ONTARIO

KANSAS
FORESTRY FISH AND GAME
COMMISSION

# PROCEEDINGS

OF THE

TWENTIETH ANNUAL MEETING OF THE ASSOCIATION OF MIDWEST FISH AND GAME COMMISSIONERS, HELD IN THE ONTARIO FOREST RANGER SCHOOL, DORSET, ONTARIO, FRIDAY AND SATURDAY, AUGUST 14-15, 1953.

DR. W. J. K. HARKNESS, President,
Presiding.

DR. C. H. D. CLARKE, Secretary-Treasurer.

R. C. Sturgeon,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

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AND GAME COMMISSION
No.

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Dorset, Ontario,
Friday, August 14, 1953,
9:00 o'clock, a.m.

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THE PRESIDENT: Gentlemen, shall we come to order?

It is a little earlier than the time mentioned in the agenda for opening, but as we are all present, it would be a good idea to get started, and thus allow more time for discussion on certain aspects of our agenda.

In the absence of the Minister, the Honourable Welland S. Gemmell and the Deputy Minister, Mr. Frank

MacDougall who will be with us later, I welcome you to the first meeting of this Association to be held in Canada, and now declare the Twentieth Annual Meeting of the Association of Midwest Fish and Game Commissioners open for the business of the Association.

I am certainly delighted to see so many of you here and hope that your stay will be pleasant and profitable.

We have with us today, Mr. Ruxton, the Director of the School. I now call upon him to outline the programme of the School, and to give you as full information as possible on the work that we are doing here.

MR. J. RUXTON: Mr. President and gentlemen: May I add a word of welcome from the School, to that given by our President. We do welcome you here, and trust you will have a very enjoyable time, and a successful meeting. If there is anything we can do to make your stay more pleasant and comfortable, please let us know. (Applause).

THE PRESIDENT: It may be of interest to you to hear something about the Fish and Wildlife situation in Ontario and of our organization for administration of these resources.

Head Office organization of the Department of

Lands and Forests consists of ten divisional chiefs who with their staff constitute Head Office staff.

The Province is divided into twenty-two districts for administrative purposes with each district being under the supervision of a district forester who constitutes the administrative authority for each district. He in turn has in his district office a counterpart of Head Office organization with specialists responsible for supervising the work of each administrative division. Throughout northern Ontario each district staff includes a Fish and Wildlife officer and a fire protection and timber management officer. In southern Ontario these two latter are replaced by reforestation officers.

The district foresters are experienced men who may be professional foresters, biologists, or men who have been in the service for many years and who have demonstrated administrative ability.

There are seven regional foresters who have a general supervisory responsibility respecting implementation of policy and personnel matters as carried out by the district foresters. Government policy is established by Legislative action and within the limits of Legislation by the Minister with the assistance and recommendations from the Deputy Minister and his divisional chief

staff. Departmental policy is established by circulars emanating from the Deputy Minister's office. Regional foresters and district foresters are directly responsible to the Deputy Minister.

The Fish and Wildlife Division which constitutes one of the ten of the Department is made up of four sections.

The section dealing with Game and Fur is under Doctor Clarke's supervision; the section dealing with Game Fish and Hatcheries is under Doctor MacKay; the section dealing with Commercial Fish is under Mr. Werner's supervision; and the section dealing with Law Enforcement is under Mr. Farrington's supervision. I am sorry to say that neither Mr. Farrington nor Mr. Werner were able to be at this meeting today.

In addition to the specific work of these four sections, my Division is responsible for the licensing of 1500 odd tourist operators scattered throughout northern Ontario, and for the maintenance and operation of nature trails in the Provincial Parks, and the Algonquin Park museum which work is under the immediate direction of Mr. Helmsley with whom you will get better acquainted when we visit Algonquin Park and the museum this evening.

The field staff includes two hundred uniformed conservation officers, about twenty wildlife management officers, some fifteen biologists and some eighty hatchery personnel. It may be of some interest to note here that there is something in the order of one thousand uniformed personnel in the Department of Lands and Forests.

