in the attached tabulation.

Our single, none-too-precise measurement of the success of any national wildlife week program—the amount of mail generated during and following national wildlife week—suggests that the 1973 national wildlife week program did, indeed, focus a great deal of attention on the Man and resources program. This is the first year that the level of response has required delivery of our mail by truck rather than by the postman.

Despite the strain which this volume of correspondence places on our small office, this proof of the success of the 1973 program has been acclaimed, by all of us connected with the Canadian Wildlife Federation, with a deep sense of gratitude to all of you who contributed to that success. We are indeed grateful for your outstanding level of cooperation.

National wildlife week, 1974

You will recall that the theme, Preservation of wetland habitat, has now been deferred at least three times. The first two postponements related directly to levels of crop depredation in the prairie provinces that made it unlikely that a program encouraging production of more ducks would be well received in the very areas to which its message would be aimed. Deferment beyond 1973 was influenced, in part at least, by the high priority which all of us assigned to giving maximum support to the Man and resources program.

Now, with a federal-provincial agreement helping to control waterfowl depredations in the prairie provinces, the previous objections to proceeding with the Preservation of wetland habitat program may have been lessened substantially, and you may wish to recommend that we proceed to use that theme for the 1974 national wildlife week program.

However, I would like to remind you of another serious problem which clamors for attention. At the 1972 Federal-Provincial Wildlife Conference, we dealt at some length with the growing threat which anti-hunting and anti-killing sentiments pose to continued harvesting and management of game species. This same subject is scheduled for discussion later in the program of this conference. Perhaps that discussion will provide a basis for determining whether the current level of concern is sufficient to warrant yet another deferment of Preservation of wetland habitat in favour of a theme which would make a major effort toward putting man's relationship with wildlife into better perspective.

As for the Canadian Wildlife Federation, our membership has already recorded, through our annual meeting held in April at Saskatoon, its preference for devoting the 1974 national wildlife week program to a Man and wildlife theme. This choice was made rather deliberately and only after serious consideration of the very great merit of alternative themes.

This conference will provide considerable opportunity to discuss waterfowl habitat, waterfowl depredations and progress being made toward reducing the impact of anti-hunting/anti-killing sentiment. No doubt these discussions will help to guide the recommendations committee in choosing the most appropriate theme to recommend for the 1974 national wildlife week program.

Table 1

National wildlife week 1973 summary of orders for posters, booklets and lessons

Province and organization receiving	Posters		Booklets		Lessons	
	English	French	English	French	English	French
British Columbia						
Fish & wildlife br.	8 000		5 000		10,000	
			(6,500)			
Alberta						
Fish & wildlife br.	13,500		6,800		13,500	
			(6,700)			
A.F.A.G. (Fish & game assoc.)	1,000		1,000			
Saskatchewan						
Dept. of natural resources	6,632		3,300		6,632	
			(3,300)			
S.W.F. (Wildlife fed.)	1,000		1,000			
Manitoba						
Wildlife federation (& gov't)	6,023		3,000		6,023	
			(3,000)			
Ontario						
Ministry of natural resources	47,800	3,200	21,800	1,100	47,800	3,200
			(23.000)	(2,100)		
O.F.A.H.			1,000			
Quebec						
Quebec dept. of education	6,500	45,500	2,500	28,500	6,500	45,500
			(4,000)	(17,000)		
Q.W.F. (Wildlife fed.)			500	2,000		
New Brunswick						
Dept. of natural resources	4,000	800	1,800	600	4,000	800
			(1,800)	(600)		
Nova Scotia						
Dept. of lands & forests	6,135		3,000		6,135	
			(3,100)			
Prince Edward Island						
Fish & wildlife division	1,000		500		1,000	
			(500)			
Newfoundland						
Wildlife branch	6,000		4,000		6,000	
			(2.100)			
Yukon	150		150		2,150	
			(200)			
Northwest Territories	324		150		324	
			(100)			
Canadian Wildlife Federation	1,700	600	2,700	1,600	1,700	600
Total orders	109,764	50,100	112,500	53,500	111,764	50,100
Grand totals, 1973	159,864		166,000		161,864	

N.B. Bracketed figures are C.W.F. allocation of complimentary materials—figures not in brackets are additional copies ordered by cooperating provinces and organizations.

Annual report of Ducks Unlimited (Canada), 1972

D. S. Morrison

Ducks Unlimited (Canada) in recent years has concentrated on expanding its program in line with an increasing availability of funds, and a growing interest by Canadian governments, agencies, and landowners, in environmental quality. This past year saw the culmination of many years of planning as several long-standing proposals got underway.

The highlight of the year has to be the implementation of plans to develop the giant Tilley B complex near Brooks, Alberta. This proposal is being developed jointly with the eastern irrigation district. Phase I, when completed, will provide approximately 7,300 acres of first-rate waterfowl and wildlife habitat, and will provide water for crop irrigation and livestock. Construction began in 1972, with development to be completed by 1975. Phase II, which will see water for wildlife and agriculture moved many miles through the arid country to the south, is still under investigation.

Oak Hammock marshes, 20 miles north of Winnipeg and a long-standing proposal dating back to 1940, was another government cooperative project undertaken by Ducks Unlimited during 1972. Over the years, successive attempts by agricultural interests saw the marsh largely drained.

However the Manitoba government, realizing the wildlife potential of the area, began a program of land purchase in the marsh which involved almost 8,000 acres. In 1972, Ducks Unlimited participated with the Manitoba government in installing the required water control dykes and structures. The area will eventually become a "showplace" for the waterfowl resource of the province.

These are just two of the many exciting projects embarked on during the year.

It is acknowledged that such projects would not be possible without the support received from the Canadian Wildlife Service and the water resource and wildlife divisions of various provincial governments. This support is deeply appreciated.

Construction program

A construction program involving 121 projects was undertaken across the country in 1972. Forty-four new projects were completed, three more were operational to be completed during 1973, and 21 were in various stages of construction at year end. Many of these projects will be completed during the winter season.

Earthwork, a good indication of construction activity, increased by over 18 per cent to 1,682,000 cubic yards. Our 1972 construction program involved over 120,000 acres of marsh and 1,000 miles of shoreline. Over 400 potential areas were investigated for future programs and contour surveys were completed on 78 areas. The accompanying table (Appendix 1) summarized the 1972 construction program (Page 23).

British Columbia

The winter of 1971-1972 saw heavy snow cover thoughout most of the interior of British Columbia. As a result, record flood peaks occurred on both the Columbia and Kootenay River systems. Our Moberly project, built in 1971 and designed to withstand the previous flood record of 1948, was overtopped. The dykes were raised during 1972.

Flooding also affected our program in the Creston Valley wildlife management area and our proposed works in the Creston marshes were postponed until the spring of 1973

The highlight of the 1972 B.C. program was the establishment of an office in the central interior region at Williams Lake. From this office an intensive reconnaissance program was undertaken, principally on the Chilco Ranch, and a number of projects are in the planning stages for 1973 and future years.

Alberta

The construction program in Alberta was virtually a year-long effort as programs begun in 1971 were completed during the winter months of 1972. Fourteen projects carried over from 1971 were completed as were 12 other projects. Fifty-five new areas were inspected and 13 contour surveys undertaken.

Negotiations were finalized on the impressive 7,300 acre Tilley B complex near Brooks and construction commenced in late August. Additional extensive surveys were also undertaken to determine the costs of developing areas below the main reservoir. Because of the emphasis on the Tilley area, a number of planned smaller projects throughout Alberta were postponed.

Cooperation with the Alberta government continues at a high level. The department of the environment water resources branch is in the process of preparing a provincial water management plan in which wildlife habitat rates highly. Consequently, Ducks Unlimited is looking forward to an even greater Alberta program in future.

Saskatchewan

In Saskatchewan 23 projects, built with the co-operation of private landowners, were completed. A major undertaking was the Evans project on the Beaver River flood plain in north-central Saskatchewan. This project complements other developments in the area completed in past years. Sixty new areas were investigated and 36 contour surveys were carried out.

During the year, the federal and provincial governments announced a program aimed at reducing crop depredation losses to farmers in Saskatchewan. It is hoped that this program will make waterfowl conservation much more acceptable in the wheat province than it has been in the past.

Manitoba

The major undertaking by our Manitoba provincial operation in 1972 was the Oak Hammock marshes 20 miles north of Winnipeg, developed in cooperation with the Manitoba government. Ducks Unlimited undertook development of several water control works within the project which will eventually become a wildlife and nature study area. To maximize production success, a substantial number of nesting islands were incorporated into the project.

In the northern part of the province near The Pas, our Two Island pumping program in the Tom Lamb wildlife management area (Mawdesley Del-Mar) continued during 1972 and levels were successfully reduced in the 37,000 acre area. Response of vegetation and waterfowl to this drawdown has been encouraging.

Extensive survey, engineering design and biological reconnaissance has been made on the Marshy Point project, located approximately 70 miles northwest of Winnipeg on Lake Manitoba. This 7,800 acre marsh suffers from carp infestation and wind tide flooding from the lake. Development will commence during 1973.

Maritimes

Despite adverse weather conditions during the construction season, the 1972 Maritimes program finished in grand style. Twelve projects were built on land made available by the provincial governments of New Brunswick, Nova Scotia, and Prince Edward Island, as well as the Canadian Wildlife Service.

The major undertaking was the 700 acre Amherst Point marsh near Amherst, Nova Scotia. This excellent marsh, which had previously been drained for agriculture, will complement our other projects in the area such as the Maccan and the John Lusby salt marshes.

The Maritimes office also handled a number of investigations in the province of Quebec during the year and plans are being finalized to develop an area in *la belle province.*

Biological programs

After three years of excellent habitat conditions, the prairies returned to normal in 1972, and the resulting drier conditions brought about a shift in breeding populations to the well-watered parkland and forest edge. However, the total number of breeding birds was about the same as 1971, and the 1972 production season was considered average in comparison to other years.

For 1973, there is a good carry-over of water in the parklands but, as usual, a heavy run-off will be required to ensure habitat quality comparable to the last four years.

Our customary waterfowl population and habitat transects were run on the prairies in May and July and these were combined with brood counts and the reports of our volunteer corps of reporters across the prairies to provide data for the "Duckological".

Biologists also evaluated and reported on the waterfowl potential of various projects that are being contemplated for development.

Our special projects biologist completed his assignment with the Peace-Athabasca delta task force at the end of September. His report, which estimated waterfowl production on the delta in 1971 at 500,000 birds, indicated the immense value of the Athabasca delta to North America's waterfowl resource. The report of the federal government task force is in the final preparation stage. We are hopeful that it will recommend additional remedial work on the delta, to restore water levels which have been substantially lowered from their natural regime.

In addition, our special projects biologist conducted a survey of the waterfowl potential of the 957 square mile Paddle River watershed, 60 miles northwest of Edmonton. Extensive flood control projects are planned for the watershed and our survey will indicate to what extent Ducks Unlimited should become involved.

A helicopter survey of the Battle River was undertaken during the year to determine if Ducks Unlimited should be involved with the Alberta

Appendix 1

1972 construction program	Maritimes	Manitoba	Saskatchewan	Alberta	B.C.	Total
Projects begun 1971						
Completed 1972	4	5	9	14	1	33
New projects completed	6	5	22	9	2	44
Operational (90% complete)	3	—	—	—	—	3
Marsh improvements	1	9	1	1	—	12
Major repairs	1	4	—	2	1	8
	15	23	32	26	4	100
Under construction (to be completed 1973)	4	11	—	2	4	21
	19	34	32	28	8	121
New flooded acres	2,652	47,016	3,519	3,721	195	57,103
New miles of shoreline	39.1	328.2	102.7	44.9	4.1	519.0
Minor repairs and maintenance	7	29	42	81	—	159
Cubic yards of earthwork	180,000	705,000	210,000	460,000	127,000	1,682,000
Cubic yards of riprap	1,840	8,786	3,205	2,977	8	16,816
Cubic yards of concrete	102	3	131	447	38	721
No. of nesting islands	—	60	102	33	16	211

government in development along this river. Little potential for us existed and we declined to become involved.

Preliminary biological reconnaissance was carried out on the Vermilion River in east central Alberta and in the Columbia River valley in the interior of B.C. Both of these areas have long-term development possibilities.

Management of our projects can result in increased waterfowl production. In this regard, 211 nesting islands were designed and built into various projects throughout western Canada, and 106 potholes were blasted to open up cover and provide additional territorial space for breeding birds. In addition, water levels were drawn down in several project areas to stimulate the re-establishment of emergent vegetation.

On the Milligan Creek project near Wadena, Saskatchewan, 50,000 feet of ditching was completed to open up the marsh. The resulting spoil banks will provide added nesting sites within the project. In British Columbia, 120 Canada Goose nesting platforms were installed in the Columbia River marshes.

The first year of a two-year study of the waterfowl ecology of the northern forest areas was completed in Alberta. Our study indicates that waterfowl production in parts of the forest area is substantial. The investigation will provide us with guidelines to evaluate future development proposals in the northern forest region.

Also in Alberta, the first year of a two-year study on the Ribstone Creek development, a series of 31 projects, was designed for both wildlife and agricultural use. The study will provide guidelines for the most effective management of the development for both purposes. The first year indicates that this project concept is operating most satisfactorily.

Public relations

In 1972 we continued our public relations program aimed at influencing landowner cooperation. Our movie, Where there's water, was distributed during the year through our own offices, and the offices of several private agricultural firms. It has been well received by the agricultural community. The film has appeared on television at Saskatoon, Prince Albert, Yorkton, and Brandon.

A full-color brochure of the same title was also produced to complement our movie, and to answer queries from the public on Ducks Unlimited's programs.

Our Marsh world series was carried by over 300 publications in Canada during the year and has proved to be an effective means of keeping our name and objectives before the Canadian public. This series will be expanded into television in 1973.

Personnel and administration

During the year, provincial biologist's positions were filled in the Maritimes and Manitoba, and field offices were opened at Williams Lake, B.C.; Ashern, Manitoba; and Yorkton, Saskatchewan. A comptroller was also hired for head office in Winnipeg.

Waterfowl populations—1973

F. G. Cooch

Conditions in the Canadian breeding grounds and on those northern prairie states which supply some birds to us by moult migration and post hatch dispension of young make up a mixed bag.

In the Arctic and subArctic, 1972 was a disastrous year in terms of production of Snow Geese, Ross Geese, White-fronts and Brant, and some of the smaller races of Canada Geese. Forecasts of no reproductive species over vast areas of breeding habitat were confirmed almost as soon as the first flights of geese came south.

I am pleased to be able to report that through the efforts of the Canadian Wildlife Service the climatic trend in the Arctic has been reversed and as a result we are forecasting excellent reproductive success in 1973. We have been able to get almost complete aerial coverage of all important breeding colonies of Snow Geese in the eastern Arctic and to date can detect no serious climatic or population restraints on Snow Geese reproductive success.

In the western Arctic, nesting was completed about June 5, at least two weeks earlier than normal. That's the good news!

Now for the situation in the provinces. The number of water areas on the prairies in the autumn of 1972 was below normal. The winter of 1972-73 was generally one of light snowfall and above average temperatures over a very broad area which included the three prairie provinces, the Dakotas and Montana. Spring runoff was virtually nonexistent and ephemeral in nature. The remaining water provided inferior quality habitat.

An indication of the decline in carrying capacity between 1972 and 1973 can be gleaned by the reduction of the number of water areas in the southern prairies from 3,512 in 1972 to 2,038 in 1973. Of course, some areas were hit more severely than others, especially strata 20, 21, 22, in Saskatchewan and 24 and 25 in Manitoba. The decline in habitat was not matched by a decline of similar magnitude of returning waterfowl. Prairie wide adjusted data for Mallards, Pintail and total ducks were in comparison to 1972 as follows:

	Mallards	Pintail	Total Ducks
1972	5,635	4,323	19,573
1973	4,778	2,267	17,237
	− 875	−2,056	− 2,336

The greater decreases were recorded in Alberta stratum 28 (Pintail), Saskatchewan strata 20 and 22 and Manitoba strata 24 and 25. We should take no particular comfort from the fact that populations did not follow the plummet in number of water areas.

There is an apparent cline in both habitat quality and numbers of returning birds with a high in Alberta (nearly identical with 1972) to a low in Manitoba.

Superimposed on the quantitive data is a potentially more serious cline associated with deterioration of habitat quality. In summary, 1973 on the southern prairies is likely to be one of the poorest breeding seasons in recent history. At best it will produce a fall flight of 25 per cent below that of 1972 with an expected immature to adult ratio of 0.8. The quality of habitat available is likely to exert more environmental pressure on both Canvasback and Redheads.

To a limited extent, the traditional overflight of birds beyond the prairies which occurs in dry years has been repeated in 1973 with the greatest overflight occurring in Manitoba. Low water-levels exist over many of the northern strata.

Now to the stable east. Two years of experimental surveys in southern Ontario have been concluded and waterfowl populations there and in southern Quebec show virtually no annual change. Results are not yet available from the extension of the survey programs which was made into the clay belt of Ontario and Quebec this summer.

The spring floods in New Brunswick and high lake levels in southern Ontario will have an unknown effect. In general, an early spring occurred throughout most of eastern Canada, a fact which traditionally produces above average fall flights of birds. The retarded spring situation which occurred in 1972 in the Atlantic provinces does not seem to have repeated itself. The prognosis is also good for those populations traditionally breeding in the boreal forest.

In summary, an improvement in fall flight in eastern Canada is forecast for 1973, except for those species whose principal origins are the western provinces.

Western Canada waterfowl technical group

H. R. Weaver

Background

At the 1967 Federal-Provincial Wildlife Conference, it was decided that two migratory bird technical committees should be formed: one in eastern Canada and one in western Canada.

The original idea was to have each committee meet twice annually: in June, to review and discuss the results of various surveys, to establish the spring status of various waterfowl populations, and then to discuss hunting regulations for the current year; a second meeting in November or December was to be a technical forum or workshop to discuss operational techniques. Members or delegates would represent each provincial and territorial wildlife agency, Ducks Unlimited, and Wildlife Service.

The western body first met in 1968, in June in Edmonton and in December in Victoria. At the December meeting it was proposed and recommended that waterfowl technical committees be established in each province.

In 1969, the original western committee was altered. It was decided that the large gathering of technical workers should continue meeting in early winter to discuss technical matters, and that the June meeting be replaced by much smaller committees formed within each province. The provincial committees would co-ordinate the operational aspects of waterfowl work being done in the province and would also furnish parent agencies with up-to-date waterfowl status reports each June.

As things now stand in the west, there are two types of meetings. First there is an annual winter gathering of waterfowl workers from across western Canada, who meet to discuss technical matters such as waterfowl and project status, new methods, improved techniques, research findings, and so on. This gathering has since been renamed the WCWT group, which is self-descriptive —a group of workers with waterfowl as a common base, who meet to exchange information and ideas. The 40 or so delegates who attend represent not only Canadian Wildlife Service, Ducks Unlimited, and the provincial wildlife agencies, but also the U.S.F. & W. S., delta research station, and various universities and technical schools.

Secondly, there are provincial technical committees which have been active in British Columbia and Alberta since 1969, and in Saskatchewan since 1971. These are comprised of one biologist each from the provincial wildlife agency, the Canadian Wildlife Service, and Ducks Unlimited, with other biologists and expertise frequently invited or solicited, as required. These committees form a co-ordinating and recommending role within the province, and each member reports to, and is responsible to, his own parent agency.

Waterfowl workers in Manitoba met in July 1973 and are in the process of forming up along similar lines, with the tentative formation of a population sub-committee and a habitat sub-committee, under the guidance of a multi-agency steering committee.

In spring, 1971, the secretary of the western group polled the directors of the provincial wildlife agencies, Ducks Unlimited and Canadian Wildlife Service, western region, regarding the reporting of the group's activities. The consensus was that a brief outline of the winter meeting was sufficient for this conference. Following are agenda items which were discussed at the last group meeting held in Winnipeg, December 5-7, 1972.

Agenda

As for provincial committees, discussion topics are similar in all three of the westernmost provinces. Trumpeter Swans and Large Canada Geese, for example, have received increased attention from all three committees this past year. The Saskatchewan committee has begun preparation of the first annual report of its activities, and the 1972 report for Alberta is now available.

In closing, I might add that the western wildlife directors' sub-committee is considering the existing structures of various wildlife committees in western Canada, and the status of both the western group and the individual technical committees are currently under review.