Our district biologists may be trained primarily for work either in fisheries or wildlife but are expected to deal with situations in either field as teams or individually.

They are responsible for investigations arising from administrative needs or as requests from the public.

The biologist assesses the results of his inestigation and recommends certain action to the district forester. The district forester may authorize the biologist to proceed with a management programme if it falls within the authority of existing legislation, regulation and policy. If it does not, the district forester refers the recommendation to Head Office for consideration and if satisfactory, approval and authorization.

I can cite examples illustrating these points. In the first case, the biologist who makes a survey of certain waters and finds in his opinion that they should be planted with either speckled trout or some other species,

such as, bass, he recommends accordingly and the district forester may authorize him to take that action. When he has done so his further responsibility is to follow up, check and assess each management programme developing a case history for each so that he can properly evaluate the results thus making each small management project an experimental unit.

In the second case, if a biologist as a result of investigations recommends the closure of a lake for a year, the district forester does not have authority to take such action so refers it to Head Office where it is studied further, and if approved, the necessary machinery is set in action to have the lake closed by regulation.

Our Province has a relatively high potential as a fur producing area. A few years ago Mr. Grew joined the Departmental staff primarily for the purpose of establishing a fur management programme, and about a year ago Doctor Reynolds was added to Mr. Grew's staff.

Our most important fur-bearer is the beaver of which something less than forty thousand skins were harvested in 1946. The fur management programme initiated and carried out under Mr. Grew's guidance and with the aid of favourable natural conditions resulted in a very

great increase in the population of beaver and other fur-bearing animals with a production during the current year of something over one hundred and thirty thousand beaver skins produced. Other fur-bearers of importance are the muskrat, marten, otter and fisher. At the initiation of the fur management programme, the populations of marten and fisher were at a very low ebb but through the distribution of these fur-bearers from areas of high population areas of low population, the population has been increased until now it produces a sizeable and valuable harvest.

At the present time, we are operating two experimental traplines for the purpose of determining maximum production, reproductive capacity, harvestable crop, rate of repopulation after a heavy trapping and other facts of importance as a basis for successful fur management.

Deer are present over all of southern Ontario extending northward as far as the province has been opened by forestry and agricultural activity. They are also present throughout the southern area of western Ontario from the Nipigon area westward.

Moose are present in all of the continuously

forested area of the Province in varying intensity of population becoming scarce northwards and disappearing considerably south of the Hudson Bay coast.

This year we have a resident and non-resident season in the mid-northern area and a December resident season throughout the major moose producing area.

The northern forest of Ontario formerly supported a good woodland caribou population which at present is in the order of five hundred to six hundred animals in the south with considerably more in the north and increasing in numbers, we believe.

The Hungarian partridge is found in many parts of southern Ontario with an excellent population in the eastern counties.

The ring-necked pheasant is limited to southern Ontario with a major concentration along Lake Erie and especially on Pelee Island.

Ruffed grouse have a Province-wide distribution but the population is light in the southern agricultural portion of the Province.

The two main maskinonge fishing areas are the Kawartha Lakes and Lake of the Woods, although there are 'lunge all through the Ottawa, St. Lawrence and Great Lakes drainage.

The small-mouthed bass are mostly limited to Ontario south of the French and Mattawa Rivers and the North Channel of Lake Huron and in the Lake of the Woods area of Western Ontario.

There are speckled trout in suitable waters Province-wide with the exception of a few eastern counties and the southern portion of far western Ontario where there are none in the Lake Winnipeg drainage. Doctor MacKay is now working on their introduction to these waters but with mediocre success up to the present.

There are brown trout intoduced successfully in many southern Ontario waters, Kamloops are being introduced with considerable success in selected waters in mid-southern Ontario and ouananiche have been established in Trout Lake. We have spawned these successfully and now have two year olds in our hatchery which we hope to raise to maturity to provide eggs for introduction into selected waters.

The Constitution of Canada and the Provinces is set forth in the British North America Act which gave the provinces control of game and Canada control of fisheries.

The Province of Ontario has complete responsibility for the administration of its game, with the expection

of the migratory birds. The provinces consented to the Federal Government entering into a Treaty about 1916 providing for the setting up of a migratory bird conveniton Act, under which the Province no longer had the authority for the administration of the migratory water fowl, which became a Federal responsibility. The regulations under the Migratory Birds Convention Act are arranged by mutual agreement between the province and the Federal Government, at annual meetings, and by correspondence.

What we do is to recommend to Ottawa, and they set them up.

Our officers are ex-officio officers under the Migratory Birds Convention Act, and we do about 90% of the enforcement of the regulations, with the Federal police doing about 10%.

The fisheries are administered under the Federal Fisheries Act with special regulations set up by the Federal Government on recommendations of each province. These regulations transfer the responsibility of administration of the fisheries to the Provinces.

The Game and Fisheries Act constitutes our Legislation and is firm, but it provides for regulations which may be set up at any time during the year.

These regulations establish seasons and deal with other administrative activities which require seasonal action rather than firmly established rule.

I see that two or three more have arrived, and we might have a five-minute break, so that they may be enrolled.

---- Whereupon a short recess was had.

---- Upon resuming.

THE PRESIDENT: Gentlemen, will you please come to order? Mr. Ruxton has some bad news for you, which he would like to announce at this time.

MR. RUXTON: I am sorry to give you this bad news, but we had better get it over with. It is like castor oil, the sooner you take it, the sooner you get it over with.

The Accountant has just informed me that the room rate is $1.50 per night, instead of $1.00, which was the figure I gave you before.

THE PRESIDENT: There were a couple of other points I was going to mention. We have not a complete account of the lakes in the province, but we estimate about 800,000. We have about forty aircraft, and we have 440,000 square miles in the Province, about one-fifth of which is supposed to be water area.

Now, we come to the roll call on our agenda.

I think we might have the roll call by States, and whoever is representing the State, may apply.

Colorado; Mr. Thomas L. Kimball

Illinois; Absent.

Indiana; Mr. Harley Hook

Iowa; Mr. Bruce F. Stiles.

Kansas; Mr. Harry Lutz

Manitoba; Absent.

Michigan; Mr. H. D. Ruhl

Minnesota: Mr. E. F. Willard

MR. WILLARD: I am the Deputy Commissioner, Mr. President.

THE PRESIDENT:

Missouri; Mr. I. T. Bode

MR. BODE: There are two others with me, Mr. President.

THE PRESIDENT:

Nebraska; Absent.

Ohio; Mr. Charles Dambach

Ontario; Dr. W. J. K. Harkness

South Dakota; Absent

Wisconsin; Mr. G. E. Sprecher

THE PRESIDENT: That brings us to the announcements. Do you want to make any announcements, Dr. Clarke?

DOCTOR CLARKE (Secretary Treasurer): Yes, I have here a list of airline reservations, which have to be confirmed. If anyone is here who has not confirmed his reservation, will you please do so immediately?

The other announcement is that the programme will be changed slightly in that the films which were to be shown in the school, will be shown in the museum in Algonquin Park this evening. Immediately after dinner, we will take cars and go directly to the Park Museum, where you will have the opportunity of seeing the museum, and then seeing the films, and then returning here. It will provide probably a sort of a "break" in our proceedings.

THE PRESIDENT: The gentlemen who have their wives with them can, of course, take their wives to the museum and the movie tonight.

We issue complimentary fishing licences in the province of Ontario -- at least, the Minister does. He is the only one authorized to issue such licences. He has provided me with a couple of dozen, temporary, short-term licences, and asked me to look after any of you gentlemen who would like to do some fishing. So if any of you would like to do a "spot" of fishing during your visit, I would be very glad to give you one of the Minister's

temporary licences.