(See next page.)

Agenda

Western Canada waterfowl technical group
December 5-7, 1972
Winnipeg, Manitoba

Day I. Status and progress reports

1. Review of waterfowl population status—ducks and geese—provincial, national, and international status, by species group
2. Status and future of wetland habitat—each western province, by province—prairie provinces, by C.W.S.
3. Federal acquisition and Canada Wildlife Act
4. Habitat development in Manitoba
5. Wetland acquisition in Saskatchewan
6. Research needs and priorities—each western province, by province—C.W.S. western region

Day II. Technical

1. Patuxent Mallard study
2. Pintail molting
3. Distribution of goose harvest
4. Waterfowl production in high permanency areas
5. Band recovery analysis of released Mallards
6. Waterfowl depredation in Alberta
7. Depredation programs in Manitoba and Saskatchewan

Day III. Technical and evaluation

1. Mercury in Manitoba waterfowl
2. Breeding distribution of EPP Large Canada Geese
3. Present status; future direction for WCWTG. 1973 meeting in Edmonton to be in early December.

Report from the Bureau of Sport Fisheries & Wildlife

John Rogers

To begin with I want to express the director's regrets at being unable to attend this conference. He was greatly disappointed that an unanticipated change of schedule required him to be present at another meeting.

Last year at this meeting Dr. Linduska reported on the reorganization taking place within the bureau and listed the new top-level officers replacing those who had retired. Reorganization has continued during the past 12 months.

A new region has been established with headquarters in Denver, Colorado, increasing the number of bureau regions from five to six. This brings the bureau into conformance with a basic system of regional boundaries established by the federal government for all federal agencies. The new region is under the direction of Merwin A. Marston, formerly chief of the division of federal aid.

The orientation of bureau activities toward program management concepts is another important change begun during the past year and continuing this year. This involves the definition of goals and objectives, and the development of programs, policies and operations aimed at meeting them. Although much remains to be done, the development of program management guidelines for major program areas is well advanced and we are now preparing to implement them.

An area being given greatly increased attention by the bureau leadership is the development of closer cooperation and co-ordination with other federal, state and private conservation organizations. We are pleased at the progress in this direction made during the past year in regard to the establishment of hunting regulations and other migratory bird management activities. The underlying philosophy here is the state and other

conservation agencies have a high degree of expertise and interest in migratory birds, and that management of this resource will benefit from a partnership in which important resource decisions are made in concert.

Among other bureau activities that will be of interest to you, I will mention the following:

1. The iron shot program. As many of you know, the bureau conducted a program with iron shot last fall on seven national wildlife refuges where public hunting is permitted. We regard it as a successful program in which hunter acceptance of iron shot and the field performance of iron shot ammunition was generally good. We plan to continue with an expanded program this fall involving a cooperative effort by the bureau, the states and the private sector. The objective, as with the program conducted last fall, is to provide as many hunters as possible with an opportunity to use and become familiar with iron shot. The ammunition manufacturers have been most cooperative in providing ammunition for these programs.

2. A special study of the Canvasback, initiated by the bureau last year, is being continued. Eleven specific research projects involving work on breeding, wintering and migration areas are being directed toward various aspects of population dynamics, migratory movements, physiology, and the general ecology of breeding and wintering areas, particularly Chesapeake Bay. Although it is too soon yet to judge the progress of these studies, we hope they will help guide future management decisions about this important but troubled Game Duck.

3. In the area of waterfowl habitat acquisition we must report that progress has been temporarily slowed. Due to federal budget constraints that have recently become necessary for economic reasons, the bureau's capability for habitat acquisition and preservation has been temporarily reduced by about half. This applied in FY 1973 and is expected to continue in FY 1974. Under these circumstances, primary emphasis is being directed toward acquisition of waterfowl production areas, and acquisition plans for national wildlife refuges are generally being held in abeyance.

In a related development, funds for the U.S. department of agriculture's water bank program, generally regarded as having great potential for improving nesting habitat for waterfowl and other species of birds, were eliminated from the 1974 budget. Although there is great interest among conservation groups for restoring these funds, the prospects are not promising.

4. An important but not encouraging event of the past year was the first major outbreak of DVE among wild ducks in North America. It occurred at Lake Andes national wildlife refuge in South Dakota during the winter and resulted in the loss of about 40,000 ducks, mostly Mallards. At this point we do not know what the future of this disease will be in North America but we recognize its potential and are working hard to develop plans for dealing with possible future outbreaks.

5. I think many of you are aware of the amendment to the Migratory Bird Treaty with Mexico that was signed at the North American wildlife conference last March. This brought an additional 32 families of birds under federal protection in the United States and Mexico. Included among these are raptors and crows.

Under the terms of the Mexican treaty these birds are now protected at all times except as otherwise specified by federal regulations. Since both raptors and crows have traditionally been used for sporting purposes the bureau is currently preparing regulations which will permit the controlled use of raptors for falconry under a system of falconry permits, and permit states to designate an annual hunting season on common crows not to exceed 124 days, provided they are not hunted during the nesting season. The shooting of crows may also be permitted under depredations orders issued to states where these are justified on the basis of depredations problems.

The director has asked me to express his hope that we can soon reschedule the meeting of the international migratory bird committee that was unavoidably postponed this spring and to convey to you his best wishes for a successful Federal-Provincial Conference.

Convention on international trade in endangered species of wild fauna and flora

Introductory remarks

Dr. D. A. Munro

Our purpose is to discuss the convention on trade in endangered species of flora and fauna. Its antecedents go back many years. It was under the auspices of the International Union for the Conservation of Nature and Natural Resources (IUCN) that the idea was first proposed. Drafts were circulated among nations, I think as long as about 10 years ago. There was some discussion of the general intent of a convention of this sort at previous federal-provincial wildlife conferences, so the general background is probably quite familiar to all of us.

A text of the convention that was negotiated at Washington last February was provided to the Canadian government in January. As soon as we had reviewed it, the minister of the environment sent copies of the draft to the provincial ministers responsible with the hope that we could have from them some formal comment on the convention before attending the negotiating conference.

Unfortunately the time was short and we were not able to get very much feed-back at that time. The convention was negotiated and concluded, although Canada has not yet signed or ratified it. Following the conclusion of the convention, copies, of it and its appendices, which are very important, were again circulated to responsible ministers by the minister of the environment.

At the same time, because of a requirement in Canadian government procedures for a more formal level of approval of any convention which deals with subject matter under provincial jurisdiction, the secretary of state for external affairs despatched copies of the convention to the offices of either the provincial minister of intergovernmental affairs, if such exists, or to the office of the premier. It will be the responses to that level of correspondence that will give the authority to the government of Canada eventually to adhere to this convention.

In the meantime, we have the opportunity to review it now. There is considerable flexibility within it should there prove to be any part of it that presents problems to any province. Now, I might take just a few minutes to review its content and mechanism and then it may be worth while to have comments from members of the delegation that attended the conference in Washington.

The delegation was headed by Dr. Malcolm Prebble of the department of the environment, and he was supported by Dr. Novakowski of the Canadian Wildlife Service, Miss Caskey of the department of the environment, George Argus of the National Museum (whose particular expertise was on the flora side), W. P. Molson of the department of industry, trade and commerce, and a scientific attaché from the Canadian embassy in Washington.

The object of the convention is to control the exploitation of species of plants and animals that may be threatened with extinction or in danger of extinction through the mechanism of controlling trade—not in any other way. The convention accomplishes this by setting forth procedures to govern trade in relation to three named categories of species.

In the first category, trade requires the issuance of an export permit by the country of origin, which has to satisfy certain conditions. The country of origin has to certify that export will not endanger the species. If it is a living species it has to certify that the species will be adequately handled and shipped. The transaction also has to be covered by an import permit issued by the prospective country of import. So it's quite a complex and tight control on this first category of species. Species included in the first category are listed in appendix I of the convention.

The next category of species includes those which are considered to be not in imminent danger of extinction but which might reach that stage if trade were to continue uncontrolled. The trade in them is also controlled, but not quite so tightly. They still require an export permit from the country of origin with the same sorts of provisions as apply in respect of those species in the first category. But they do not require the prior issuance of an import permit from the country to which it is expected that the species will be shipped. So it is a slightly less degree of control. These species are listed in appendix II of the convention.

And finally, there is provision in the convention for any country to name species to a third category where it is more a matter of unilateral action in that any country may designate a particular species within its boundaries as requiring the sort of control that would be exercised by the export permit system.

In brief, that is the procedure that is to be followed in controlling trade. There is provision in the convention for the naming in each country that adheres to the convention of a scientific authority and a management authority. The management authority is that agency designated to

have the responsibility of issuing the permits and ensuring the proper administration of the system. The scientific authority is to provide the scientific advice basic to the proper administration of the convention.

In Canada, it is expected that the legal mechanism for providing for the issuance of permits and for controlling the traffic will be the Import-Export Permit Act administered by the department of industry, trade and commerce.

And it is considered that the management authority would most properly reside within the department of industry, trade and commerce. It is proposed that the scientific authority should be within the department of the environment—the Canadian Wildlife Service. It is further proposed in this connection, and this proposal was put forward for comment by your responsible ministers in a letter from our minister, that each province should designate persons who would be advisers to the scientific authority in respect of particular areas of concern that might fall within the jurisdiction of any particular province.

I should mention the amending procedure. There is a fairly flexible procedure for amending the appendices or annexes to the convention. Any state wishing to remove a species from the convention in one of the annexes, or add one to it, may notify the secretariat in writing of its intention; the secretariat (who incidentally is the environmental secretariat of the United Nations headed by Maurice Strong) will distribute to the countries signatory to the treaty the notice of intent of one of the states proposing an amendment; allow a certain period for the receipt of objections or comments, and finally if none is received, the amendment is accepted.

There is also a proposal that two years from the date of the convention coming into effect, that there be another conference of the signatory states to review the operation of the convention, and at that conference it would also be possible to propose amendments.

There is one more point: any state can enter a reservation with respect to the inclusion of any particular species in the appendices, which means that it can say, in effect, that while it approves of the intent of the convention and proposes to adhere to it generally, it does not propose to adhere with respect to any particular species for which it enters or records a reservation.

Consideration of the amending and reservation procedures may suggest to you that the convention isn't of much use, but I don't think that you should conclude that. In the international field generally, nothing gets done except by concensus and free will. There is really no such thing as compulsion and I think that the fact that so many states have participated in this convention, and that 35 states have already signed it, indicates that there is quite a significant will in the international community to provide greater control over trade in endangered species and, by extension, to ensure the preservation of the species. I think this is really a significant forward step if you look at it in the context of the usual sort of strength of international agreements.

There are details that I haven't dealt with. It might be appropriate at this time to ask Dr. Prebble if he would like to say a word or two about his experience as head of the delegation, following which Mr. Molson who is from the department of industry, trade and commerce, and who has a particular problem to work out in this connection, and Dr. Novakowski, who took part in many of the technical discussions relating to the appendices, might wish to make comments.

Dr. Prebble

I will just make one or two very brief comments. The first is that in spite of the fact that there were 88 nations involved in the conference, at no time was it necessary to decide any issue by calling for a vote. The really tough issues were taken out of the plenary session and resolved in sub-committees after a number of sessions, some of which were quite gruelling.

The only other thing I would like to mention is that the convention covers marine species as well as terrestrial species. That was a very ticklish part of the conference, because some of the important nations were dead set against having marine species involved at all. This proved to be the most difficult and controversial part of the conference that was finally resolved with rather precise language, taking account of the area of national jurisdiction which very often extends beyond the area of sovereignty.

As far as Canada is concerned it amounts to this: where Canada has established exclusive fishing zones that extend far beyond the territorial sea, those species taken within the fishing zone will be treated in the same manner as terrestrial species taken on the land mass of Canada. Species taken outside of the established fishing zones will be governed by the specific terms of the convention.

Mr. Molson

There are a couple of points that I thought I would touch upon, probably somewhat at random. As Dr. Munro mentioned, it has been suggested that the Export and Import Permits Act might be the proper vehicle to set up the system of controls envisaged under the convention. The necessary enabling legislation exists at the moment under this Act.

Implementation of the necessary controls would, of course, be a matter of working out such administrative details as the establishment of export and import control lists, a system of export and import permits and so on. Many of these administrative details are currently being discussed in conjunction with the department of national revenue—customs and excise and appropriate administrative mechanisms have not yet been established.

Dr. Munro indicated that for all three appendices, it is envisaged that exports would require an export permit. Only in the case of appendix I species, where it is envisaged there would be little trade, would there be a requirement for actual import permits. For the import of species listed on appendices II and III, we do not feel that it would be necessary to require an import permit but rather the presentation, at the time of import, of a valid export permit or certificate or equivalent from the country of origin or the country of export.

Speaking for a moment from a departmental point of view, the provisions of the convention are being studied within the department at this time. There are a number of questions which we are looking into, one of which is the amending procedure. We want to be very sure that our other international commitments would not be prejudiced should Canada become a signatory of the convention. In this context, we have been noting with interest the other countries which have already signed the convention to determine whether our major trading partners will be signing the convention.

Dr. Novakowski

Dr. Munro has already outlined the areas where we would be involved, both in the department of the environment and more specifically, in the Canadian Wildlife Service, and that would be likely as one of, or perhaps the, scientific authority.

The fact that plants are treated separately in the convention indicates that a separate scientific authority may be required and the convention, of course, makes allowances for that. As for Canada, I am not too concerned about that particular part of the convention. I believe we named only one species which is exported. Imports are another problem needing solution.

The other major concern, I am sure, is the lists or appendices. I think most of you have seen the articles of the convention in one form or another, probably since 1963, but the lists were to a certain extent sprung upon us and most certainly sprung upon you. You are very well aware that legislation generally in Canada does not cover endangered species with the exception of Ontario's which has been late coming and is not completed as yet. As a result we had no precedents upon which to draw in Washington and used only an unofficial list which had been published previously in respect to a much broader program, the rare and endangered species program in Canada.

As a result you have cause to question the species lists but I have just explained that the reason for the animals being on the list is that we lacked consultation over a long period of time—and these things have got to be discussed over a long period of time. I am sure some of you will readily admit that this matter has not really concerned you over the years in any one particular province. I am sure all of you now are justifiably concerned and are willing to cooperate. At the same time, if you feel that some of the species on the lists were sprung on you and unjustified, there are amending procedures—as Dave Munro has explained. Secondly there is also an avenue for direct discussion rather than confrontation.

Wildlife statistics and socio-economics: Game statistics

D. A. Benson

Report to delegates of the 36th Federal-Provincial Wildlife Conference, 1972. Progress as of March 1, 1973 on one aspect of resolution 7.

Background

Stimulated by recommendations of previous conferences, the Canadian Wildlife Service presented to the 36th conference a proposal for joint action on the collection and publication, by Statistics Canada, of a summary of hunting and harvest data. It would serve as basic data for the evaluation of economic and social values derived from the consumptive use of Canadian wildlife.

Compilation of such data was endorsed by recommendation 7(a) of the conference.

Action taken

The CWS approached Statistics Canada, asking agreement and cooperation in the creation of a program under which the territories, provinces and the CWS would contribute standardized data for publication by Statistics Canada.

Agreement was reached with Statistics Canada. R. A. Chadwick of that organization has been working with game agencies to collect and publish records of licence and permit sales and revenue in a new annual publication (Travel, tourism and outdoor recreation—a statistical digest, Statistics Canada, Cat. 66-202, annual).

We began to co-ordinate the two initiatives with the intention of eventually combining them, and initiated visits to game agencies to discuss the kind of additional information we believed to be important.

I selected agencies to visit by a more or less random method; by combining such visits with travel for other purposes. Discussions have been held with the following, given below in chronological sequence: Nova Scotia: Merrill Prime; Manitoba: Richard Goulden; British Columbia: Glen Smith; Newfoundland: Dave Pike; Alberta: Dave Neave; Quebec: Gaston Moisan; Ontario: Donald Johnston.

In most cases those gentlemen were supported by members of their staffs. I was sometimes accompanied by Mr. Chadwick and usually by a member of the CWS regional staff.

Results to date

The results to date are encapsuled in the attached table layout, and in the general principles or premises given below, which I believe to represent the consensus:

1. We need a format acceptable to all agencies, and agree to place that objective ahead of precipitate action to publish.
2. We want to work towards a record of data needed to evaluate economic and social values of wildlife, rather than to perpetuate traditional records merely because we may have a longer series of them.
3. We will continue to cooperate with Statistics Canada (Mr. Chadwick) in the program of collection and publication of licence data, and to amalgamate the two programs when our "non-dollar" data system becomes operational.

Current and continuing action

It seems reasonable to circulate results achieved to date, because Mr. Chadwick is temporarily "out of action" following surgery and will be unable to travel for a month or so, and the table format I started with has been changed beyond recognition! Every detail is now based on a suggestion of one or more of the 15 or 20 people who have examined it. Any further modification must inevitably alter or reverse somebody's contribution.

For those reasons I am circulating the latest draft of the table format we now have, with a detailed description of the rationale behind it.

The subject is in no way a closed one. We will welcome discussion and suggestions, particularly from the territories and provinces not yet visited.

Discussion may be by letter, by telephone, or if you wish, I will visit your office for more detailed discussions.

We hope to achieve agreement in time to present a final table format at the 37th Federal-Provincial Conference in July. If we do not achieve full agreement by then, discussions can continue for another year, but I am sure we all hope to get the system into operation in 1973 if at all possible.

Title

As short and succinct a title as we have been able to produce.

Column headings

Kind

The finest break-down in the row headings is a kind of animal or bird defined as game. It was thought that "species" was too pretentious, and some of the headings contain more than one

Table 1
Numbers of participants, man days of recreation and harvest of game animals and birds, 1972-73

Kind	1972-73			
	Number of licences/ permits issued	Number of actual participants (active hunters) 1 day or more	Man days of recreation	Number harvested
Newfoundland	(1)	(2)	(3)	(4)
Big game				
Moose				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Caribou				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Total big game				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Small game and upland game birds				
Snowshoe hare				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Ptarmigan				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Ruffed Grouse				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Other small game and upland game birds				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Total small game and upland game birds				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Total provincial hunting licences/permits				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				

Table 1 (continued)
Number of participants, man days of recreation and harvest of game animals and birds, 1972-73

Kind	1972-73			
	Number of licences/ permits issued	Number of actual participants (active hunters) 1 day or more	Man days of recreation	Number harvested
Newfoundland	(1)	(2)	(3)	(4)
Migratory game birds (federal permits)				
Ducks				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Geese				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Woodcock				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Snipe				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Others (Cranes, Band-tailed Pigeons, Gallinules etc.)				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				
Total migratory game birds				
Resident of province				
Other Canadian resident				
Non-resident of Canada				
Total				

species. We have achieved brevity, and there is a precedent for use of the word in the Statistics Canada publication, Fur production (Cat. 23-207, annual).

Number of licences/permits issued (column 1)

This is a crude measure of participation, but it is available for various kinds of game, or for sub-headings (big game; small game and upland game birds; and migratory game birds).

You will notice that we have not got a column for licence revenue. It was omitted because we are not yet sure whether the same row headings will be suited to dollar and to non-dollar values. Statistics Canada will continue to collect and publish those data and we will eventually combine them with non-dollar data, or publish them in separate tables, whichever turns out to be more practical and efficient.

Statistics Canada will eventually collect all the data at one time each year to prevent duplication.

Number of actual participants (active hunters) 1 day or more (column 2)

This heading is the longest and, since the grammar is poor, it is not going to be easy to translate. However, it is explicit. It is the true measure of participation. Perhaps somebody can suggest a better wording?

There was a considerable amount of doubt expressed over the ability of game agencies to provide the data. However, in line with the concensus, it was thought the data were needed, and that we should try to obtain them. Several agencies suggested that they could arrive at reasonable estimates which could be identified by footnotes to show the level of accuracy achieved (see footnotes on accuracy on page 35.)

Man days of recreation (column 3)

Since game is not ordinarily bought and sold on the marketplace, it has no market price in dollars. Game is not the "product" we are "selling". The product of game management we are concerned with here is the man day of recreation. It is definable and it is quantifiable. It is at the heart of many current attempts to arrive at the economic values of wildlife.

A man day of hunting cottontails in southern Ontario may not be as highly valued as a day after big game in the Yukon or caribou in Newfoundland; but values can be assigned to any kind of hunting in any area.

It was generally agreed that if our economists and sociologists are to estimate economic and social values, we have to provide them with the basic data.

Number harvested (column 4)

This column, like column 1, is likely to be fairly easy to fill. The harvest is management information, and is estimated by most game agencies for the major species groups, and for most individual species.

The data may be used as a social or environmental quality indicator; as a general reflection of the status and productivity of managed wildlife populations; and as a base for computing the dollar value of meat produced—a part of any complete economic evaluation.

The order of the columns

Even the order in which the columns are arranged is the result of a discussion of the theory of table layout, and of human psychology.

The first and last columns (1 and 4) are likely to be the most complete, and will "frame" the final table. Those columns dealing with participants (1 and 2) are placed together. Man days of recreation precedes the number harvested (3 and 4) to stress the priority of recreation as our major product.

Row Headings

Major headings—province or territory

Each province and territory is unique in its complement of game species. Each will provide its information independently. No other major breakdown was considered practical.

Only one province is shown on the attachment, and even for it, the list of species may not be complete; it is given as an example only.

The final table will have a major heading, Canada, which will be the total for all provinces and territories, and will include all kinds of game as defined by all agencies.

Sub-headings—species groups

These sub-headings are designed to provide a place for estimates for species groups. If estimates are not available for individual kinds of game separately, an estimate for the group can be used.

Big game is probably the most clearly defined group, though we may have some agencies calling deer "big game", and some that class them as "small game". Such problems we can resolve as they arise.

Small game and upland game birds have been combined. Some provinces issue licences that cover both those groups. It was thought better to have a single sub-heading for which data are available, rather than two sub-headings, neither of which could be used by all source agencies. For any agency that can provide full information on all kinds of small game and upland game birds, totals for each will be obtainable from the table by simple addition, so nothing is lost by use of a single sub-heading.

Migratory game birds are listed in some detail to indicate the break-down that can be supplied by the CWS, from the permit and survey system. That system was designed to produce results on a provincial basis. We are unable to provide estimates for the territories. The logistics of permit sale and mail surveys in the territories have proved insurmountable.

Minor headings—kinds of game

The form on pages 32, 33 is a sample only. When

we achieve an agreed-upon format, we will ask each agency to give us a list of those species defined as game in their game act. There may be some cases where more than one species is included as a single "kind" of game. Examples exist in the CWS data. We have listed ducks, geese, and other.

The use of provinces and territories as major headings allows a great deal of freedom to agencies in their choice of minor headings.

Resident—non-resident break-down

A three-way break-down was arrived at to give as complete a picture as was possible, while also meeting the needs of agencies that use two-way break-downs; either all Canadians and non-resident aliens, or provincial residents and all out of-province hunters. In each case, two row headings can be bracketed.

Some agencies need all three categories for information on reciprocal licensing between provinces, and because of price differences in licences, mainly for non-resident aliens.

Mr. Chadwick is using four categories in his request this year for data on "sales of, and revenue from, hunting and fishing licences and permits". His fourth category, "Total non-resident of province" is the sum of "Other Canadian residents" and "Non-residents of Canada". He is using it as a convenience to some agencies providing data. I raise that point merely to assure you we are still on the same wave-length, and are working toward uniformity of the final published data.

Footnotes

Those listed are samples of what will be required. An example of what can happen in practice can be seen at the bottom of Table 8.7, page 95 of the Travel, tourism and outdoor digest.

Reminders of other inconsistencies, or points needing emphasis in footnotes would be welcome.

Footnotes

The following footnotes will probably be inserted, keyed to relevant column headings, row headings, or entries:

Re sources

Provincial, territorial and federal publications and reports would be given as references (e.g. B.C. game questionnaire analysis, CWS report series, etc.)

Re accuracy

Proposed footnotes to indicate accuracy of data are:

1. Administrative records (e.g. column 1)
2. Sample surveys (statistical estimates) (e.g. column 4)
3. Management estimates

Others

In this table, "province" includes territories, and "provincial" includes "territorial".

In many cases, more than one species of game may be hunted under a single licence. As a result, totals for a species group are often less than the sum of the sub-totals given for each species.

Many federal permit purchasers will also be holders of provincial licences. Purchase of a federal permit does not release a hunter from the licence requirements of provincial game acts.

These data are derived from holders of licences and permits. They do not include data on harvest by native peoples.

A man day of recreation is defined as one day on which one person hunted for one hour or more.

The period covered by these records is the year ending March 31 (or December 31, or other).

Wildlife statistics and socio-economics: Landowner — Wildlife relationships: A preliminary legal study[1]

Andrew R. Thompson Research Ltd.[2]

Table of contents

I. Introduction

Law is the mechanism by which wildlife management responsibilities and policies are authoritatively articulated and made enforceable. Consequently these policies are encountered by the public mainly in the form of statutes and regulations. Attitudes toward wildlife and wildlife management are shaped by the law; yet the law is also the reflection of deeply-ingrained public attitudes toward wildlife, hunting, and wilderness.

Perhaps the best example is the traditional view of wildlife as a free good, or, in economic parlance, a "common property resource", with the consequent public "right" to hunt wild game. This view is fully reflected in Canadian law and has been since colonial times. Yet societal changes are occurring that make this traditional view difficult to maintain and difficult to enforce through the medium of existing laws.

These changes are the result of a number of factors: exponential increases in population; geometric increases in natural resource use including land for primary resource exploitation and for residential and commercial structures; and accelerating technological innovation with consequent environmental pollution.

One major change is the rapidly increasing alteration and destruction of wildlife habitat in Canada. Prairie has been broken and forests cleared for farmland, cities, airports, roads, railways and mines. Streams have been dammed and valleys flooded for hydro; forests have been clear cut, and pipelines and transmission lines have been constructed. All of these activities have altered and continue to alter ecological systems. Populations and ranges of wildlife species are affected as habitat is altered.

The majority of Canadians now reside in cities. The populations of these urban centres are rapidly expanding. Consequently areas in and around urban centres are especially subject to pressure for uses that are likely to alter or destroy wildlife habitat. And the number of persons hunting and seeking other wildlife experiences is rapidly increasing. Therefore urban and near-urban areas are of special interest in considering the legal framework for landowner-wildlife relationships.

A second major area of change is not merely physical. Attitudes of a significant number of Canadians regarding the social acceptance and morality of hunting appear to have undergone considerable change in the last decade. It has become quite clear that the hunter with a freshly killed carcass on his fender cannot expect universal warrior-hunter adulation. Rather, he can expect very pointed questions from some on-

[1]A study prepared for Canadian Wildlife Service.
[2]Andrew R. Thompson and Alastair R. Lucas.

lookers about his motives and purposes and the morality of his deed.

The recreational and educational aspects of hunting are receiving much more attention than in the past. In fact, a rapidly growing group of "naturalists" is becoming a significant force in wildlife related activities. They will have to be allowed more consideration and involvement in future wildlife management decisions. This changing hunting ethic requires attention in any review of the legal framework for landowner-wildlife relationships.

Several essentially legal problems run through these wildlife management issues:

First, the legal nature of wildlife—"common property" until reduced to possession by kill or capture—underlies the whole structure of public hunting, with its vital problem of access to land.

Second, the legal concepts of landownership, including the laws of trespass and licence, are the basis for adjusting the rights of private landowners and hunters.

Third, the various resource uses causing stress on wildlife populations (including hunting) are authorized, regulated, and sometimes encouraged by a series of statutes, regulations and court decisions.

Fourth, laws, ranging from the British North America Act, 1867 to municipal bylaws, establish political and administrative boundaries for ownership and regulation of public property, including wildlife and wildlife habitat.

II. Objectives and methodology

In order to analyze the general problems outlined above, a thorough understanding of the existing legal framework is an essential first step. Since Canada is a federal country, this step requires a comparative review of wildlife and game management laws both of Canada and of the 10 provinces. Selective examination of laws in Europe and the United States will provide further bases for comparison and evaluation. The first operation in a legal study of this kind is identification of relevant literature, statutes and regulations. That has been the specific objective of this preliminary study.

Statutes and regulations of the federal government and of all the provinces were reviewed. The objective was to locate provisions that concern, or could potentially concern, landowner-wildlife relationships. In carrying out the review, a wide range of alternative policy approaches was kept in mind.

For example, many potential financial, management or research subsidy provisions were identified on the assumption that use of these methods to encourage private game management is a possible alternative. Consequently, the range of legislation identified and summarized is very wide. A complete list of legislation identified by jurisdiction forms appendix A to this report.

Relevant statutes were noted on index cards and specific provisions summarized. In addition, in many cases an explanatory note regarding manner and circumstances in which provisions might bear on landowner-wildlife relationships was considered necessary. Complete sets of cards were prepared for each province and for Canada. In addition, files were developed for major statutes, such as Game and Wildlife Acts.

These will allow legislation bearing on a particular issue to be easily identified for each jurisdiction, and for comparisons to be made quickly. It is anticipated that the contents of the cards and the key word system itself will be refined as experience in using the cards is gained, and that ultimately the cards will be printed in final form to provide an invaluable landowner-wildlife bibliography. A list of key words presently used forms appendix B to this report.

The following sample card illustrates the method in detail:

Index card system—

The federal acts, the territorial ordinances, and the acts and regulations of each province were summarized separately in alphabetical order on 5 x 8 index filing cards.

Example

Title (e.g., *Ecological Reserves Act*, S.B.C., 1971, c.16)	Key terms noted. (Cross-referenced to key-word index)

1. Relevant definitions or explanations made in the Act.
2. Body of the Act, and possible pertinent sections summarized.
3. Relation of the Act to problems of wildlife management and alternative private land use.
4. Relevant regulations under the Act, if any.
5. Reference to other related federal or provincial acts.
6. Cross reference to bibliography, journals, texts, papers, or newspaper clipping files on the topic.

III. Legal parameters

The laws identified in the review can be classified in a number of ways. The following headings seem most appropriate to the range of problems associated with landowner-wildlife relationships.

1. Constitutional context.
2. Native rights.
3. Legal framework for existing landowner-wildlife operations.
4. Constraints on landowner-wildlife actions.
5. Trespass and other access controls.
6. Relation of Crown lands to private lands.
7. Species preservation and protection.
8. Habitat preservation and protection.
9. Enforcement techniques and policies.
10. Present potential for economic returns from wildlife management.
11. Legal authority for landowner subsidies and technical and research assistance to support wildlife management.

Each of these areas requires brief comment.

1. Constitutional context

The basic division of powers between Canada and the provinces is governed by the British North America Act, 1867. Wildlife and game is not specifically mentioned therein. However, provincial property in Crown lands[1] and jurisdiction in relation to "property and civil rights in the province"[2] give the provinces primary authority. Federal authority is paramount where public property is vested in Canada, as in the cases of the Northern Territories, National Parks, the marine belt[3] and other federally reserved lands.[4]

But even with respect to provincial lands, there is still a significant federal jurisdiction over wildlife management. The main area (apart from fisheries) is migratory birds under the 1916 migratory birds convention with the United States.[5] There are less obvious federal interests as well; for example, in protection and preservation of native cultures,[6] in conducting basic and applied research[7] and in the criminal law.[8] There is also a legitimate federal interest in funding and otherwise assisting wildlife management in the provinces.[9]

The limits of these federal interests are not clear. Even such fundamental questions as the extent of federal jurisdiction in relation to migratory birds cannot be easily answered. To what extent, for example, can Canada extend its migratory waterfowl regulatory powers which are based on a now-extinct head of federal power?[10] Federal authority can be extended by negotiating the purchase or lease of provincial or private lands for wildlife management purposes. But can Canada expropriate such lands? If so, in what circumstances and on what conditions? These are questions that should be the subject of detailed study.

2. Native rights

Indians and lands reserved for Indians are federal responsibilities under the B.N.A. Act.[11] Many native people continue to maintain the traditional way of life based on hunting and trapping. Certain treaties recognize this very special interest of native people in wildlife. In addition vast areas of land not the subject of treaties have traditionally been hunted by aboriginals. Special provisions dealing with the hunting rights of natives are contained in the Yukon Act and in the Northwest Territories Act.

Other federal statutes (especially the Migratory Birds Convention Act) and provincial game

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1. B.N.A. Act, section 109.
2. Id., section 92(13).
3. There is still some uncertainty on this subject: see Re Offshore mineral rights of British Columbia, [1967] S.C.R. 792. Ownership of offshore resources on the east coast is particularly unclear: see G.V. LaForest, Natural resources and public property under the Canadian Constitution, ch. 6 (1969).
4. For example, defence reservations and certain public harbours.
5. See Migratory Birds Convention Act, R.S.C. 1970, c.M-12.
6. B.N.A. Act, section 91(24), Indians and lands reserved for Indians.
7. Id., section 91(6), The census and statistics.
8. Id., section 91(27).
9. See D. V. Smiley, Conditional grants and Canadian federalism, ch. 2 (1963).
10. The Migratory Birds Convention Act is authorized by section 132 of the B.N.A. Act, which empowers the Dominion to legislate to implement "British Empire Treaties". Since Canada has now achieved full nationhood she enters into treaties in her own right and not as part of the Empire. Therefore the section 132 power is now spent except as regards old Empire treaties: see A.-G. Canada v. A.-G. Ontario (The labour conventions case), [1937] 1 W.W.R. 299 (P.C.); in re: Regulation and control of radio communication, [1932] 1 W.W.R. 563 (P.C.).
11. B.N.A. Act, section 91(24).

and wildlife regulations appear on their face to conflict with native hunting and trapping rights. These conflicts have been the subject of much litigation. The cases have been fully reviewed in the literature. [12] But the recent decision of the Supreme Court of Canada in Calder v. A.-G. of B.C. [the Nishga Case] [13] gives a renewed significance to aboriginal rights in Canada. The implications of this decision deserve special study.

Apart from the question of the extent to which Indian hunting rights have been abridged by federal or provincial legislation, there are still unresolved constitutional questions concerning the validity of such legislation. To what extent can Canada manage wildlife in provinces in furtherance of its responsibility for "Indians and lands reserved for Indians"? Possibly of greater importance, what are future relations between native persons and wildlife likely to be if new arrangements are made in settlement of aboriginal claims?

3. Legal framework for existing landowner-wildlife operations

The statutes of most Canadian provinces neither authorize nor prohibit landowner "pay hunting" or other wildlife management for economic gain. [14] Some provincial wildlife acts do make specific provision for certain private hunting operations such as pheasant preserves, and include fairly detailed requirements as to size, location, season and release of game birds. However, other types of private hunting operations are not specifically mentioned. Consequently a clear picture of the legal basis for these operations can be obtained only through a series of case studies of particular ventures.

Various types of arrangements should be investigated ranging from formal commercial hunting preserves [15] to clubs and societies dedicated to wildlife-related activities such as sanctuary maintenance. These field studies would not only fill in the statutory gaps, but also would disclose the less obvious legal constraints and indicate the needed regulatory requirements for various types of private wildlife management situations. Types of direct and indirect subsidies available (if any) might also be identified through case studies.

Another subject for future study is that of landowner liability—e.g., for damage caused to adjoining property by managed wildlife or by paid hunters; [16] for injury to paid hunters, to trespassers, to hunters with mere permission, etc. Use of insurance to meet these problems should be investigated.

4. Constraints on landowner-wildlife actions

Statutes identified suggest a range of constraints on various types of private wildlife operations. At one extreme are outright prohibitions against selling shooting rights and against operating game farms on a paid-admission basis.

Other constraints are less obvious. These include air and water pollution approvals and licences that may affect the land; powers of expropriation that might be used to take all or part of the land or seriously damage it by construction of pipelines or hydro transmission lines; public health regulations and game import regulations

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12. See P. A. Cumming & N. H. Mickenberg, Native rights in Canada, (2nd ed. 1972).

13. Unreported, Supreme Court of Canada, January 31, 1973.

14. Only Saskatchewan has an absolute prohibition. Section 53 of the Game Act, S.S. 1967, c.78 states: "53. No person shall directly or indirectly sell, trade or barter or offer for sale, trade or barter the hunting or shooting rights for game over any land." Several statutes contain similar general prohibitions, but specifically except the operation of pheasant or game bird preserves under licence from the management authority. See the Alberta Wildlife Act, R.S.A. 1970, c.391, s.23 (licenced Pheasant farms excepted); the New Brunswick Game Act, R.S.N.B. 1952, c.95, as am., ss.21(2), 71A (game bird farms excepted). Section 55 of the Ontario Game and Fish Act prohibits operation of a game bird hunting preserve except under licence (R.R.O. 1970, Reg. 368). The sale of rights to hunt other game is not specifically prohibited.

15. E.g., under several of the U.S. statutes reviewed, See appendix C.

16. E.g., in Epstein v. Reymes, (1972) 29 D.L.R. (3d) 1, the Supreme Court of Canada held the operator of a licenced Ontario game bird hunting preserve liable in nuisance to an adjoining landowner, for damage caused by noise, and birds and dogs straying from the preserve. An injunction was granted that had the effect of shutting down the preserve. The court was satisfied that a limited injunction granted by a lower court that required erection of a fence and allowed hunting only up to a distance from the adjoining land necessary to prevent shot entering, was not sufficient. The evidence showed that a five strand barbed-wire fence had not kept birds and dogs out and that the noise had continued unabated.

that may restrict or prohibit the acquisition of certain species or their exhibition to the public; and municipal bylaws, including zoning that may authorize incompatible use of adjoining lands. The incidence and practical effect of these statutory constraints must be determined for the various provinces and then tested through case studies.

5. Trespass and other access controls

Trespass prohibitions were identified for most jurisdictions. Even in their absence, the common law tort of trespass is still available, though the nature of the legal process (formal civil litigation) and the remedy available probably make it ineffective in practice against the very mobile hunter.

The important problem here is enforcement. What are the preconditions for a trespass prosecution? Is posting of the land required, for example, and if so, what are the details? What enforcement mechanisms are provided? Some statutes for example, allow private apprehension.[17] Does the wildlife or game agency have enforcement responsibilities? If so, are these discretionary or can the agency be compelled to act? If so, by whom, and by what procedure?

There are other related problems. What restrictions, if any, are put on use of private or quasi-public access routes such as logging or mining roads that may provide convenient access to private lands?[18]

6. Relationship of Crown lands to private lands

Private holdings are often too small or, even if large, may not sufficiently cover the range of particular species to constitute viable wildlife management areas. Consequently it may be necessary to lease Crown lands to make up a viable unit. Models for mixed public-private land units controlled by a detailed management agreement exist in other resource legislation. Some examples are grazing leases and permits, and tree farm licences under the British Columbia Forest Act.[19] The applicability of these models to wildlife and game management requires further investigation.

Provisions for simple acquisition by lease, licence or otherwise of exclusive hunting rights over Crown land by clubs were also identified. Ontario and Quebec statutes are good examples.[20] But how extensive these areas are, or what problems of enforcement of trespass regulations, or use conditions they create in practice is not clear (apart perhaps from the well-documented clubbing controversy in Quebec). These problems might also be the subject of further study.

7. Species preservation and protection

Statutes for the protection of species, ranging from international treaties like the Migratory Birds Convention to the game and wildlife Acts in each province, lie at the foundation of wildlife management policies in Canada today. Any steps toward greater involvement of private landowners in wildlife management must be carefully integrated into this existing legislative framework.

8. Habitat preservation and protection

Statutes that contribute to habitat preservation and protection fall into several classes:

First, there are many pure preservation measures, including the National Parks Act, the various provincial park acts and statutes (often the provincial game or wildlife acts) authorizing establishment of game and wildlife preserves and refuges. A recent British Columbia statute allows Crown land to be designated as "ecological reserves";[21] many statutes (including the proposed Canada Wildlife Act) allow government agencies to acquire lands for wildlife protection or management by purchase or otherwise.

Second, many statutes governing exploitation or use of other resources contain regulatory provisions that might potentially be used to minimize adverse effects on wildlife habitat. For example, habitat protection could be established as one approval criteria under forestry legislation that requires Forest Service approval of cutting plans. However, express statutory guidelines are rarely set out, and therefore the matter becomes solely

17. E.g., The Petty Trespass Act, R.S.A. 1970, c.273, s.5.

18. There is strong public resistance to restrictions on public use of industrial roads on public lands. There have been numerous controversies of this type in British Columbia recently. E.g., Gang Ranch control of access to grazing lease and grazing permit areas: The Vancouver Sun, March 16, 1973 at 1; Darkwoods Forestry Ltd. control of access to Tree Farm 40 in the Kootenay region: The Vancouver Sun, August 29, 1972 at 17.