We will now have the report regarding last year's resolutions.

DOCTOR CLARKE (Ontario): Mr. President and gentlemen; I have noticed from the transcript of a previous meeting, there has not been any reading of minutes. This (indicating) is the record from last year's meeting. I notice in some years, they have distributed copies to all members, but did not do that last year.

I would like to make a suggestion that the meeting consider duplicating last year's proceedings.

MR. STILES (Iowa): The last two years.

DOCTOR CLARKE (Ontario): Perhaps we could make it as a recommendation to the incoming executive, that they look into that question. In regard to the cost, may I say we are reasonably solvent, as will be seen later.

It has not been the custom to read the minutes at these meetings, and I thought you might be interested in knowing what happened last year.

Resolution No. 1, was an expression of approval of the plan of the International for the disposal of the cumulative surpluses of the Pittman-Robertson fund. That was passed on to the International, but the minutes did not come into my hands until long after the International

meeting, and I assume that at the time of the meeting in Texas, someone indicated that the Midwestern Association had supported this proposition.

Resolution No 2, was the approval of the Robertson Bill which also was forwarded to the International.

Resolution No. 3, was the Association going on record as disapproving of the bounty system as a means of predator control, which was also passed on.

Resolution No. 4, was a resolution in respect to the matter of some kind of a roster of research projects to avoid the duplication of effort, and it called for this resolution to be passed on to the Fish and Wildlife Service and the American Fisheries Society, which was done.

Resolution No. 5, was approval of the policy statement of the National Resources Council.

Resolution No. 6, was an endorsation of the International resolution in connection with flyway councils in waterfowl management.

Resolution No. 7, was supporting the Tackett Bill, which was likewise handed to the International.

Resolution No. 8, was a statement regarding the policy, and was in support of the International Association.

It was in praise of the policies with respect to water areas followed by the United States Department of Agriculture, and required a letter to be sent to the Secretary of Agriculture.

By the time we got this into circulation, it was obvious there was going to be a new Secretary of Agriculture, and in due course, we wrote to him, and we have a nice letter back from him acknowledging receipt of this and expressing his interest.

Resolution No. 8, was a recommendation on colours, which was passed on.

Resolution No. 9(a) was one also for "Jim" Thompson, and it was passed on, and we have on our files, correspondence which shows that in the course of time, the letter which was sent from the Association to Mr. Thompson, forwarding to him a copy of this resolution, and expressing appreciation of his work, was incorporated in the Congressional records.

Resolution No. 10, was a similar appreciation of the work of Mr. Lyle F. Watts. That was passed on to him, and we got a very nice letter of appreciation in reply from Mr. Watts, from his new home in retirement in the West Coast area.

That, gentlemen, is all.

There has been a little confusion, which became obvious from the record, that certain matters had to be delved into. The question of the change of name of our Organization was Mr. Bode's baby, and he was quite content, after a great deal of correspondence, to let it be.

We went into the question as to the time and place of the next meeting. We contacted all we possibly could of the various groups which are associated with this Organization, as potential candidates for the meeting, and it was suggested we have our meeting at the same time and at the same place. All of them seemed interested. They did not disapprove the general idea, but I do not think there was a single one of them who could see how actually it could be brought about.

If any of you are interested in the correspondence on this, I would be glad to show it to you, but the conclusion seems to be that is a "dead pigeon", for the time being, anyway. We carried it as far as we could.

Then, it appeared last year it was the wish of the Association to appoint a permanent standing committee on this question of the co-ordination of administrative procedures, which was discussed at great length. It was,

in fact, the feature of last year's discussion. It was not quite clear in the minds of Mr. Morgan, or Mr. Wilson, who made the proposal, as to who was to be the Chairman. At any rate, nothing was done, and that will be the first job of the incoming executive, that is, to appoint someone as Chairman of this Standing Committee, seeing that the wish of the Association is very clear, and presumably still stands.

What we have done instead is to set up a programme which will come up tomorrow morning, on the subject of "Public Administration". Mr. Wilson was going to lead the discussion. We will have an address by the Professor of Public Administration of the University of Toronto, who is giving courses to our Department of Lands and Forests senior personnel, which have been very stimulating, and he proposes to deliver his address in such a way that there will be the maximum opportunity for decision, and questions which can be answered from the floor.

I presume Mr. Wilson has briefed Mr. Willard, on some of the things he was going to say. It will be discussed by all and sundry, but we will give Mr. Willard the preference.

MR. WILLARD (Minnesota): What I will have to say will be very informal, because I did not know much

about this before.

DOCTOR CLARKE (Ontario): That is the best we can do to cover up the fact that there has not been, for various reasons, an active, functioning committee of this kind, to co-ordinate the administrative procedures.

I think, Mr. President, that is all that is left over at this time from last year's meeting, as far as I am concerned.

THE PRESIDENT: You just presented the resolutions.

DOCTOR CLARKE (Ontario): I identified them, and told what was done in each case.

THE PRESIDENT: A resolutions committee will be appointed a little later. Is there any discussion on Doctor Clarke's report?

MR. STILES (Iowa): I have one question I would like to ask. Did we just have the one copy of the proceedings for all of our meetings in the past?

THE PRESIDENT: No. The meeting at Ohio was duplicated, because I know we each had copies of that. The next meeting was in Kansas.

DOCTOR CLARKE (Ontario): The meeting at Milwaukee was duplicated.

THE PRESIDENT: The one in Kansas was the next one. I do not think it was duplicated.

MR. STILES (Iowa): There was just one copy made last year?

THE PRESIDENT: Doctor Clarke was considering that we as a group consider getting last year's transcript duplicated, and probably going back to the year before.

MR. STILES (Iowa): I think that would be a good idea. I wonder if we should not adopt some standard practice in regard to making copies of the proceedings, and determine whether they will be paid for by the State or Province holding the meeting, or out of the funds of the Association. There never has been a standard practice on this, and I think probably there should be.

As I understand, Doctor Clarke, you said the finances of the Association are such that we can afford it?

DOCTOR CLARKE (Ontario): I am basing that on this year. We received the money from Mr. Faber, which was a very substantial amount. By the way, all our fifteen State and Province members are paid up, and up to now, our expenses have only been minor bank charges, and exchange on United States funds, and nothing else. The only expense we anticipate is in connection with the proceedings of this meeting. It seemed to be a very desirable and legitimate thing to do, and we figured on going ahead, and we went ahead on our own.

MR. STILES (Iowa): Mr. President, I would like to move that the minutes of the past two meetings be mimeographed -- those which were not -- and distributed to various members and that some instructions be conveyed to the Secretaries, as they come along, to have them mimeographed in the future and paid for out of the funds of the Association.

If that is in order, I make that as a motion. Or should it come up at the business session later on?

THE PRESIDENT: I think we might deal with it as arising out of the minutes. Unless someone thinks it is not in order, we will proceed with it.

MR. SPRECHER (Wisconsin): How many copies would there be?

DOCTOR CLARKE (Ontario): There is no advantage in a small number.

MR. SPRECHER (Wisconsin): I would like to suggest at least five copies to each State.

MR. STILES (Iowa): I will incorporate that in my motion.

THE PRESIDENT: That is, last year's and the year before? Shall we designate that Ontario should have it done?

MR. STILES (Iowa): I think if Ontario would do

it, and it be paid for out of the funds of the Association --

DOCTOR CLARKE (Ontario): How about having the incoming Secretary do it, because he has a long period of comparative inactivity?

MR. FABER (Iowa): I recall one of the reasons we did not print it was I think that one year's fund was not enough to carry on the meeting and print it.

THE PRESIDENT: If Mr. Stiles wants to include in his motion that Ontario do this, we will be glad to accept the responsibility.