19. R.S.B.C. 1960, c.153, s.36.

20. E.g., Fish and Game Clubs Act, R.S.Q. 1964, c.204.

21. The Ecological Reserves Act, S.B.C. 1971, c.16.

one of agency policy. The extent to which wildlife values are considered in decisions by other resource managers might be an important study in itself.

Third, environmental quality control statutes, including air and water pollution control measures and surface reclamation requirements will, if effective, enhance and protect habitat whether private or public property. From the standpoint of the private landowner who is interested in preserving habitat, these controls can be regarded as constraints to the extent that they in fact authorize environmentally degrading activities (for example, under pollution control approvals or permits, zoning measures, etc.).

9. Enforcement techniques and policies

Enforcement is crucial to the success of any regulatory scheme. If regulations are ignored by hunters, other resource users, landowners or game managers, game and wildlife management programs will fail no matter how basically correct, well funded and well administered. This is particularly important as regards access controls.

Only a limited examination of this enforcement problem can be achieved through a review of statutes and regulations. It is possible to see whether sanctions are provided and what type, and whether enforcement officers are designated and what their duties are. It is also possible to determine whether an agency can be compelled by judicial process to enforce its regulations.

But, in the usual case, where the statute merely confers a discretion to enforce or to investigate, incidence and effectiveness of enforcement can be determined only by empirical methods. Case studies should be undertaken in selected enforcement situations. Practices should be compared with practices and policies in other jurisdictions (especially United States jurisdictions such as Texas, and European countries such as Germany). This study may be the key to the question of whether or not private game management operations are feasible in high population areas.

10. Present potential for economic returns from wildlife

Property owners' exclusive right to possession of their lands provides the theoretical security of tenure necessary to market rights to hunt, photograph, etc. wild animals. On their land they hold a property interest related to wildlife in the nature of a profit à prendre—the exclusive right to pursue, kill and capture. [22] There would seem to be no absolute prohibition against marketing this interest, or lesser interests such as licences, in any province except Saskatchewan.[23]

This exclusive right will be subject to all valid provincial and federal wildlife regulations. But this security of tenure may only be theoretical, depending on the nature and enforcement of access limitations, especially trespass laws.

11. Legal authority of landowner subsidies

A wide range of agricultural, industrial and tourism-promotion subsidy provisions were identified at both federal and provincial levels. These include all types of assistance, from cash grants and loans to technical advice and research support. Many of these powers would seem to be wide enough to allow support of private wildlife management. Some of the most appropriate programs should be investigated further to determine present policies and possibly obtain indication of future policy directions as regards private wildlife and game operations.

IV. Conclusion

A major aim of this preliminary study was to identify legal parameters of landowner-wildlife relationships that require further detailed research. Now that these parameters have been revealed, such second-stage research should be undertaken.

Appendix A

Canadian statutes relevant to landowner-wildlife relationships

Acts of the Parliament of Canada

Agriculture and Rural Development Act
Animal Contagious Diseases Act
Canada Wildlife Act
Cape Breton Development Corporation Act
Criminal Code Act
Department of Energy, Mines and Resources Act
Department of the Environment Act
Expropriation Act
Fisheries Act
Department of Fisheries and Forestry Act
Fisheries Development Act

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22. Though property owners have no property in the wildlife itself, as they do in tame domestic animals. See C. Vaines, Personal Property, 381-82 (4th ed., 1967).

23. See note 13, supra.

Fitness and Amateur Sport Act
Forestry Development and Research Act
Game Export Act
Hay and Straw Inspection Act
Indian Act
Department of Indian Affairs and Northern Development Act
Land Titles Act
Canada Land Surveys Act
Livestock and Livestock Products Act
Maritime Marshland Rehabilitation Act
Migratory Birds Convention Act
National Parks Act
Navigable Waters Protection Act
Northern Inland Waters Act
Northwest Territories Act
Pest Control Products Act
Prairie Farm Rehabilitation Act
Public Lands Grants Act
Public Works Act
Department of Regional Economic Expansion Act
Resources and Technical Surveys Act
Canada Shipping Act
Territorial Lands Act
Yukon Act
Yukon Placer Mining Act
Yukon Quartz Mining Act

Ordinances of the Northwest Territories

Commissioner's Land
Explosives Use
Expropriation
Fur Export
Game
Pollution of Streams
Scientists and Explorers
Travel and Outdoor Recreation
Vehicles

Ordinances of the Yukon Territory

Area Development
Blasting
Expropriation
Fitness and Amateur Sports
Fur Export
Game
Hotel and Tourist Establishments
Yukon Lands
Scientists and Explorers

British Columbia

Accelerated Park Development Act
Agricultural Rehabilitation and Development (B.C.) Act
Agrologists Act
Air Space Titles Act
All-Terrain Vehicles Act
Animals Act
Assessment Equalization Act
British Columbia Government Travel Bureau Act
Creston Valley Wildlife Management Area Act
Department of Highways Act
Department of Industrial Development, Trade and Commerce Act
Department of Lands, Forests, and Water Resources Act
Department of Public Works Act
Department of Recreation and Conservation Act
Ecological Reserves Act
Environment and Land Use Act
Grazing Act
Green Belt Protection Fund Act
Health Act
Highway Act
Highway Development Act
Highways (Scenic Improvement) Act
Land Act
Litter Act
Local Services Act
Mines Right-of-way Act
Municipal Act
Municipal and Improvement District Rehabilitation and Development Act
Municipal Treatment Plant Assistance Act
Municipalities Aid Act
Noxious Weeds Act
Parks Act
Pipe Lines Act
Placer Mining Act
Plant Protection Act
Pollution Control Act
Power Act
Power and Telephone Line Beautification Fund Act
Railway Act
Regional Parks Act
River-Bank Protection Act
Seed-Growers' Protection Act
Sheep Protection Act
Society for the Prevention of Cruelty to Animals Act
Soil Conservation Act
Water Act
Wildlife Act

Alberta

Agricultural Chemicals Act
Agricultural Pests Act

Agricultural Relief Advances Act
Agricultural Service Board Act
Agricultural Societies Act
Agrologists Act
Alberta Natural Resources Act
Animal Protection Act
Clean Water Act
Department of Agriculture Act
Department of Culture, Youth and Recreation Act
Department of the Environment Act
Department of Highways and Transport Act
Department of Industry and Tourism Act
Department of Lands and Forests Act
Domestic Animals (Municipalities) Act
Environmental Research Trust Act
Energy Resources Conservation Act
Environment Conservation Act
Expropriation Procedure Act
Farmers' and Womens' Institute Act
Forest Act
Federal-Provincial Farm Assistance Act
Forest and Prairie Protection Act
Frozen Food Act
Fur Farms Act
Line Fence Act
Municipal Government Act
Northern Development Act
Noxious Weeds Act
Petty Trespass Act
Pipe Line Act
Planning Act
Power Commission Act
Private Roads Act
Provincial Parks Act
Public Health Act
Public Highways Development Act
Public Lands Act
Recreation Development Act
Snow Vehicles Act
Soil Conservation Act
Special Areas Act
Water, Gas, Electric and Telephone Companies Act
Water Resources Act
Wilderness Areas Act
Wildlife Act
Willmore Wilderness Park Act

Saskatchewan

Agricultural Development and Adjustment Act
Agrologists Act
Air Pollution Control Act
Animal Protection Act
Community Planning Act
Conservation and Development Act
Department of Agriculture Act
Department of Co-operation and Co-operative Development Act
Department of Culture and Youth Act
Department of the Environment Act, 1972
Department of Natural Resources Act
Department of Northern Saskatchewan Act, 1972
Department of Public Health Act
Expropriation Act
Family Farm Improvement Act
Farming Communities Land Act
Farm Loans Act
Fire Prevention Act
Forest Act
Game Act
Highways Act
Human Resources Development Act, 1972
Industry and Commerce Development Act, 1972
Land Bank Act, 1972
Line Fence Act
Litter Control Act
Municipal Expropriation Act
Municipal Industrial Development Corporation Act
Municipalities Relief and Agricultural Aid Act
Northern Saskatchewan Conservation Board Act
Noxious Weeds Act
Pest Control Act
Pollution (by Live Stock) Control Act, 1971
Provincial Arms Act
Provincial Lands Act
Provincial Parks, Protected Areas, Recreation Sites, and Antiquities Act
Public Health Act
Regional Parks Act
Sheep Protection and Dog Licensing Act
Stray Animals Act
Water Pollution Control Assistance Act
Water Resources Management Act, 1972
Water Users Act
Wolf and Coyote Bounty Act

Manitoba

Agricultural Credit Corporation Act
Agrologists Act
Animal Diseases Act
Animal Husbandry Act
Boundary Lines and Line Fences Act
Clean Environment Act
Crown Lands Act
Department of Agriculture Act
Expropriation Act
Fisheries Act

Fisherman's Assistance and Polluter's Liability Act
Fitness and Amateur Sport Act
Forest Act
Ground Water and the Drilling of Wells for Ground Water Act
Highways Protection Act
Land Acquisition Act
Land Rehabilitation Act
Land Surveyors' Act
Livestock and Livestock Products Act
Mines and Natural Resources Department Act
Municipal Board Act
Natural Products Marketing Act
Manitoba Natural Resources Act
Commissioner for Northern Manitoba Act
Noxious Weeds Act
Provincial Parks Act
Pesticide Control Act
Petty Trespasses Act
Planning Act
Predator Control Act
Department of Public Works Act
Resource Conservation Districts Act
Rivers and Steams Act
Snowmobiles Act
Department of Tourism and Recreation Act
Veterinary Services Act
Watershed Conservation Districts Act
Water Commission Act
Water Control and Conservation Branch Act
Water Resources Administration Act
Water Power Act
Water Rights Act
Wildlife Act

Ontario

Agricultural Development Act
Agricultural Rehabilitation & Development Act
Air Pollution Control Act
Animals for Research Act
Archeological & Historical Sites Protection Act
Assessment Act
Beach Protection Act
Beds of Navigable Waters Act
Conservation Authorities Act
Cooperative Loans Act
Crown Timber Act
Dead Animal Disposal Act
Department of Agriculture & Food Act
Department of Energy and Resources Management Act
Department of Health Act
Department of Highways Act
Department of Tourism and Information Act
Department of Trade and Development Act
Drainage Act
Dog Tax & Livestock and Poultry Protection Act
Environmental Protection Act
Expropriations Act
Farm Loans Act
Farm Products, Grades & Sales Act
Farm Products Marketing Act
Forest Fires Prevention Act
Forestry Act
Game and Fish Act
Gas and Oil Leases Act
Highway Improvement Act
Hunter Damage Compensation Act
Lakes and Rivers Improvement Act
Line Fences Act
Livestock and Livestock Products Act
Local Improvement Act
Meat Inspection Act
Mining Act
Motorized Snow Vehicles Act
Municipal Act
Municipal Tax Assistance Act
Municipal Works Assistance Act
Negligence Act
Northern Ontario Development Corporation Act
Ontario Development Corporation Act
Ontario Municipal Improvement Corporation Act
Ontario Water Resources Act
Parks Assistance Act
Pesticides Act
Petty Trespass Act
Planning Act
Pollution Abatement Incentive Act
Pounds Act
Provincial Parks Act
Public Health Act
Public Lands Act
Public Parks Act
Regional Development Councils Act
Regional Municipal Grants Act
Snow Roads and Fences Act
The Trees Act
Vacant Land Cultivation Act
Warble Fly Control Act
Waste Management Act
Weed Control Act
Wilderness Areas Act
Wolf and Bear Bounty Act
Woodlands Improvement Act

Quebec
Agricultural Abuses Act
Agriculture and Colonization Department Act
Agronomists Act
Amusement Clubs Act
Animal Health Protection Act
Beach Hay Act
Cadastre Act
Cities and Towns Act
Colonization Land Sale Act
Fire Prevention Act
Fish and Game Clubs Act
Forest Resources Utilization Act
Hydro-Quebec Act
James' Bay Region Development Act
Lands and Forest Act
Lands and Forest Department Act
Mining Act
Municipal Fire Fighting Cooperation Act
Municipal Works Act
Natural Resources Department Act
Plant Protection Act
Provincial Parks Act
Public Health Act
Quebec Planning Bureau Act
Railway Act
Roads Act
Tourism, Fish and Game Department Act
Water Board Act
Watercourses Act
Wildlife Conservation Act

New Brunswick
Abandoned Lands Act
Branding Act
Clean Environment Act
Community Improvement Corporation Act
Community Planning Act
Crown Lands Act
Crown Lands for Use as Park in Edmonton Act
Escheats & Forfeiture Act
Expropriation Act
Farm Improvement Assistance Loans Act
Fences Act
Fire Prevention Act
Forest Service Act
Game Act
Health Act
Highway Act
Land Compensation Board Act
Logging Camps Act
Motorized Snow Vehicles Act
National Parks Act
Parks Act
Plant Diseases Act
Tourism Development Act
Tourist Camps & Trailer Camps Act
Tree Preservation Act
Trespasses to Land & Lumber Act
Water Act
Water Resources & Pollution Control Act

Prince Edward Island
Agricultural Chemicals Act
Agricultural Encouragement Act
Agricultural Rehabilitation and Development Act
Agrologist Act
Community Improvement Act, 1968
Division Fence Act
Dog Act
Domestic Animals Act
Electric Power and Telephone Act
Environmental Control Commission Act
Escheats Act
Expropriation Act
Fire Prevention Act
Fish & Game Protection Act
Forestry Act
Land Development Corporation Act
Mink Protection Act
National Park Act
Pesticides & Poisonous Top Killing Spray Control Act
The Planning Act
Plant Disease Eradication Act
Power Commission Act
Power Line Construction Act
Public Health Act
Recreation Development Act
Summary Trespass Act
Town Act

Nova Scotia
Agricultural and Rural Credit Act
Agriculture & Marketing Act
Angling Act
Baby Chick Protection Act
Beaches and Foreshores Act
Beaches Protection Act
Blueberry Association Act
Camping Establishments Reg. Act
Cattle Pest Control Act
Community Act
Ditches & Watercourses Act
Environmental Pollution Control Act
Environmental Protection Act
Escheats Act

Expropriation Act
Expropriation Procedure Act
Fences and Impounding of Animals Act
Fire Prevention Act
Forest Improvement Act
Indians Land Act
Land Action Venue Act
Lands and Forests Act
Marsh Act
Marshland Reclamation Act
Municipal Act
Municipal Affairs Act
Municipal Boundaries & Representation Act
Municipal Corporations Supplementary Powers Act
Municipal Loan & Building Fund Act
Municipal Services Act
National Park Act
Parks Development Act
Pest Control Products Act
Planning Act
Provincial Parks Act
Public Health Act
Resources Development Board Act
Rural Fire District Act
Stray Animals Act
Towns Act
Water Act

Newfoundland
Abandoned Lands Act
Administration & Control of Lands of the Crown (Transfer) Act
Alexis Watershed (Timber Operations) Act
Bank Fishermen (Protection) Act
Bowling Park Area Act
Clean Air, Water & Soil Authority Act
Crown Lands Act
Crown Royalties Act
Department of Community & Social Development Act
Department of Mines, Agriculture & Resources Act
Expropriation Act
Family Homes Expropriation Act
Forest Fires Act
Forest Travel Act
Fur Farms Act
Land Development Act
Motorized Snow Vehicles & All-terrain Vehicles Act
National Parks (Lands) Act
Nuisances & Municipal Regulations Act
Pesticides Control Act
Plant Protection Act
Protection of Animals Act
Reservation of Lands to the Crown Act
Transportation of Timber over Streams & Lakes Act
Waters Protection Act
Wildlife Act

Appendix B

Key word set—Canadian landowner-wildlife relationships

A
Agriculture
Area development
Animal
—Contageous diseases of
—Dangerous
—Domestic
—Furbearing
—Liability for
—Mischievous
—Protection
—Running at large
—Sale and possession
—Stray

B
Beaches
Birds
—Licence
—Sanctuary
Birds, migratory

C
Chemicals (agricultural)
Cold storage
Conservation
Contaminants
Crown lands
—Administration of
—Control of
Crown range
Crown timber
Cruelty to animals

D
Damages
Dangerous animals
Development
—Northern
—Parks
—Rural
—Urban
Domestic animals

Appendix C

Selected U.S. state statutes relevant to landowner-wildlife relationships

Texas

Generally: Game, fish and oysters, 2 Texas penal code (Vernons Ann. P.C.) chapter 6.
Art.871a—Wild birds and animals declared property of people of the state.
Art.895abc—Hunting licences.
Art.905—Enforcement of game laws.
Art.908—Hunting on game preserves for pay; licencing; "shooting preserves" and "shooting resorts"; hunting licences; banding; records; licence cancellation.
Art.917—Game preserves.
Art.978-3a—Parks and wildlife department; powers and duties.
Art.978f-4a—Power to exchange lands.
Art.978f-5—Wildlife management areas; regulation of hunting and fishing.
Art.978j—Local fish and game laws—Uniform Wildlife Regulatory Act.
Art.978k—Wild game breeders licence required.

Wisconsin

Generally: Fish and game, Wisconsin statutes and annotated (W.S.A.) 29.01—29.68.
29.02—Legal title to wild animals vested in state.
29.09—
29.165—Hunting, fishing, trapping and guiding licences.

29.57—Authority to establish private wildlife refuge; approval of State Conservation Commission.
29.573—Authority to establish private pheasant farms and shooting preserves; conservation commission control and shooting licences.
29.574—Authority to establish private game bird and animal farms upon conservation commission approval "for the purpose of breeding, propagating, killing, and selling game birds and game animals".
29.578—Authority to establish private deer farms; sale by State to landowner of all deer on the land and their offspring.
29.585—Wildlife exhibit licences from the conservation commission.
29.595—Claims for damage to private property caused by deer or bear; unless lands posted.
29.68—Liability of landowners to recreationists.

California

Generally: California Fish and Game Code annotated (F. & G.C.A.).
Division 1—Fish and Game Commission; powers and duties.
Division 2—Department of fish and game; powers and duties; public wildlife management areas and game farms.
Ch.5,Art.3—Power to contract with landowners for establishment of "cooperative hunting areas" in order to "provide added protection for landowners and lessees from depredations of trespassers and to provide greater access for the public to hunt on privately owned or controlled lands".
s.1571—Department must enforce trespass provisions of penal code within cooperative hunting areas.
Art.4—Establishment of ecological reserves.
Division 4—Birds and Mammals; methods of taking; licences.
Pt.1,Ch.2—Commercial activities.
Art.1—Domesticated game breeding.
ss.3200—3219—licencing, tagging, reports, regulation of sale, etc.
Art.2—Private commercial hunting clubs.
s.3240—Club and club operators licences.
s.3244—Hunting licence required.
s.3245—Term of licence.
s.3246—Revocation of licence.
Art.3—Licenced pheasant clubs.
s.3270—Licence required for pheasant club.
s.3270.5—Game bird club licence where game birds other than pheasants are included.
s.3271—State divided into administrative zones for this purpose.
s.3272—Area limitations on private licenced pheasant clubs.
s.3273—Power to make regulations.
s.3284—Posting required.
s.3287—Compliance with law; inspection by Department.
s.3291—Revocation of licence.
Division 7—Public refuges and other protected areas.
Division 9—Fines and penalties for violation of code provisions, including trespass.

Colorado

Generally: Game, fish and parks, Colorado revised statutes (Col. Rev. Stat.), chapter 62.
62-1-1—Game and fish property of state.
62-1—Game, Fish and Parks Commission established.
62-3—State liability for damage by wildlife.
62-4—Limitation on liability of owner of private recreational area to "encourage owners of land in rural areas to make land available for recreational purposes".
62-10-3—Licencing of private commercial wildlife parks.
62-10-4—Licencing of private commercial big game hunting areas; special hunting licence.
62-10-5—Licencing of private controlled shooting areas for small game.
62-12-23—Offence to hunt or fish on private property.
62-12-28(12)(i)—Penalty for hunting, trapping or fishing on private property without permission —$25.00.

Maine

Generally: Conservation, 6 Maine revised statutes annotated 1964 (M.R.S.A.) title 12, esp. part 2, inland fish and game.
Ch.309—Sanctuaries and preserves.
s.2101—Power of state to designate preserves and sanctuaries even on private land.
s.2103—Authority to purchase lands for game farms.
Ch.311
s.2151—Authority to expropriate lands for game management areas.
Ch.315
s.2254—Regulation of private hunting and fishing camps.
Ch.317—Licences and fees.
Ch.319—Hunting and trapping regulations.