On the other hand, if you think the incoming Secretary might do it, it would not hurt our feelings, but we will certainly be prepared to accept the responsibility. If you give us that responsibility, we will do something to look after it some way. We will accept the responsibility and handle it some way.

MR. STILES (Iowa): I will include that in my motion.

MR. KIMBALL (Colorado): I second that motion.

THE PRESIDENT: Are you all clear as to the motion? There were two slight amendments. You heard the original motion.

MR. SPRECHER (Wisconsin): When I said "five to each State", I meant each State and Province.

THE PRESIDENT: Is there any further discussion? (No response). If not, what is your pleasure?

(Motion carried unanimously).

MR. STILES (Iowa): Mr. President, there is one other feature which comes to my mind. As time goes on, the Secretary may not know about this. Should we provide some means of conveying the information from year to year, to the incoming Secretaries, that this is part of his responsibilities? I have no thought how we could do that. Should it be part of the Constitution or the By-laws?

MR. KIMBALL (Colorado): The outgoing Secretary should instruct the incoming Secretary.

THE PRESIDENT: Does that not need a notice of motion?

DOCTOR CLARKE:(Ontario): Yes. The By-law states: "That changes in the Constitution require notification in advance of the Annual Meeting.

THE PRESIDENT: Yes, that is as I understand it.

MR. KIMBALL (Colorado); You say that must be in advance of the next annual meeting?

DOCTOR CLARKE (Ontario): Yes.

MR. STILES (Iowa): That seems to be alright.

THE PRESIDENT: Anything else arising out of the minutes? I think there has been a good discussion on the minutes.

Now, we have come to the topic on our agenda, "Water Fowl Meeting at Washington, August 7th". Where did that come from?

DOCTOR CLARKE (Ontario): Their are some here who were there, and can tell us what it was all about, and there are some who were not there who will probably want to know.

THE PRESIDENT: Do you want to hear from Mr. Solman? If so, I will call upon Mr. Solman at this time to present a report on the Washington meeting.

MR. V. E. F. SOLMAN (Ottawa): Mr. President and gentlemen;I do not know exactly what to tell you about the meeting. The regulations which were announced are public knowledge. I was looking over a copy of them here, and as I recall, there were two meetings, a meeting on Flyways,Council, and the Advisory Committee was represented on the Flyways Council and were very much in agreement as to what should be done in regard to the seasons, bags, and so on.

On looking over these resolutions put forward,

which numbered 11, it looks as if they have been going up. However, everyone seemed to be very much in agreement on them.

The impression I obtained from attending the meeting was that there was a very great atmosphere of co-operation and a friendly exchange of views, and on the basis of the water fowl numbers, as determined by the count, and on the basis of not too much information on actual protection this year because of very unusual weather conditions, which made surveys practically impossible, the impression was there was a marked increase in the Atlantic flyway and slight decrease in the other, but about the average conditions.

Since everybody had all the facts before them, certain conclusions were drawn, and they were the same in each case, and the resolutions have taken account of the representations made.

I may say that the Canadian regulations -- for the benefit of those of you from the States -- were put into effect somewhat earlier, but on the basis of data available, primarily that no actual protection data was available, the same trend was followed in the Canadian regulations.

There was a liberalization of hunting throughout

the country, which affected primarily the prairie provinces of Canada. If anybody has any question about details, I would be glad to try and answer them. Everybody seemed to be agreed on what should be done, and the regulations show what has been done.

THE PRESIDENT: Thank you. Is there any discussion on those remarks?

MR. KABOT (Wisconsin): I did not have any discussion on this topic, but something came up in regard to the activities of the Flyway Council, and it was suggested it might be brought up on the floor. It may be you would not want to get into a discussion on it, because it might take a little time.

Briefly, it is this; the officers of the Mississippi Flyway Council have been induced to take some kind of special recognition of the deprivation problem, and the only way of doing it would be to make further measurements so that the surplus water fowl doing the depricating be removed in one way or another, and this would be through extention of the hunting season in the Mississippi Flyway, which was 55 days.