Ch.320—Commercial shooting areas.
s.2471—Licences; revocation.
s.2472—Area and specification of boundaries.
s.2473—Species included.
s.2474-5—Hunting licences and season.
s.2476—Operator to maintain register and records.
s.2480—Enforcement is the responsibility of the owner.

Ch.327
s.2851—Pheasant breeders' licence.
Ch.333—Liability of landowners.
s.3004—No duty on landowner to keep premises safe, and not affected by permission, unless granted for consideration.
Ch.335—Enforcement.

Wildlife statistics and socio-economics: Canadian Wildlife Service research into the social and economic aspects of wildlife management in western Canada

Jonathan P. Secter

The intention of the legislation governing the migratory bird activities of the Canadian Wildlife Service is difficult to interpret in terms of today's wildlife management problems. However, a major policy statement referring to its migratory birds subactivity is that a fundamental aim of the Canadian Wildlife Service is to manage the migratory bird resource for the maximum benefit of existing and future generations of Canadians and others having access to the resource.

As one means to this end we are attempting to assess the social and economic values of migratory birds. We wish to determine the current and potential economic benefits to be derived from different species of migratory birds, by geographic area, and by type of use; the current and potential costs resulting from migratory birds; and the intangible social benefits that migratory birds afford society.

Furthermore, we wish to develop the capability to forecast and monitor trends in the values of migratory birds. All of these objectives have general applications to wildlife management. Techniques developed and data derived can be used by other resource management agencies in implementing wildlife management projects and in assessing costs to wildlife users from resource development projects.

In addition to the specified subactivity objectives we have been identifying, both independently and together with the provinces, questions regarding the human aspects of wildlife management. Included are such questions as:

How do we measure and respond to public demands for use of wildlife resources?
Who are the clientele groups of wildlife management?
What is the demand for non-consumptive wildlife uses?
Who is the Canadian hunter? What motivates him? How efficient is he?
How important are non-resident hunters to local and regional economies?
How does crop depredation control affect hunting opportunity?
How do we measure the effectiveness of wildlife management programs?
Upon what criteria are wildlife management decisions based?
How do we integrate social and economic data into wildlife management decision-making?

This list of questions is not complete but has

provided stimuli to four projects which I will mention briefly.

I. Hunter characteristics, motivations and efficiency

Conducted by Richard Hume, of the department of sociology, University of Saskatchewan, the project objectives are:

1. To determine and compare the socio-economic and socio-cultural characteristics of duck hunters in Saskatchewan and to test for significant differences of these dimensions among hunters allocating different proportions of their total hunting time to various waterfowl species.
2. To assess the efficiency of hunters in terms of birds bagged per unit of effect and to determine the effectiveness of various hunting practices.
3. To determine those factors having a positive and negative effect on the expenditure of hunting effort.
4. To determine those factors which motivate people to take up and discontinue hunting.

This project is related to the Canadian Wildlife Service's simulation model for the management of Mallard Ducks operated at the Prairie Migratory Bird Research Centre, Saskatoon. Included in this model are equations stating sociological, social-psychological, and efficiency hypotheses about duck hunters. Data from Mr. Hume's study will contribute to the predictive functioning of the model by establishing what factors influence the amount of hunting activity and hunting success relative to effort. The collection of background data about hunters provides immediately useful information about how hunters behave and allows the possibility of predicting how many hunters there might be in the future.

II. Economic and social impact of non-resident hunters

The objective of this study is to develop an investigative design for the assessment of:

1. The economic impact of non-resident hunters on local and regional economies.
2. The attitudes of local residents toward non-resident hunters.
3. The attitudes of the non-resident hunters toward local communities, facilities and regulations as they affect the hunting experience.

The study is designed to measure and compare perception of hunter activity by all residents of a region to the actual hunter activity within that region. Hunters are considered in four groups: aliens; non-resident Canadians; provincial residents from outside the region; and residents of the region. The procedure developed will, if applied, provide wildlife management agencies with the necessary information for use in managing an increasing influx of non-resident hunters in various areas of Canada.

The pilot design focuses on the non-resident goose hunter in west-central Saskatchewan. Data were collected by an independent contractor in autumn of 1972 and are now being analysed in the College of Commerce at the University of Saskatchewan. Such a method, when modified, is applicable to the investigation of non-resident deer or moose hunters, for example, in various local hunting situations throughout Canada.

III. Evaluation of the migratory bird resources of Saskatchewan

An interdisciplinary study on needs, values, and aspirations of Canadians for migratory bird resources is being conducted at the Institute of Northern Studies, University of Saskatchewan. My colleague, Doug Schweitzer, the project coordinator, is here with us today and will spend some time elaborating on the procedures and findings of this study and on their applications to wildlife management.

The objectives of this two-phase study are:

Phase I (social)

1. The definition of the products of wildlife management.
2. The identification of socio-economic characteristics of the users of these products, the clients of wildlife management.
3. The determination of the preferences of the users for these products.

Phase II (economic)

1. The definition of suitable units by which to measure the production and consumption of these products.
2. The determination of the participation patterns of the identified users.
3. The evaluation of the benefits accruing to the users through use and enjoyment of preferred products.

The method is being developed and tested in the province of Saskatchewan with regard to the migratory bird resource. It is expected that the questionnaire designs and analytical procedures developed will be readily modifiable to the social

and ecological characteristics of other provinces and to a broader variety of wildlife resources.

IV. Decision factors in western Canadian migratory bird management

In order to employ social and economic information effectively in wildlife management, the decision processes of wildlife management agencies must be geared to accept and employ the relevant data. The objective of this investigation, now completed, was to assess the ability of decision-makers to incorporate and utilize social science data as guidelines and feedback to migratory bird management.

Many problems in wildlife management relate directly to people and to the provision of a service in response to stated demands. Our research to date in addressing such problems has begun to clarify the issues at hand. In addition it has served to expose deficiencies and to identify directions for progress in the development of theory within the disciplines of resource sociology and resource economics. Social science studies on the human aspects of wildlife management such as those being conducted by the Canadian Wildlife Service will contribute greatly to the effective management of wildlife resources throughout Canada.

Wildlife statistics and socio-economics: Socio-economics in migratory bird management

Doug Schweitzer[1]

Introduction

The management of migratory birds, indeed of all wildlife, has been hampered by, among other things, a lack of knowledge of the role they play in the social and economic activities of Canadians. For example, we have only a vague idea of the kinds of recreational uses, aside from hunting, that are made of birds. We have even less information about the people who use migratory birds for recreational activities other than hunting and about the amount of time they spend in these activities and the values they place on this time. Because so little is known about these factors we can do little more than guess at the adequacy of our present management strategies.

In an effort to answer questions such as these the institute for northern studies undertook a three-year project for the Canadian Wildlife Service in 1971. The study is directed at the broad objectives of determining "the current and future social and economic needs, requirements and aspirations of society for the migratory bird resource". It was established as a two-phase project with the first phase completed during the past winter. We are now several months into the second phase.

In the remainder of this paper I will briefly outline the research project and quickly summarize the results of the first phase study. I will also try to show how information of the kind we are developing can be used in the management process. Two reports on the progress of the project have been prepared and are available from the Canadian Wildlife Service in Edmonton.

A model for management

As a guide in the design and development of a research plan we required a model. For this model we hypothesized that public agencies (particularly the Canadian Wildlife Service) function somewhat like a firm engaged in manufacturing. That is, they

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commit capital and labour resources to processes that consume basic resources (or factors of production) such as land, air, water, flora, aquafauna, and avifauna to create recreational products (or opportunities) for consumption by the people of Canada.

We further hypothesized that people, through their engagement in these recreational activities, obtain some benefit (esthetic, therapeutic, economic) equal to or greater than their perceived costs (in time, effort or money) of consumption. Hence, the primary management objective is to undertake as many projects as budgets permit that add more to public welfare than they subtract. However, this is a gross simplification since it is extremely difficult to adequately measure all social benefits and costs. It is highly erroneous to assume that the all-inclusive public welfare objective can be replaced by the economic efficiency objective as is done in most private firms.

At this point our model departs from the model of the private manufacturing firm. The fallacies of not making this departure are adequately documented elsewhere in the literature, but it should be sufficient to point out that the objectives of any public agency are many and complexly interrelated.

The model outlined above, while extremely useful in guiding our research design, has many problems to be solved before it can be implemented. As discussed, the objectives of a public agency are many and complex and require considerable thought in their formulation. Methods of measuring the effectiveness of alternative projects in meeting the objectives are generally inadequate. Indeed the generation of feasible alternative investment strategies is a difficult task that is often overlooked. Without the availability of measures of effectiveness it is difficult, if not impossible, to make a rational evaluation of the alternatives. And, of course, without this kind of evaluation, any selection among the alternatives is tenuous at best.

Identification of information needs

Aside from the difficulties discussed above, the model is a useful device in determining the information needs of management.

1. What is the product or output of the management process? Is it birds, recreational space, recreational opportunity, or what?
2. What units can we use to measure the supply and consumption of our output? Is it numbers or pounds of birds, man-days of recreation or recreation trips?
3. How can the various basic resources be combined to generate a desirable output? What are the production costs? What are the constraints?
4. What is the present supply (inventory) of our products?
5. Is this supply adequate or must we continue to produce?
6. Who uses our products? Is the user component of society stable, growing or declining?
7. What kinds of benefits are obtained by the users? What is the magnitude of these benefits?
8. How sensitive is consumption to user costs? If we halve the user costs will consumption double? triple?

While this list is not as comprehensive as it might be it does give you an idea of the usefulness of the model in identifying information needs.

Objectives of this research

The full range of information needed by management is beyond the scope of this research. Hence, it was decided that this research would focus on: the identification of the products (output) of management activities; the identification and description of users of these products; the investigation of the users' preferences for these products; the estimation of benefits accruing to society from the provision of migratory bird-based recreational opportunities. Consequently the objectives of the two-phase research project are:

Phase 1

1. The definition of the products of migratory bird resource management.
2. The identification of the users of the products.
3. The determination of the preferences of the users for these products.

Phase 2

1. The definition of suitable units by which to measure the production and consumption of these products.
2. The determination of the participation patterns of identified users.
3. The estimation of benefits accruing to society through provision of these products.

Phase 1 research

The first step was to develop a series of activity (product) descriptions sufficiently broad to represent the spectrum of activities available to the recreational user yet limited enough to permit

manageability of the analyses. A typical activity statement comprises four dimensions: user action, species group, location, time.
Each dimension contains several components:

User action
Observe (To watch or listen to birds); study (To keep written records of observations or to count, identify, band, collect specimens, paint, photograph, or tape record); shoot (To shoot birds).

Species group
ducks, geese, other water and shore-birds, songbirds, upland gamebirds, birds of prey.

Location
city residential areas, city parks, rural areas, zoos.

Time
spring, summer, fall, winter.

By combining one component from each dimension, activity statements were constructed. By deleting illogical or illegal activities, activities that would be biologically difficult to provide for, and statements that contained time components that were not considered significant, a final list of 76 activities was constructed.

Respondents to a mailed questionnaire were asked to indicate their preferences for engaging in each activity assuming there were no time or supply constraints operative. Their preferences were expressed on an arbitrary nine-point scale ranging from "dislike very much" through "indifferent" to "like very much".

A random sample of 3,066 Saskatchewan adults was selected to receive the questionnaire and we analyzed 694 (22.6%) useable responses. The data were subjected to factor analysis, analysis of variance and multiple comparison techniques to identify groups of activities that exhibited similar and unique preference patterns. These groups were then called "product classes".

We had hypothesized that within each product class there would be groups of activity statements so similar in construction and preference that the groups could be subsumed by a new inclusive activity statement that could become an individual product statement. The data did not support this hypothesis.

Some interesting results of the Phase 1 research are:
1. There appear to be three distinct types of bird-related activities in Saskatchewan: observing birds, studying birds, and hunting birds.
2. Generally, the people of Saskatchewan have high preferences for observing birds, are relatively indifferent to studying birds and negative towards bird hunting.
3. More specifically, nearly 90 per cent of our sample had positive preferences for observing birds, while about one-third had positive preferences each for studying and hunting birds. Nearly one-half of our sample were indifferent towards the study of birds while a similar number were negative to bird hunting.
4. Songbirds were most preferred for observe-and-study activities while birds of prey were least preferred.
5. Our sample preferred not to engage in observe-and-study activities in the winter.
6. Hunters preferred ducks, geese and upland gamebirds equally well but they exhibited a distinct dislike for cranes.
7. No distinction was made between urban and rural areas as appropriate locations in which to engage in observation and study activities.

The significant conclusion from our phase 1 research is that the people of Saskatchewan perceive three distinct product classes (see Tables 1, 2 and 3 in the Appendix). Each product class contains a set of activity statements which may be referred to as individual products. The 'observe' product class contains 35 activity statements; the 'study' product class contains 36 statements; and the 'hunt' product class contains 5 statements. Because we were unable to combine activity statements in each of the product classes into groups that were significant to both the user and the manager it will be necessary to consider each activity separately in phase 2 research.

Phase 2 research

To meet the objectives of the phase 2 research three classes of information will be sought. The first is a detailed examination of the current level of participation in bird-oriented recreation activities. This will include information on the frequency, distribution and duration of trips to participate in the activities, the distance travelled and the size of groups involved in the activity.

Information will also be sought to determine the degree to which these activities are undertaken jointly with non-bird-oriented recreation activities. The units to be used to measure participation will be both time (user-day) and trips.

The second class of information is an estimation of the latent demands for opportunities to participate in these activities. Are people satisfied with their present level of participation or do they wish to increase this level? If they desire to participate more, how much more? What are the factors that presently constrain their participation? Is it the lack of supply of opportunities or is it due to other factors? Answers to these questions will assist the resource manager in identifying areas in which the greatest needs are felt by the using public for increased recreational opportunities.

The third class of information is an estimation of value to the user obtained through participation in the activities. While there exists a variety of techniques for estimating these benefits, some more valid than others and each with particular advantages and disadvantages, all provide only approximate estimates at this stage of their development.

The various techniques are usually classified as direct or indirect methods. The indirect methods impute a value to the opportunity by the measurement of costs of factors involved in undertaking the activity. Thus for example, travel costs are often used as a minimum estimate of benefits received. For site-specific activities the Hotelling-Clawson travel cost method provides a technique for developing a demand curve from a measurement of travel costs incurred by participants in travelling to the site. On the other hand, the direct method asks the participants directly what the activity is worth to them. These measurements provide estimates of net benefits to the participant over and above his costs of undertaking the activity.

This research will utilize the direct method of estimating the net worth of the activities. Respondents will be asked to estimate the value of the activities to them in two ways. The first will be a request for them to estimate the worth of all their activities in a given product class in dollars per trip or dollars per season. The second will be a request to set a price they would have to receive to forego the opportunity to engage in the activities.

Because it is very difficult for respondents to estimate these values they will be asked for estimates for the entire product class rather than for each specific activity statement. The total worth for the entire product class can be prorated to the specific activities in which the respondents engaged on the basis of the relative preference levels determined from the phase 1 research, or on the basis of their present distribution of time spent in the activities.

Because of the large number of recreational activities to be investigated during phase 2 and because of the difficulty of recalling the amount of participation over a long period of time, it has been decided to conduct the phase 2 investigations in four stages over the year. That is, each of four questionnaires will refer to a set of activities for a specific season. Thus the first questionnaire will refer to activities undertaken during the spring season, the second to activities during the summer season and so on. The seasons have been defined as: spring (March, April, May), summer (June, July, August), fall (September, October, November), and winter (December, January, February). This technique of mailing four separate types of questionnaires will also yield important information on the seasonal variations in participation and value.

It is intended to include all activities from each product class in the same questionnaire for each season. Thus the questionnaire for spring, summer and winter activities will contain both observe and study activities, while the questionnaire for fall will include hunting activities.

Because of the exploratory nature of this research the questionnaire will be mailed only to a sample of Saskatchewan adults as was the phase 1 questionnaire. The sampling frame for the phase 1 questionnaire was the householder directories from the post office for rural areas and Henderson city directories for the urban areas. While this frame was the best that could be obtained for the Phase 1 research it was not entirely satisfactory.

For phase 2 research a complete set of voter's lists for the province of Saskatchewan, compiled last fall for the recent federal election, has been obtained and will be used for the sampling frame. Four separate samples of 3,000 names will be drawn, one for each season. Each questionnaire type will be mailed as soon after the end of each season as is possible. This should result in approximately 700 completed questionnaires for analysis for each season.

Analyses

The phase 2 questionnaire has been constructed to permit several kinds of analyses. Only the more important ones will be discussed here. Perhaps the best way to present the analyses will be to set them in the context of management assessing a potential project for some future budgeting period. The

analogy will be considerably simplified for discussion purposes.

The research will determine, in considerable detail, the present consumption patterns of the Saskatchewan people. It will also identify deficiencies in the supply of opportunities. That is, it will identify those activities for which people express a desire for spending more time and for which present constraints are related to the supply of opportunities.

Let us assume that one of the needs identified is for more observation and study opportunities near a large urban area. The manager, after reviewing the problem, has identified a site some miles from the city that has or can be made to have the combination of habitat features to attract birds of several species groups. This site then has most of the attractions necessary for the observation and study of birds during spring and summer and hunting waterfowl in the fall. Hence the manager can identify each of the activities that can take place during each season. Let us further assume that he is able to determine the capacity of the site for each activity and for various combinations of activities and that he has estimated the total annual costs of providing that capacity.

Now the manager's problem is to evaluate this project in terms of the benefits returned to society from having these additional recreational opportunities. His first task will be to attempt to forecast the visitations to the site. The number of trips to the site during each season from each population center within the radius of attraction (the distance from the site beyond which only a negligible number of trips originate) will be given by equations of the form: $v = f(A,D,Y,L)$.

Where v = number of vehicle trips per capita visiting the site in a given season from each population centre (city, town) within the radius of attraction; A = the attractions of the site measured by the activities that can be undertaken; D = miles from each population centre to the site, a proxy variable for the cost of engaging in the activities; Y = average total annual family income for each population centre; L = average amount of leisure time available to the residents of each population centre.

The average number of people per vehicle visiting the site from each population centre will be determined by a similar equation as will the average time spent per person per trip to the site. The manager will now have an estimate of the number of people visiting the site for each activity during each season as well as an estimate of the total amount of time (in man-hours) spent in each activity. Where his estimates of visitation exceed his estimated capacity he will use the capacity figure in subsequent analyses.

The next step will be to estimate the total net benefits (the value of the experience over and above all individual costs in having the experience) accruing to the users as a result of their visits to the site. A similar equation will estimate the average net benefit per person per hour at the site. The manager will then be able to construct an estimate of annual net benefits accruing to the users for comparison with the total annual cost of acquiring and developing the site. He then can determine the benefit-cost ratio for that project for comparisons with other similar proposed projects.

This is a highly abbreviated and simplified discussion of the analyses that will be performed during phase 2 and the manner in which they can be used but I think it is sufficient to give you an idea of how socio-economic data can be used in migratory bird management.

Appendix

Product classes defined in phase 1 research, see page 57 and 58.

Table 1
Observe product class and mean preference level* for contained activities

Activity	Mean preference†
Observe songbirds in rural areas in the spring	7.821
Observe songbirds in rural areas in the summer	7.804
Observe songbirds in city residential areas in the spring	7.785
Observe songbirds in city residential areas in the summer	7.741
Observe songbirds in rural areas in the fall	7.661
Observe songbirds in city parks in the spring	7.651
Observe geese in rural areas in the fall	7.639
Observe ducks in rural areas in the spring	7.638
Observe songbirds in city parks in the summer	7.631
Observe geese in rural areas in the spring	7.606
Observe songbirds in city residential areas in the fall	7.591
Observe ducks in rural areas in the fall	7.584
Observe upland gamebirds in rural areas in the fall	7.539
Observe geese in rural areas in the summer	7.502
Observe upland gamebirds in rural areas in the spring	7.497
Observe ducks in rural areas in the summer	7.497
Observe songbirds in city parks in the fall	7.482
Observe upland gamebirds in rural areas in the summer	7.476
Observe other water and shore birds in rural areas in the spring	7.439
Observe other water and shore birds in rural areas in the summer	7.436
Observe other water and shore birds in rural areas in the fall	7.332
Observe geese in city parks in the summer	7.286
Observe ducks in city parks in the summer	7.268
Observe other water and shore birds in city parks in the summer	7.169
Observe songbirds in city residential areas in the winter	7.162
Observe songbirds in rural areas in the winter	7.086
Observe upland gamebirds in rural areas in the winter	6.997
Observe songbirds in city parks in the winter	6.981
Observe birds of prey in rural areas in the summer	6.743
Observe birds of prey in rural areas in the fall	6.730
Observe birds of prey in rural areas in the spring	6.707
Observe birds of prey in rural areas in the winter	6.432
Observe geese in city parks in the winter	6.366
Observe other water and shore birds in city parks in the winter	6.217
Observe ducks in city parks in the winter	6.066

*Mean preference scale value (9 = like very much; 5 = indifferent; 1 = dislike very much).
†At the $p < .01$ level of significance, any two means that differ by more than 0.3818 are significantly different.

Table 2
Study product class and mean preference level* for contained activities

Activity	Mean preference†
Study songbirds in rural areas in the spring	5.828
Study songbirds in rural areas in the summer	5.805
Study upland gamebirds in rural areas in the fall	5.747
Study songbirds in rural areas in the fall	5.723
Study songbirds in city residential areas in the spring	5.719
Study upland gamebirds in rural areas in the summer	5.705
Study upland gamebirds in rural areas in the spring	5.700
Study songbirds in city residential areas in the summer	5.683
Study geese in rural areas in the fall	5.637
Study other water and shore birds in rural areas in the spring	5.626
Study songbirds in city parks in the spring	5.619
Study geese in rural areas in the spring	5.609
Study songbirds in city residential areas in the fall	5.603
Study songbirds in city parks in the summer	5.593
Study other water and shore birds in rural areas in the summer	5.578
Study ducks in rural areas in the spring	5.553
Study geese in rural areas in the summer	5.549
Study songbirds in city parks in the fall	5.523
Study other water and shore birds in rural areas in the fall	5.520
Study ducks in rural areas in the summer	5.517
Study ducks in rural areas in the fall	5.514
Study birds of prey in rural areas in the summer	5.504
Study birds of prey in rural areas in the spring	5.489
Study upland gamebirds in rural areas in the winter	5.478
Study birds of prey in rural areas in the fall	5.467
Study songbirds in rural areas in the winter	5.427
Study birds in zoos anytime during the year	5.416
Study other water and shore birds in city parks in the summer	5.385
Study songbirds in city residential areas in the winter	5.384
Study geese in city parks in the summer	5.381
Study songbirds in city parks in the winter	5.315
Study ducks in city parks in the summer	5.305
Study birds of prey in rural areas in the winter	5.283
Study geese in city parks in the winter	5.109
Study other water and shore birds in city parks in the winter	5.079
Study ducks in city parks in the winter	4.964

*Mean preference scale value (9 = like very much; 5 = indifferent; 1 = dislike very much).
†At the $p < .01$ level of significance, any two means that differ by more than 0.4473 are significantly different.

Table 3
Hunt product class and mean preference level* for contained activities

Activity	Mean preference†
Shoot ducks	4.584
Shoot upland gamebirds	4.522
Shoot geese	4.498
Shoot cranes	3.039

*Mean preference scale value (9 = like very much; 5 = indifferent; 1 = dislike very much).
†At the $p < .01$ level of significance, any two means that differ by more than 0.5081 are significantly different.

What is required in the Canada fur industry[1]

D. H. Gimmer

Preamble:

The title chosen for this presentation may be assumed to constitute a statement of requirements for the primary wild fur industry in Canada or it may be posed as a question related to the needs of the industry. Perhaps for our purposes it might be useful to examine the subject in each context and endeavour to arrive at a conclusion best suited to our individual needs.

To establish an approach to the subject it seems appropriate to review briefly some of the concepts, or misconceptions, which currently and historically have had an impact on the industry. You are familiar with the anti-fur sentiment and propaganda which has circulated throughout the world and many of you have been kept busy preparing correspondence on the subject. Proponents of humane trapping, and legislation to ban the leghold trap, have also had an impact on policy formulation. Publicity, generated as a result of these activities, may tend to confuse the public or cause individuals to respond in an irrational way.

The CBC program, A certain shame, shown in December last on This land series, is an ideal example of the misconception that people have about trapping in Canada. It was stated that "fur farming could be the ultimate answer to trapping—it is a profitable business and could provide an attractive and reasonable alternative for those who depend on trapping for their income—trapping cannot go on forever and fur farming would go a long way to providing stable incomes for our native Canadians."

Much of the impetus for these misconceptions is generated in the U.S.A. and applied, by choice or ignorance, to situations and conditions in Canada. It seems to demonstrate our inability to convey to the Canadian public the truth about the primary wild fur industry. An example of this is the difficulty experienced in publishing the report on The Status of Canadian Wildlife Utilized in the Fur Industry, to which many of you contributed. I was unable to convince my department to publish the report and the Canadian Wildlife Service also deferred, stating that it appeared to be a publication more in line with the interests and functions of the department of industry, trade and commerce. The draft report is now receiving consideration by that department.

I subscribe to the concept that fur bearing animals are a valid and viable natural resource, the cropping of which is a legitimate and honest occupation. Over extensive areas of Canada, fur represents the only resource and trapping the only occupation available during certain periods of the year for people residing in those areas, most of whom are native people. Canadians do not have to apologize for engaging in this industry, nor for the active fur conservation and management programs which have been developed and maintained over the past thirty-odd years.

The substantial increase in abundance of fur-bearing animals, and the successful rehabilitation of many species considered rare 40 years ago, attest to the validity of these programs. No species of wildlife has become extinct in Canada, nor has any species become endangered as a result of trapping since the fur conservation programs were initiated. Current fur management is capable of preventing such an occurrence if diligence is practised. There is grave doubt, however, that the public are sufficiently aware of the fur conservation programs and they should be because we need their support to overcome misleading and ill-conceived publicity, and to improve and expand these programs.

With reference to the fur farming concept, the registered trapline system is ostensibly designed to function as a fur farm, based on sustained yield production, maintenance of adequate breeding stocks and harvesting the surplus. It may be the only system with an appreciable hope of success, based as it is on the concept of animals utilizing natural sources of food, fulfilling their biological reproductive functions under natural conditions and producing a harvestable surplus for cropping.

I suggest that even if the technical, financial and biological problems inherent in fur ranching, of such species as marten, fisher, otter, ermine, wolf, coyote, raccoon, wolverine, etc., could be overcome, the available sources of protein feed could not support a viable industry. The major problem facing fur ranchers is in securing a continuing supply of suitable feed at a price which will allow them to produce at a profit. I submit that fur farming is not a valid alternative to trapping and cannot become a source of stable incomes for native people. We must, therefore, assume that trapping has a future in Canada and be prepared to publicly substantiate this position.

Current situation:

You are all familiar with the depressed price structure of wild furs during the past twenty-odd years and the obvious improvement which has

[1] Presented to the provincial forum.

occurred over the past three seasons. Low prices and increasing costs have combined to depress the primary fur industry and have resulted in a situation where producers are under-capitalized and now require a substantial investment in equipment and accommodation to operate efficiently. In addition, Indian people have been faced with other socio-economic problems related to a major change in life-style associated with permanent settlement living.

Fur conversion programs, for the most part, have been aimed at resource management and have not been directly related to people problems or the needs of primary producers. Trappers operating in the more accessible areas of each province probably do not need the kind of help required by those in more isolated areas, because of the availability of alternate sources of income. There is need, however, for a marked change in emphasis to achieve a healthy primary industry, capable of coping with the economic and social demands of trappers operating in relative isolation of the mainstream of Canadian life.

This then poses the question "What is needed in the Canada Fur Industry?" My remarks will be confined to the primary wild fur segment of the industry because I believe other participants are capable of defining their own needs and representing their own interests. The various elements of the primary industry are presented by functional area, to permit better analysis of each area of requirement and responsibility.

1. Fur resource and program management

1. It is essential that firm policy direction and program objectives be established, for the guidance of both staff and primary producers, and to ensure that programs have the support of the governments concerned.
2. Appropriate headquarters management and field supervision is needed to ensure the program receives suitable priority in the allotment of staff and funds for effective implementation.
3. Provision of scientific, technical and other support services is required to ensure management and research conducted on a basis of need in the industry.
4. An adequate recording and reporting system must be established at all levels to ensure an information base is available to management and technical staff.
5. Assessment and evaluation of fur production capability and potential and the establishment of a productivity index for each ecosystem are required to enable managers to measure the performance of and requirements for trapline units.

2. Organization of fur harvesting: (rationalization)

1. Economically feasible trapline units must be defined and established, based on productivity and income potential, to permit trappers an opportunity for efficient operation and recovery of his investment in time, equipment and improvements.
2. Traplines should be established in a manner which encourages organized group participation and mutual assistance in securing supplies, transportation, communications and provides for social interchange.
3. Appropriate access and communication, between traplines and home communities, needs to be developed to reduce isolation.
4. Community organization of transportation, supply and movement of furs to market should be encouraged and facilitated.
5. Consideration should be given to the establishment of community trapping blocks for old people and hobby trappers and to provide training opportunities for young people.
6. Provincial concessions to trappers in terms of land use, timber, fuel wood, fur resource use and security of tenure should be defined and documented.
7. Trapper's responsibility and obligations need to be defined and clearly enunciated, as well as penalties for non-compliance.

3. Organization of fur marketing:

1. Provision should be made to encourage and facilitate direct marketing through the fur auctions to enable trappers to secure full market value for their production.
2. It is considered essential to encourage and facilitate participation in fur promotion activities, by both primary producers and government agencies, to enhance demand and facilitate product research and development.

4. Education and extension services:

1. Trappers should be given strong encouragement and assistance to develop provincial trapper association and local councils to provide a framework for planning and development.
2. Provinces should encourage trapper participation in the development of policies and in making

program decisions, perhaps through representation on joint advisory councils or committees.
3. Provision of incentives to encourage the development of trapline resources during the off-season to secure additional sources of income and employment.
4. Development and implementation of a comprehensive trapper education program should be a vital component of any effort made to improve the primary wild fur industry.

5. Financial assistance and services:

1. The establishment of an appropriate financing system, incorporating provisions for loans, grants and contributions, should be an essential component of a fur program to provide economic freedom to trappers. The system should co-ordinate various sources of financing to ensure all inputs are channeled toward achieving the objectives established for the program. There are three primary requirements, which may need separate treatment, and for which provision should be made:
a. Term financing: for development of trapline improvements (i.e. cabins, base camps, access trails, water control facilities, etc.); purchase of equipment (i.e. snow toboggans, humane traps, camp equipment, etc.); and acquisition of community fur depots, transportation equipment, etc.
b. Seasonal financing: grubstakes, supplies, gasoline, etc. to enable trappers to reach and remain on their traplines and conduct an efficient and profitable operation.
c. Advances on fur: shipped to fur auction, to enable trappers to remain on or return to their trapline promptly.
2. Provision must be made for the overall financial needs of administration and management for a dynamic and progressive fur program, designed to achieve improved fur conservation and management, while meeting the needs of the primary producers.

Program review and development

The foregoing represents only the bones of a fur program, it is not complete and, given a particular situation, needs considerable meat applied to the skeleton. Two or three provinces and at least one territory are now engaged in the process of developing a new fur program proposal. I'm sure they can attest to the fact that it is not a simple task nor one quickly accomplished. I won't comment on these here and would prefer to have the respective representatives discuss the progress and objectives of their individual proposals.

I do, however, want to comment on the policy, established by the department of Indian and northern affairs, whereby it will engage jointly with a province or territory in the process of program review and development to develop useful long term programs. Consideration will also be given ultimately to negotiating a joint agreement covering the implementation, administration and management of approved programs. We are prepared to meet with provincial and territorial representatives to discuss the process and endeavour to reach mutual accord on an approach to initiating program development.

We accept the precept that not all programs will be identical and that these may be adapted to meet varying needs, conditions and situations. However, there are some underlying principles which we have adopted on which agreement is a prerequisite to our involvement. These include full consultation with Indians and other primary producers, and provision for their participation in the development process. It is essential also to secure the approval of primary producers for final program proposals and their commitment to participate fully in the program before it is submitted for final approval and authority for implementation.

Development of a program serves no useful purpose if the intended beneficiaries are not prepared to participate fully in its implementation.

Report of the committee to re-examine the Federal-Provincial Wildlife Conference

A. G. Loughrey (chairman), J. E. Bryant (co-chairman), J. Hatter, G. Moisan, A. Murray and K. Ronald.

Discussion is the main reason for having the conference. In the last analysis human communication requires face-to-face discussion to be effective. No amount of printed material can substitute for this direct communication. We need the discussion because there are ambiguities, misunderstandings, small items of information, etc. that can only be supplied in face-to-face talk. Unfortunately, however, we often spend a high proportion of the precious time of the meeting in reading to one another or providing verbally information which could be more easily taken by reading. Practices that were necessary before the age of printing or the mimeograph machine seem hard to shake. But in a literate society, and in a professional group, to provide information in this way is close to irresponsible, and I would agree with those who think that all papers and reports should be distributed ahead of time and should be discussed, but not read, at the meetings.[1]

The committee's terms of reference were to examine the Federal-Provincial Wildlife Conference with respect to its objectives and to assess how well the existing format, content, timing and membership contribute to achieving those objectives. Suggestions on how the conference could be improved were given individually by committee members, and in addition views contained in feedback forms submitted by delegates to recent conferences were reviewed.

This information was synthesized by the chairman and co-chairman since time and other pressures did not permit a meeting of the committee. This report does not attempt to represent a concensus of views but rather is an attempt to put forward suggestions and recommendations for discussion by the delegates at this conference. Although a concensus was not sought, similar or converging views on many subjects did occur. The divergent or minority opinions are so designated in this report.

It is noted that the objectives, content, format and membership of the Federal-Provincial Wildlife Conference have evolved and changed considerably over the past 37 years in response to changing circumstances and needs of federal and provincial game administrators.

Objectives

The main current objectives of the Federal-Provincial Wildlife Conference are summarized as follows:

1. To provide a forum for formal "in camera" discussions and negotiations between provincial game directors and senior officers of the Canadian Wildlife Service in matters relating to the setting of annual migratory game bird hunting regulations under the Migratory Birds Convention Act.
2. To provide a forum for the exchange of information and views in the field of wildlife research and management, primarily on subjects of particular interest to provincial and federal wildlife agencies.
3. To provide a special provincial forum for the presentation and discussion of subjects of particular interest to provincial wildlife administrators.
4. To provide for the presentation of reports by independent national organizations with interest in wildlife research, management or conservation, such as Ducks Unlimited and the Canadian Wildlife Federation, and by the U.S. Bureau of Sport Fisheries and Wildlife.
5. To provide for the holding of specialized ancillary meetings of an administrative nature on subjects of concern to the responsible federal and provincial agencies, such as the administrative committee for caribou preservation, polar bear administrative committee and the Canada Fur Council.
6. To formulate and pass formal recommendations on matters of national concern in the field of wildlife resource, research and management.

The above objectives were examined to determine if they were relevant and valid in the light of present and anticipated administrative needs of the wildlife resource in Canada. Additions to the above objectives were considered.

The committee concluded that the main objectives are still relevant but that changes in the format, content and procedures for the conference would aid in their achievement.

In reviewing the above objectives the committee made the following observations:

Objective 1

With the recent formation of the various provincial and regional waterfowl technical committees, where the details of seasons, bag limits and other restrictions are largely resolved before the conference, this objective is of less significance than in former years. It is noted, however, that certain contentious items and matters of national rather than regional concern

[1] Excerpt from Comments of the observer, from summary to replies to feedback form. Transactions of the 32nd Federal-Provincial Wildlife Conference 1968, pp. 80-83.

relative to the regulations and the act, as well as enforcement of that legislation, need to be discussed by all provinces and territories with the Canadian Wildlife Service. This conference represents the only forum for such discussion.

Objective 2

This objective relates to the content of the conference. It is noted that the subject matter of previous conferences has generally been limited to those subjects which have special relevance and interest to Canadian wildlife administrators. The question of whether the content of the conference should be expanded is discussed under Content.

Objective 3

The objective of the provincial forum is strongly supported by the committee and certain suggestions concerning the timing and format are made later in the report.

Objective 4

This objective is supported by the committee. We note that reports are given by the Canadian Wildlife Federation, Ducks Unlimited and the U.S. Bureau of Sport Fisheries and Wildlife, and formerly by the Canadian Audubon Society. It is recommended that the Canadian Nature Federation should be added to the list of those agencies invited to provide reports.

Objective 5

The committee supports the concept of holding ancillary meetings in conjunction with the conference. We suggest that consideration be given to the holding of more such meetings of specialized interest groups that are of mutual interest to provincial and federal agencies.

Objective 6

The committee notes that aside from the usual "bread and butter" type recommendations, the aim of this objective is somewhat unclear and requires redefinition. The committee seeks the views of the delegates at this conference and asks the question: "Is the Federal Provincial Wildlife Conference a pressure group and if so, should it be?"

The following new objective for the Federal-Provincial Wildlife Conference was submitted by one committee member. There was not unanimous support for this objective and the committee would, therefore, welcome the views of the delegates at this conference. The objective is:

To provide a national scientific forum to serve as a focus for wildlife matters of general concern to Canadians through the participation of university scientists, government scientists and administrators, other non-government scientists and others having an interest in the wildlife resource.

It should be noted that the purpose of this objective is to expand the present role of the Federal-Provincial Wildlife Conference to make it the Canadian wildlife conference of the year. This objective would be accomplished by enlarging the membership of the conference to include scientists from universities and agencies such as the World Wildlife Fund, Canadian National Sportsmen's Show, those concerned with training wildlife students, and consultants from the renewable resource field. Fairly extensive changes in the format of the conference would be necessary to facilitate the achievement of this objective.

The committee makes no recommendation with respect to this proposal but suggests that it requires thorough and conclusive discussion by the delegates. A useful start for discussion might be to define who is or should be the audience for the Federal-Provincial Wildlife Conference.

Membership

It became apparent to members of the committee that there is some confusion with respect to the membership and status of people attending the Federal-Provincial Wildlife Conference. To date participants have been identified as either delegates or visitors. In recent years there seems to have been a blurring of the roles delegates and visitors should play. The committee suggests that the conference give consideration to establish the following categories of participation at the Federal-Provincial Wildlife Conference:

1. Official voting delegate. One from each province and territory, and the Canadian Wildlife Service. It is particularly important to clarify this category relative to objectives one and six.

2. Participant. To include members of provincial game agencies, the Canadian Wildlife Service, RCMP, and personnel from other provincial or federal government departments.

3. Official representative. To include representatives of national non-government bodies, such

as Ducks Unlimited, Canadian Wildlife Federation, Canadian Nature Federation and representatives of foreign governments, such as the U.S. Bureau of Sport Fisheries and Wildlife.

4. Guest. To include all other participants not included in the above three categories. Guests would be invited on an annual basis as required by the program content of each conference. It is noted that members of only the first two categories would normally attend closed sessions and others would attend only by invitation of the chairman.

In addition to the recommendations that the Canadian Nature Federation be designated as an official representative, the committee recommends that consideration be given to inviting the following agencies to send an official representative to the conference: Canadian Society of Environmental Biologists, and the Wildlife Management Institute of North America.

Executive

The Canadian Wildlife Service currently provides the conference chairman and secretary, and is largely responsible for co-ordinating the conference program other than the provincial forum. In the case of the provincial forum a chairman is selected from among the provincial delegates. The recommendations committee consists of a chairman and two other members appointed by the conference chairman, plus a permanent secretary provided by the Canadian Wildlife Service.

1. A suggestion was received that the conference give consideration to having a conference chairman selected from amongst the provincial delegates and that logically the host province would provide the chairman. The committee does not recommend this proposal but believes that it merits discussion by the conference.
2. The committee does recommend that the secretary continue to be provided by the Canadian Wildlife Service.
3. The committee recommends no change in the constitution of the committee for the provincial forum.
4. The committee recommends that a formal program committee should be established and suggests that this committee consist of six members to serve two-year terms under an internally elected chairman and co-chairman, and further that the membership of the chairman and members be staggered in such a way that three members would retire and three new members be appointed each year.
5. The committee recommends that the recommendation committee continue as it is presently constituted.

Size of conference

In the past few years attendance at the conference has varied from 45 to 85 averaging 60 to 65. The committee does not foresee an optimum size but notes that acceptance of the proposal to expand the role of the conference would mean a considerable increase in size, with obvious significance for the program and recommendations.

Location

The committee sees merit in continuing the practice (since 1955) of holding the conference in various provincial capitals and Ottawa. If the proposal to expand the role of the conference to include a wider range of wildlife professionals is adopted, then consideration should be given to holding the conference at university centres and possibly making use of university campus facilities.

Timing

Over the past 36 years the conference has been held in all but four of the 12 months. Recently, since 1966, the conference has been held during the second week of July. The rationale for that date is that it provides the best compromise between receiving final waterfowl status reports, while still allowing sufficient time for the processing of the federal migratory bird regulations.

It is noted, however, that in the last few years most of the decisions concerning waterfowl regulations have been settled at the various technical waterfowl committees by early June and therefore the reason for having the meeting in July is less important than formerly.

It is noted that there are several disadvantages to a July meeting in that it comes during the summer vacation period when hotel and other accommodations are at a premium. A recent poll of provinces and territories indicated that the second or third week of June would be preferred by 10 of the 12 provinces or territories.

1. The committee recommends that the conference be held in June in the second, third or fourth week at a time that could accommodate all provincial and territorial delegates.

Format

The committee recommends that the Federal-Provincial Wildlife Conference should consist of five days, including one day devoted to ancillary meetings and workshops, one day for a provincial forum and one day free.

Based on a review of the feedback forms and the views of the committee members, it was obvious that there are divergent opinions as how best to order the various sessions of the conference. The committee suggests the following as the best compromise:

Day one—ancillary meetings and special workshops.
Day two—plenary sessions (open); Items of general interest; reports and symposium.
Day three—provincial forum (open or closed at the discretion of the chairman).
Day four—morning—plenary session (open).
Afternoon—(closed) restricted to official voting delegates and participants.
Day five—Free day.

Content and procedures

1. The committee suggests that papers, reports and symposia which are selected for the conference agenda should be of a nature and subject that is of particular interest to Canadian federal and provincial wildlife administrators.
2. The committee recommends that these papers in general should include information: on recent and significant research results; on new management programs and results; and specifically subjects such as new wildlife legislation, toxic chemicals in relation to wildlife and fish, wildlife diseases, rare and endangered species, wildlife habitat, wildlife enforcement, non-consumptive and consumptive use of wildlife, wildlife economics, impact of major resource developments on wildlife and wildlife habitat, and current social concerns (such as anti-hunting and anti-leghold traps).
3. The committee recommends that papers and reports be pre-circulated, and that speakers give summaries only so that more time could be devoted to discussion.
4. The committee recommends, with respect to the free day, that the program committee attempt to provide field trips that will provide conference delegates with an opportunity to become more familiar with the natural history of the area.

Epilogue

As a final thought and item for discussion the committee notes that wildlife managers and administrators are the "middle men" between the producer and the consumer. The consumer, both consumptive and non-consumptive, is well represented at this conference by the Canadian Wildlife Federation, the Canadian Nature Federation, and Ducks Unlimited. The producer is not. The committee notes a dearth of subject matter in this area, at previous Federal-Provincial Wildlife Conferences and no representation of important wildlife producers, farmers, ranchers and other major land owners. The committee recommends that future program committees give attention to rectifying that imbalance.

The ministry of transport's anti-pollution activities in the marine field

F. J. Bullock

The minister of transport's authority in the field of anti-pollution is contained in the Canada Shipping Act and in the Arctic Waters Pollution Prevention Act.

These Acts have given rise to a number of regulations, all of which are directly related to that pollution which emanates from ships, the minister's authority in this respect being solely confined to ships.

As this assembly is aware, regulations made pursuant to an Act contain "teeth", those details by which public servants are enabled to carry out at the working level of government, Parliament's intentions at the time the Act itself was passed by Parliament.

The ministry's best known regulation in this field is undoubtedly that known as the oil pollution prevention regulations. The marine safety branch of the ministry of transport also administers the air pollution prevention regulations and the garbage pollution prevention regulations, but it is the campaign against the pollution of our navigable waters by oil that our activities have led to the most prosecutions.

Our first oil pollution prevention regulations were promulgated 16 years ago, in 1957. However, the maximum fine resulting from a conviction under them was only $500. In fact, the first court before which a conviction was secured imposed a fine of only $50 upon the ship involved and the total of two fined for the first year was only $350.

Through the intervening years the maximum fine possible under the regulations became far more realistic. The definition of the word "oil" was also extended and the efforts of the ministry's steamship inspectors were pursued to a much more satisfactory conclusion. By the year 1966 the number of convictions secured against ships in our courts had reached 14 for the year, for the amount of $11,000 in fines.

Last year, 1972, the number of convictions totalled 65 for the year, for a total of $141,125. This is indeed a far cry from the two convictions secured in 1959 for a total of $350 in fines. Also during last year an amendment was made to the oil pollution prevention regulations which makes it possible for the courts to now impose a fine of up to $100,000 for a single oil pollution incident originating from a ship; in actual fact a court has already imposed $15,000 against a convicted ship, since the amendment was made. This is the highest single fine yet imposed by the courts for this purpose.

The great increase in the prosecution activity reflects the number of people who are engaged in this activity. The ministry's marine surveyors, the masters and officers of the Canadian Coast Guard vessels operating throughout our waters, and the ministry's aircraft are all engaged in surveillance activities for anti-pollution purposes.

It is also of great interest to note at this point that many of the reports of oil pollution incidents originate from members of the general public whose work keeps them close to the waterfront. This aspect of our work is most encouraging, reflecting as it does the concern of ordinary people for conditions that are so vital to everyone of us.

We are aware that it would be far better for us to be able to say in a paper of this nature that last year there were *no* convictions under the oil pollution prevention regulations and that there were no pollution incidents anywhere in Canada. We could then claim total success in our efforts to prevent oil pollution and every one of us would be happy. However, ships' crews are human and they are subject to the results of human error, just as people who work on land are. Human error in ships may cause some pollution in our waterways, but of course it is not the only cause of such pollution, a major part of which originates from the land.

The personnel in ships of all of the many different nationalities that come to Canada are becoming better educated and they are becoming constantly more aware of the need to avoid pollution in our waters. There is also the ever present fact that pollution in Canadian waters can lead to prosecution by the steamship inspection branch of the ministry of transport.

The more modern cargo ships are being designed to avoid pollution and are more sophisticated in their containment facilities. These consist of structural tanks intended to allow for retaining oil-contaminated water in the ships during such times as the ships are navigating in areas where the discharge of oil is prohibited.

In regard to the clean-up of oil, it is interesting to note at this particular conference that it was as the result of direct representations made to us by Mr. Tuck, of the then department of Indian affairs and natural resources that transport took upon itself the task of removing oil from a wreck for the first time. This was some 13 years ago and Mr. Tuck was, and I hear still is, stationed at St. John's, Newfoundland. He was deeply concerned with the very real danger that threatened the

murres and other birds in the area of the wreck when the seas would finally break it up. This area was a most critical one, and an obvious calamity could be averted, if vigorous action were taken in time.

The ship was called Ahern Trader and through the efforts of officers sent down from Ottawa and through those of the steamship inspection office in St. John's, the oil was removed from the ship's tanks while the tanks were still intact and it was disposed of ashore; bringing the whole effort to a satisfactory conclusion.

Nowadays there is a contingency section in the ministry of transport whose major function is that of planning against possible major oil spills. There is a very close liaison between the contingency section and the oil industry itself, as may be well imagined, and this particular subject is itself worthy of its own separate paper.

The ministry of transport is deeply involved in many facets of safety related to the state of the ecology. Ship routing regulations have been promulgated to reduce collisions in our territorial waters and the attending rupturing of oil tanks. The shipping safety control zones order for arctic waters was also promulgated with the same end in view.

Other regulations cover the rule of the road and the equipment that is required to be fitted in ships that navigate our waters and it would seem in fact that ships are regulated about as much as they possibly can be.

The regulations are necessary, however, ladies and gentlemen. The vast quantities of dangerous commodities that are carried in ships do not permit of any attitude of *laisser faire*. The administration of the regulations is indeed carried out with the utmost vigour. It is an unrelenting vigour and while the marine officers of the ministry of transport are paid to perform their many functions, they are indeed keenly aware of their responsibilities to those who follow along after us. In fact, I sincerely hope that we are as aware of that responsibility as I know all of you here are.

Report on lands directorate, department of the environment

R. J. McCormack

I propose to accomplish three objectives: to report on the formation of the lands directorate within DOE; to indicate the main responsibilities of the directorate; to report in some detail on the progress of the Canada Land Inventory (CLI). The emphasis on the latter objective is in recognition of the major role played by wildlife biologists—both federally and provincially in the CLI program.

Even before the department of the environment was formed, the responsible minister wrote to the Prime Minister identifying the need for a lands element in the new department. He proposed that the CLI and the geographic information system along with a small group from the department of agriculture should be transferred to Environment Canada as a nucleus. The transfer of these units was formalized in July, 1971. Shortly thereafter the group of geographers who constituted the resources and land use sector of the policy and planning branch of inland waters was also transferred.

Initially each of the units retained its identity and programs. In an attempt to establish an organization and program which related to environmental concerns, the directorate has now been organized into three divisions as follows:

1. Land evaluation and mapping branch

In addition to the CLI and geographic information system personnel, this branch has responsibility for the provision of systems of land stratification and methods of evaluation of environmental impact on the land and related resources. The biophysical system is an example of the type of system which may be required.

2. Land use studies branch

The responsibility for long term studies relating to the land resource in a national or regional context will reside in this branch. Included will be studies of land use dynamics related to urbanization, land despoliation, the identification and mapping of sensitive or critical areas, the assessment of open space and outdoor recreation from the physical resource standpoint and studies of the land markets.

3. Land use planning branch

Included will be the designing of land use planning systems and technical assistance to agencies engaged in land use planning. In addition, responsibility for environmental assessments related to specific developments or problem areas will reside in this branch.

Two regional offices have been established—one in Halifax for the Maritime provinces and another in Vancouver for the British Columbia—Yukon region. Ultimately a presence will be established in each of the regions of Canada. These are required in order to present a lands voice in the boards of regional directors established by Environment Canada for each region; to administer the contracts necessary for environmental assessments in the various regions; and to liaise more closely with the provinces in matters of national interest or mutual concern.

We propose to undertake only those studies or programs which fall within our mandate and which are not being done by another agency. It is a fact that, while various agencies at all levels of government are studying the lands which fall under their jurisdiction, no agency is reviewing what is happening to the land resource of the nation as a whole. It may well be that certain lands which appear plentiful in a regional context will be relatively scarce in a national context. If such is the case, the provinces should be made aware of the critical nature of certain land resources they are administering. The federal-provincial committee, recently established by the first ministers conference to study legislation relating to foreign ownership of lands in the various jurisdictions, is another example of the need for national coordination.

As an overall philosophy we are attempting to undertake studies which will permit the prediction of environmental impacts based on adequate data rather than constantly having to react quickly to provide assessments for announced developments. There is consensus that good land use planning is the key to good environmental management. If we plan carefully and skillfully it will not be necessary to remove our best lands from production. There is a clear requirement, however, to provide alternatives or at least an appraisal of the consequences of foreclosing the options for the use of our high capability lands.

We have an obligation to publish the CLI maps and data for the various regions as well as for all of Canada. We are generalizing the 1:250,000 map series to 1:1 million and the first maps will be published shortly. This scale will provide an excellent base for overall planning. The land capability data for the Maritimes and Alberta should be available within a few months and for all of Canada within 18 months to two years. These data should provide an assessment of which lands are critical on a national scale.

Of course we, as professionals, cannot expect sympathy from decision makers in the matter of protection of our critical land resources unless we begin to manage the resource. Until now we have been "shepherds" rather than managers. We tend to concentrate on counting the flock periodically and if there is no wolf evident we assume things are not going badly. Perhaps the statement is gratuitous but I often wonder if we are confusing shepherding with management.

In the very few minutes left I will report on the progress of and developments in the CLI program. With the exception of British Columbia, where the program will be finished in 1974-75, the work has been completed in all provinces. To date just over 338 of the total of 980 maps at a scale of 1:250,000 have been published.

In considering whether to extend the CLI program to include additional areas not covered by the original program the minister of the environment took the view that values in the northern areas would not justify coverage of the type carried out in the settled area. In general, data collection and capability mapping in northern areas should be related to development. In July, 1972, Cabinet

authorized the minister to cost share on a 50-50 basis with the provinces studies related to a specific or proposed development and which were oriented towards environmental assessment.

The first agreement negotiated under this authority was with the James Bay Development Corporation representing the province of Quebec. Signed in November, 1972, it covers the three year period to March 31, 1976 and provides for a 50-50 cost-sharing of environmental studies of mutual concern in the 140,000 square miles under the jurisdiction of the Development Corporation. Studies relating to national jurisdictions are undertaken by the government of Canada; those relating to the management of the resources are undertaken by the province. While agreements will undoubtedly vary depending on the area, the program being undertaken with Quebec will create a precedent for any subsequent agreement.

Our contribution to waterfowl management in Canada in 2000 A.D.

H. J. Boyd

If waterfowl management in Canada in 2000 A.D. retains the characteristics it has now, it will be confused in its objectives, base its practices on obsolete concepts, be inefficient and, above all, be ineffectual.

This will not matter as much to any of us then as it does to some of us now, for few will still retain any professional responsibility and many of us will be dead. But it would be agreeable if we could bequeath to our successors better information and better understanding than we now have; it may improve our handling of current preoccupations to give some thought to the Desiderata of the next generation of managers, and the ones after that.

One of the inescapable facts of managerial life is the existence of long delays between the generation and testing of an idea, its acceptance by the appropriate audience, and its practical application. Presumably because wildlife is a minor item in the list of social concerns and in an intellectual backwater, a lack of urgency is especially marked in our field.

F. C. Lincoln proposed four flyways for management purposes in 1935. Management of waterfowl on a flyway basis was not practised until 13 years later (Anderson and Henny, 1972). It has long been obsolete, because of the inability of waterfowl to read and abide by the relevant maps, but the idea of managing by stocks within the major species is still only being implemented very half-heartedly, half a century after similar approaches had been introduced in fisheries management.

The existing approach to waterfowl management in Canada is based on the premises that: the primary duty of managers is to preserve all species of migratory birds from extinction; and their second task (for which there is no statutory justification in federal legislation) is to optimize the harvest of the consumable surplus within the stocks of those species that are the quarry of hunters.

The primary duty receives token attention, if only for the perhaps sufficient reasons that no species of waterfowl native to Canada appears to be in imminent danger of extinction and that those species that are scarcest (probably Barrow's Goldeneye and the Harlequin Duck) occur chiefly in remote places and have not, until recently, seemed at much risk. Trumpeter Swans, Ross's Geese and Greater Snow Geese have all

ceased to appear in imminent danger, thanks to a fortunate combination of circumstances and improved techniques of appraisal, that have shown 10 or more to stand where only one was thought to stand before (figure 1). Some of our American colleagues, and J. D. Heyland of the Quebec Wildlife Service, have performed prodigies in this respect.

What are the relationships between specific abundance, rarity and management priorities? If some intrepid American were to demonstrate that *Camptorhynchus labradorius* still exists, what would we be expected to do about it? To what extent do we allow ourselves to be committed to the perpetuation of subspecific or other local stocks rather than to the larger concept of the species? The 5th AOU checklist of 1957, itself a monument of archaic taxonomic practice and 'splitting', recognised 10 subspecies of *Branta canadensis*; last year H. C. Hanson, an enthusiastic investigator, suggested that there were at least 32 subspecies (all but two breeding in Canada). Will we, or our successors, be obliged by public pressure to prepare and implement 30 management plans for Canada Geese?

How much will the inhabitants of southern Ontario in 2000 A.D. care about their last hundred Native Black Ducks, if, as seems probable, the Mallard population then is at least as high as that of both species together now?

With respect to the objective of optimizing harvest, it is hard to believe that managers of the future will be operating on the same lines as at present. First, it seems quite possible that sport hunting may be in decline 30 years on, and have ceased to exist in some parts of the country or continent. Compared with almost any other form of outdoor recreation, waterfowl hunting has shown a low rate of growth since 1967. The number of purchasers of migratory bird hunting permits has actually fallen in southern Ontario, a relatively prosperous area where the number of people is still being augmented by immigration and relocation.

In recent years, some managers have resorted to the comforting simplification that, if you ensure a sufficient supply of waterfowl to provide an adequate harvestable surplus, you will incidentally take care of the less onerous demands of non-consumptive users.

I doubt if that is so, for the relevant specifications of abundance, distribution and access are by no means identical. Bird watchers want variety, rarities, visually attractive habitats and spectacular assemblages of birds; hunters want relatively continuous supplies of ducks in small numbers in places and conditions where they can be shot at; farmers may not want ducks or geese at all; the majority of people may be almost wholly indifferent or prefer the presence of White Pekin Ducks to no ducks at all, to black ducks or, even, to a first record of *Mergus albellus* for Manitoba.

Most importantly, to assume that the needs of other birds can be properly met by caring for the requirements of the principal quarry species—especially those such as the Mallard and Canada Goose that have shown outstanding ability to profit from man-made changes in the landscape—is to ignore the ecological distinctions that are responsible for keeping separate species in being.

Another justification for clinging to major quarry species as being of most importance stems from undue deference to the pretensions and inadequacies of economics. You can estimate costs and benefits associated with hunting more readily than you can quantify aesthetic enjoyment, or so it is said. It would be hard to find a more ridiculous unit of measurement than the dollar. What branch of physical science is expected to make use of a continually, but erratically, eroding metric? Yet people who bow deferentially towards the dollar reject as subjective any attempt to elucidate and scale other approaches to the estimation of value.

Fortunately, only an extreme pessimist would suppose that another 30 years could pass without major improvements in the theory and practice of estimating and measuring values in non-monetary ways. The waterfowl manager of 2000 A.D. will surely not have to rely on such primitive notions as the dollar value of a duck, or of a man-day of recreation, in seeking to justify his choice of activities or to make his operations more effective.

Today, managers are largely concerned with year-to-year changes in waterfowl abundance and productivity and with the season to season variations in hunter activity and success that are more or less closely associated with those changes. Such preoccupations are understandable because the only management tool that can be widely seen to be manipulated continuously is the annual issue of hunting regulations under the Migratory Birds Convention Act. The acquisition and management of key areas may be more important, and produces more obvious effects locally, but the processes are slow and the costs seemingly high.

The education of landowners, farmers and other

users of land, to see the point of enhancing, or not needlessly reducing, the value of wetlands for producing and holding waterfowl and other wildlife may well be much more important but is even less spectacular and more uncertain in its outcome.

So, on the abbreviated time scale favored by politicians, the annual ritual of regulation setting seems an appropriate form of activity. For managers it is mischievous, because it diverts their attention and resources away from the recognition of longer-term changes and the causes underlying them, and because it perpetuates the idea that waterfowl, and other migratory game birds, need to be managed differently from other components of the natural environment. That is much less true than our conventional wisdom maintains.

The idea of waterfowl as beings apart narrows the interests of managers and researchers and so makes it harder for them to work effectively with other planners and managers concerned with renewable resources, recreation and land-use planning. Thirty years from now this insistence on separate identity will surely have ceased to matter, so that waterfowl management as a craft of its own will have ceased to exist.

Yet in 2000 A.D. resource managers will still be concerned about waterfowl and, with their wider and deeper perspectives, will be needing information from the past that we alone can provide, if we have the wit, wisdom and determination to do so. If natural resource management is to be effective in the long term it must be based on the identification and understanding of dynamic processes acting over large areas and long periods of time—decades and centuries, rather than days and years. That requires the ability to distinguish signals from noise, in which capacity we are at present extremely unskilled: our guesses about what is relevant and important have often been wrong and will not rapidly be improved.

In selecting what to look for and how to find it, how to record what we find and how to store it, I am therefore suggesting that we give much more attention than hitherto to our roles as procurers of historical documents and as historians.

The Canadian Wildlife Service has in recent years devoted much attention to the problems of data collection, storage and retrieval, particularly the applications of automatic data processing. The current need for national surveys and intensive regional and local studies generating rather large volumes of data is not likely to abate. My concern is that in obtaining and dealing with data in connection with immediate problems we should do everything practicable to make that information suitable for and available to a generation "which knew not Joseph". (Exodus 1, 8)

From my own experiences in trying to use material gathered 20 years ago in Ontario together with recent data to detect changes in duck breeding populations, it is clear that we must be much more meticulous about documentation than has been customary. Original field records and other source documents must be filed more carefully and annotated more fully: what was being attempted, why, and how precisely was it done? What went wrong and what expedients were used? Missing data and departures from design are inevitable in field studies. No attempt should be made to hide deficiencies, as something to be ashamed of.

Secondary treatment of results must be recorded clearly and explicity: the U.S. Bureau of Sports Fisheries and Wildlife has recently spent much time and effort in unravelling the primary data from the prairie waterfowl surveys from the adjustments to which they were subjected in varying ways over the years (Henny, Anderson and Pospahala, 1972; Pospahala and seven others, 1973).

We must learn from their experiences, as well as our own. The advent of ADP has added to, rather than reduced, the problems of acquisition, storage and retrieval, even while making possible much that could not be accomplished manually. At the acquisition stage, it imposes pressures towards uniformity of recording that are not wholly beneficial.

The design of forms is an art and filling them in is another. To design with a punch card or computer tape in mind is to aim for uniformity and the reduction of uncertainty. This may in turn lead to loss of information and the introduction of spurious precision, or to expensive over-elaboration to deal with anticipated special cases. There will almost always be cases that were not anticipated; and these may sometimes provide valuable clues. Observers must not be disciplined into close conformity at the cost of discouraging the use of their intelligence and superior powers of observation.

The hazards of ADP in respect of storage and retrieval are being demonstrated with sometimes embarrassing thoroughness within the CWS as time passes. Compilers and programmers are ephemeral, particularly when engaged under contract. They must be persuaded to record exactly what games they have played in transforming

original data to its stored form. Computers and ancillary equipment are repeatedly changing too, resulting frequently in programmes becoming obsolete. Verifying and ensuring the continued 'health' and accessibility of stored data are now seen to be crucial duties of our archivists. Even so, can we feel confident that data collected now will be retrievable in 30 years' time?

The initial enthusiasm and euphoria associated with computers is, fortunately, dying away, even in those backward groups like ours that come late into every game. The ambition of computer specialists to become latter-day disciples of Procrustes, the Greek robber who fitted his victims into a bed by lopping off or extending their extremities, has modulated into a growing emphasis on interrogative interactions between the user and the machine. Thirty years from now the state of that art will surely be vastly different. The primitive simulation modelling that was recently in fashion will have long since exhausted its entertainment value.

Today's hypotheses and models are crude and faulty. So indeed are the data we laboriously acquire. Observers can, at best, see only what they are looking for. Cameras and other sensing and recording devices are becoming increasingly more useful. Can we do a good job in exploiting them for long-term ends?

To sum up. The waterfowl managers of 2000 A.D. will not be interested in wearing our hats, however braid-encrusted, but they will be interested in the toys we have for them to play with. Some of the playthings should be of clinical cleanliness and technological sophistication, others should still bear the lineaments of humanity, whether in the form of handwritten annotations that are hard to decipher or mosquitoes flattened on to the pages of a notebook. I hope our successors will have fun, and do a better job than we are doing. It shouldn't be too difficult.

This review seems to have been predicated on the assumption that nothing much will have happened between now and the end of the century to alter dramatically the relationships between waterfowl, people and the land in Canada. It might have been more amusing to consider more colourful scenarios—the consequences of the outlawing of the private motor vehicle, the annexation of Canada by the U.S.A. or France, or a too-successful test of nuclear weapon by China, for example —but Canadian history favours the undramatic.

In any event it will already be apparent that my purpose has not been an exercise in futurology but an attempt to improve our current performance by enlarging our horizons, clarifying our thoughts and mastering the tools already at hand.

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Report from the administrative committee for polar bear research and management

C. Jonkel

The 5th meeting was held on July 9 with representatives from the Yukon and Northwest Territories, Newfoundland, Quebec, Ontario, Manitoba, department of Indian and northern affairs, external affairs, and the department of environment attending. Only the RCMP delegate was absent. The meeting was chaired by Dr. N. S. Novakowski, Canadian Wildlife Service.

Management changes in other nations, such as the 5 year moratorium on polar bear hunting in Norway, passage of the U.S. Marine Mammal Act, and the UNESCO international convention on trade in endangered species of wild fauna and flora, added considerable urgency to our business. As the federal-provincial polar bear technical committee and the Canadian delegates to the IUCN polar bear group depend on this administrative committee for co-ordination and guidance, reports on research and management progress in Canada during 1972-73 were heard.

Management progress included: a preliminary analysis of recent increases in the demand for and trade in polar bear hides; clarification by the NWT of what constitutes a "cub"; summer closed seasons in the Yukon and Northwest Territories; the long-awaited construction of an incinerator at Churchill; and limited progress in public information.

Areas noted which need management improvement were: better information to the southern public, to workers in the North, and on basic game management principles; restrictions on certain areas important to bears; improved hunting practices by Eskimo (Inuit) and Indian hunters; and a clarification of jurisdictional responsibility over the waters of Hudson and James Bays. It was noted that despite two attempts, several provinces had not yet responded to an administrative committee request for better control of hides throughout Canada.

Research progress had been made in delineating polar bear population centres and movements, the location of denning areas, calculation of productivity, determination of age from teeth, toxic chemical monitoring, and physiological studies. Projects to receive increased research emphasis are the Baffin Island studies; feeding area and polar bear-ringed seal studies; and polar bear physiology, productivity, and behavioural studies.

Reports were heard concerning the international agreement on conservation of polar bears, the U.S. Marine Mammals Protection Act, and the convention on international trade in endangered species of wild fauna and flora. Canada's position on these documents was discussed at length, resulting in several improvements and a clearer understanding of the important aspects of each.

The resolutions of the technical committee were heard and approved. The administrative committee adopted five of the resolutions, with Drs. I. Stirling and G. Moisan, F. Walden, and Wm. Sinclair doing the drafting. They read as follows:

Resolution 1

Whereas the participation of Canada in an international agreement with respect to polar bears is imminent, and

Whereas the Game Export Act (Canada) is considered to be insufficient for this agreement, and

Whereas the administrative committee is concerned about the urgent necessity to control the legal harvest of polar bears and to prevent illegal kills, and

Whereas certain provinces now have legislation requiring that no untanned pelt of a polar bear may be sold or traded unless it bears a locked seal issued by the territory or province of origin,

Recommends that each remaining province make it an offence under its appropriate legislation to export or possess an untanned, unsealed polar bear hide,

And it is further recommended that the director of the Canadian Wildlife Service assume responsibility for informing all other federal departments of the government which may be concerned, and the commissioner of the RCMP, of the status of legislation in the various provinces and territories.

Resolution 2

The administrative committee, noting that Canada, U.S.A., U.S.S.R., and Japan plan an extensive scientific evaluation of the ice and currents of the central Arctic basin in 1975 and 1976 under the auspices of AIDJEX (Arctic Ice Dynamics Joint Experiment), and

Noting that present Alaskan and Canadian information on polar bears adjacent to the Arctic basin strongly indicates the presence of a somewhat discrete population of polar bears in the basin whose productivity is centred in the old pack ice of the basin, and

Noting that an IUCN proposal for the five polar bear nations and IUCN to study jointly the bears of this area may be forthcoming, and,

Noting that the AIDJEX co-ordinator has tentatively offered the assistance and cooperation necessary to make the proposal possible,

Endorses and encourages cooperation with IUCN and AIDJEX by the Canadian Wildlife Service and any of the provincial or territorial jurisdictions able and willing to contribute funds or scientists for periods up to three months.

Resolution 3

The administrative committee, noting that the Manitoba government and the Canadian Wildlife Service have successfully cooperated on denning ground investigations along the Manitoba coast which have resulted in new and useful knowledge of polar bear biology and productivity in this area, and

Noting that the Quebec government, N.W.T., Newfoundland, and the Canadian Wildlife Service plan similar cooperative research in Ungava Bay,

Recommends that all jurisdictions concerned undertake denning studies of polar bears unilaterally or in cooperation with the Canadian Wildlife Service.

Resolution 4

The administrative committee noting that a yearly review of regional zonation and kill limits is helpful to effective management of polar bears, and

Noting that such a review does not impair the authority of the jurisdictions concerned, and

Noting that such kill limits must remain flexible, and

Noting that biological data do not indicate that the kill limits should be reduced,

Recommends that the allowable kill in zones A and C through H be shared among the jurisdictions as below:

Zone	Manitoba	Ont.	NWT	YT	Que.	Total
A'	50					50
A''		30				30
A'''			15		5	20
C			147		15	162
D/F			164			164
E			51			51
G			*			—
H			60	6		66
Total	50	30	437	6	20	543

*To be determined empirically by the Northwest Territories.

And, further recommends that the proposed kill limits for these management zones continue to be reviewed annually using new data available.

Resolution 5

The administrative committee, noting that the use of posters by the Manitoba government in the Churchill area served to inform people of the potential danger of polar bears in that area, and

Noting that there are greatly increasing numbers of inexperienced people living, working, and travelling extensively throughout polar bear habitat, and

Noting that considerable public mis-information exists about endangered species, game management, and bear-man problems;

Recommends that the technical committee provide information to guide the administrative committee in the production of publications and posters:

1. to warn travellers throughout the north of the danger relative to polar bears, and,
2. to inform the public generally of the status and management of polar bears throughout their Canadian ranges.

Report of administrative committee for caribou preservation

N. Novakowski

The meeting was convened by the chairman, Dr. John S. Tener, who welcomed the representatives. The agenda items included discussion of the most pertinent subject and that is the establishment of a working management committee in relation to the Kaminuriak and Beverley herds.

This management committee is charged with the responsibility for setting research and management priorities of the two provinces involved and the Northwest Territories, to share costs and to allocate the resource between them. Due to several administrative difficulties, the management committee in the past was ineffective but we have the assurances of the two provinces, Saskatchewan and Manitoba, that they will send a senior representative to the management committee and thus make it operate effectively. A similar organization is apparently working very effectively in respect to the Quebec-Labrador herd involving the provinces of Quebec and Newfoundland and the Canadian Wildlife Service. Another similar organization with an international content involves the Porcupine caribou herd.

The documentation of present and proposed caribou research and management programs in the provinces and territories represented on the committee will be presented in the minutes but it has already been distributed through the technical caribou committee minutes which are already in your possession. Also the committee decided that they would consider all species of the genus Rangifer, which would thus include participation by almost every province in the administrative committee. Although the technical committee, largely because of its workshop session, has an international content with representatives from Alaska and the northern tier of states invited, the decision was made to keep the ACCP completely Canadian in content and representation, largely because it is a policy-making group.

The resolutions of the technical caribou committee were discussed and approved with some amendments. These resolutions were included in the minutes of the technical caribou committee meeting which is appendix 3 in the document sent to you.

Resolution 3

The concensus was that no transplants would be made without background or advance studies on feasibility. Although transplants can be justified for many reasons, including the historical presence of caribou in a particular place, it was felt that advance studies prior to the transplant would reduce the risk of an unsuccessful transplant.

Resolution 4

This involves the protection, particularly of calving areas, from harassment by low flying aircraft and the possibilities for producing a notice to airmen asking them to honour the guidelines as set out by the game management service of the Northwest Territories government. It was approved, that government has also contacted air companies and has received a great deal of cooperation up to now.

Resolution 5

This involves the setting aside of land use areas in the Keewatin District. The presentation by Curt Merrill was optimistic in that he believed that certain areas in Keewatin, when identified, could be placed under the land use regulations but that in general terms the land use regulations do not apply. Of particular concern at the present time is not only land use practices involving critical areas in the Keewatin District but also land use requirements for an eastern arctic pipeline.

Resolution 7

It was proposed that the management committee should look very hard at a study of predator-prey relationships involving the Kaminuriak herd, particularly during the calving period, and that researchers and management biologists be enjoined to develop new techniques for localized predator control when deemed necessary. To this end the management committee would be supported to the fullest extent possible by the Canadian Wildlife Service with expertise; and financially and otherwise by an Indian and Eskimo economic affairs branch of the department of Indian and northern affairs. This latter organization is seeking full participation in studies which may affect the socio-economic structure of Indians and Eskimos in that area.

The final item included the appointment of a new chairman, Dr. Tener relinquishing the chair to Dr. N. S. Novakowski. Dr. Don Flook was then nominated secretary of the ACCP.

Report of the Canada Fur Council meeting

D. H. Gimmer

Reports were presented by the various committee chairmen dealing with market research and development; fur resource management and research; ranched furs; wild fur producers; and information, publicity and promotion.

Substantial efforts in market development were undertaken in connection with fur fairs in Thessalonika and Frankfurt by I.T.&C. in cooperation with the provinces, territories and DINA. The market situation was reported as very buoyant and prospects for 1973-74 fur season are very promising.

Plans are being formulated to hold a technical session on furs in which all provinces and territories have agreed to participate.

Dr. Novakowski reviewed for council members the convention for the control of international trade in endangered species of fauna and flora.

Extensive discussion took place with respect to humane trap development and implementation. A concensus was reached that a concerted and coordinated federal-provincial effort must be initiated for the development and introduction of humane trapping technology.

The need for establishing a clearing house for information regarding fur was identified but no concenus as to how this might best be achieved was reached. It was suggested that a need exists for a national trappers' manual and the executive agreed to take this under advisement and to explore ways and means of developing a suitable publication.

A proposal was put before the council for the placing of an impost of ½ of one per cent of the value of all furs at auction house level. The funds derived from this source to be used for promotion research and development of Canadian furs. It is proposed that ⅛ of one per cent be assigned to the International Fur Federation and the ⅜ per cent to be pro-rated on the basis of volume between Canada Mink Breeders Association and the Fur Fashion Council of Canada. The Fur Fashion Council of Canada is operating as the promotional arm of the Canada Fur Council. This proposal will be investigated and implemented if the cooperation of the auction houses can be secured.

Mr. Dave Gimmer was returned as chairman of the council for another two-year term. The meeting adjourned at 11:30 p.m.

There was general agreement by the membership that more time was required to deal adequately with the many subjects requiring the attention of the council. It is essential that adequate time be allotted for council deliberations and the best way of achieving this is thought to be a Sunday afternoon meeting prior to the start of the Federal Provincial Wildlife Conference. The executive will pursue this matter with the aim of developing firm arrangements for next year at an early date.

The minutes of the meeting will be prepared and circulated to council members and to the secretary of the conference.

Federal-Provincial co-ordination of information programs

J. Hatter

This is really not a report of the committee comprised of Dr. Moisan, John Cameron and myself as we did not meet during what has been a very busy year for us in British Columbia. Dr. Moisan has changed jobs leaving John Cameron and me for the exchange of ideas.

Recommendation 10 from the 1972 Federal-Provincial Wildlife Conference stated:

> Whereas the activities of the Canadian Wildlife Service and provincial wildlife agencies experience considerable overlap of interest; and
> whereas there is often a lack of familiarity with each other's program;
> it is recommended that a formalized co-ordination of public information and promotion programs be developed.

My letter of June 12 to the provincial directors resulted in some helpful replies. Its purpose as you will recall was to seek opinion about areas in which there could be co-ordination of public information and promotion programs in a practical and helpful way.

I indicated that I had some doubts about the wording of recommendation 10 and the need for close co-ordination and promotion programs between federal and provincial agencies due to our somewhat different responsibilities and jurisdictions. I suggested however, that we should team up in common areas where we experience similar problems.

Gordon Kerr reminded me that recommendation 10 really grew out of the feeling that we must avoid such things as making films or producing educational material which might have unforeseen adverse ramifications for other wildlife agencies which deal with particular public attitudes. I believe the idea was to try and avoid future criticism and disagreements such as I recall did occur when we first viewed the film Atonement and perhaps later with Death of a legend.

There is support for John Cameron's suggestion of a multi-agency sponsored movie on the principles of wildlife management and the case for hunting. A one-hour feature movie, cost-shared between all provincial and territorial agencies and the Canadian Wildlife Service, is something to which we should address ourselves at this time.

The question of listing our respective films, pamphlets and other material so that other provinces and the CWS will be aware of each other's work does have merit. However, I believe that this is somewhat of a side issue to the intent of recommendation 10. John Cameron has put together what has been received but at present this is not really suitable for a master list for circulation. A start has been made.

In British Columbia we are running a series of television shows on various subjects relating to fish and wildlife management. These are designed for B.C. viewers and would likely not be meaningful all across Canada.

Rod Cameron of our information and education section makes some valid points on recommendation 10 and I will pass on a few of these for you to think about.

1. It is not uniformity that is needed but rather the *prevention* of inconsistencies or conflicts.
2. We must guard against films and stories that *are too general to have specific relevance to particular* areas and therefore fail to sustain public interest.
3. It is suggested that high impact and emotional material, both written and filmed, is dulling the sensitivities of most audiences.
4. What we need are goals and guidelines that we can follow on an individual local basis to explain attitudes and problems we share quite generally.
5. We are in fierce competition for public attention and therefore high quality, relevant material is a necessity if we are to capture public attention.
6. We cannot take a chance on sacrificing relevance and quality simply for the sake of the appearance of co-ordination.

I think these points must be considered as we pursue the suggestion of a hunting and conservation movie for all of Canada. We must be careful to identify for the viewer where the action is occurring and point out that while Canadians experience much in common there are many differences in hunting conditions and traditions across the country. The principles of harvest, however, are the same. The point Rod Cameron has made in his recommendations is that one film or one article for all of Canada—the mass production approach—will likely be a cop-out.

I suggest that in this next year the committee give much thought to methods and guidelines that will point the way for all of us to go with our particular publics. Our approach should be similar but details and methods will probably differ.

Recommendations of the 37th Federal-Provincial Wildlife Conference

Recommendation 1
That the conference express its appreciation to the government of Canada and especially to the Honourable Jack Davis and Dr. John Tener, director general of the Canadian Wildlife Service and their staff for the excellent arrangements and hospitality extended to the delegates at the 37th Federal-Provincial Wildlife Conference.

Recommendation 2
That the Canadian Wildlife Service be commended for its expansion of socio-economic studies related to Canadian wildlife and that a long term plan of study be drafted following consultation with the provinces. A progress report on the feasibility of such a plan should be provided at an early date prior to the next Federal-Provincial Wildlife Conference.

Recommendation 3
That the conference endorse the implementation of the proposed data collection system as outlined in response to recommendation 7(a) of the 36th Federal-Provincial Wildlife Conference.

Recommendation 4
That the conference endorse the further pursuit of the compilation of wildlife-based commercial statistics to include information on non-consumptive users; and that there be continued exploration of the possibility of data collection on wildlife killed by subsistence hunters; and that the Canadian Wildlife Service continue to co-ordinate the compilation of these data.

Recommendation 5
That a three-man sub-committee be set up by the conference chairman to investigate the feasibility and desirability of publishing a journal covering various resource management topics, especially in the areas not now covered by biological journals, e.g.: training, licensing, innovations, public participation. This committee should circulate a report with recommendations before the next Federal-Provincial Wildlife Conference for a decision at that time.

Recommendation 6
Whereas the eastern provinces are anxious to receive guidance concerning their respective roles in waterfowl management, be it resolved that early action be initiated by the Canadian Wildlife Service to develop a long term management plan for the region.

Recommendation 7
That consideration again be given to the formation of an eastern Canada Wildlife advisory committee.

Recommendation 8
That the conference request the Canadian Wildlife Service arrange for a meeting of representatives of all provinces and territories by September 30, 1973 to consider a program for humane trap development, trapper education and research; to establish goals, objectives and alternatives to present fur harvest techniques; and to establish a program steering committee which will be asked to present a progress report to the conference in 1974.

Recommendation 9
That the conference express its appreciation of the contribution made by Dick Passmore to the wildlife management field during his tenure as executive director of the Canadian Wildlife Federation.

Recommendation 10
Whereas the views with respect to the objectives, membership, executive, size of conference, location, timing, format, content and procedure as presented in the report of the committee to re-examine the Federal-Provincial Wildlife Conference were generally accepted in principle, it is therefore recommended that the suggestions and recommendations contained in the committee's report, together with the comments from the delegates, be reviewed and the appropriate action taken.

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