The officers -- and Mr. McCanness was Chairman -- of the Flyway Council, have requested the States in the Organization to consider an extention of 60 days,

and a daily bag of from five to ten, and in contact with the State, Mr. Swift asked me to contact the Northern element, and I presume Mr. McCannes has contacted the Southern element. It only happened recently, and I had no chance to talk with him.

The basic reason was they feel the deprivation problem was serious enough to warrant the Mississippi Flyway, having the same season as the Central. The reason I bring it up today is that it was suggested by some of the States who are here this morning, to just bring it to the attention of the group, and if anyone wished to make any further comments on the proposed activity, they could do so. At this stage, as far as I am concerned, it is a matter of opinion. I think the States contacted indicated it was rather late for this kind of a proposal, and I agree with that.

Some of the States have gone to their Commissions and received their sanction, to be given all publicity. I am doing this now on behalf of the States were contacted, and which are here today.

THE PRESIDENT: Who is here from Colorado?

MR. KIMBALL: I am.

THE PRESIDENT: As a guide for this discussion, or to carry it on, let us hear from him, following

Doctor Cottam.

MR. KIMBALL (Colorado): Better hear from him and find out whether it is a waste of time or not.

DOCTOR COTTAM (Washington,D.C.): I want to express the gratitude of the Mississippi Flyway. The reason is that by extending the season, after the depredations are through in Canada, and they get down to the Mississippi Flyway, there are no deprivations.

A DELEGATE: I do not agree with that.

DOCTOR COTTAM (Washington, D.C.): If that is not 100% true, it is 99%, under normal conditions.

You must bear in mind, if there was no hunting, there would be a 60% turn-over, in any case. I think, without question, the proper thing is to make sure we are taking an adequate part in this. I think it is just as foolish and just as stupid to under-harvest, as it is to over-harvest, and if we are not taking the maximum harvest, we should. I think the work of that type of birds will be , as was proposed and indicated, between October 1st and July 10th. I cannot conceive of the Northern States growing a crop, whether there is an extention beyond their 60 days or not, after the 1st of October, because, regardless of the regulations, the States naturally will close the season, and therefore,

it will be insignificant and unimportant.

In the States of the extreme south, I can see that most of those States -- Mississippi in particular -- would like to have it extended into March, if at all possible. I do not believe they can extend it to any season other than in the framework, not to October 1st, but to December 10th. I will say that every effort is made to see that the harvest is taken within the framework of the availability of the birds. That is the criterion we should bear in mind. If we are not making an adequate harvest, we should, and if we are building up a supply, and it is not being harvested, there should be an extention of time.

If anybody has any data along that line, I will be glad to hear from him. I think, personally, it is too late to do much on it, but I think an autumn group of this sort should pass a resolution or recommendation.

MR. DAMBACH (Ohio): May I ask two questions? One is, are the series of depredations different today than at the time the Flyway Council met? We met, and thought we were considering all of the evidence available and more or less came to an agreement on certain matters, and the Council was instructed on the information available at that time.

Since that happened, apparently has come this request for an extention of length of season. We think some information must have been presented which led to that.

DOCTOR COTTAM: If there was an additional information, I am not aware of it. Last year, I had the pleasure of going through the Dakotas, where we have great depredations. I know of none at the moment. This resolution dealt with ducks, but it has more to do with the geese, than the ducks.

The proposal was dealing solely with ducks, and I do not know of any serious duck depredation in the Mississippi Flyway. There is depredation in the goose population, that is true. That is normal for south of the border, particularly in the Dakotas. Our people were rather optimistic, and they were in the process of harvesting their grain when the important feeling was if the weather conditions continued, the depredations would be less, rather than greater. The opportunities I had to see were on that basis, because the birds were causing serious depredations. I do not know of any in the States. This resolution was designed solely for the ducks.

MR. DAMBACH (Ohio): My second question has to do with the difference between the central regulations and

the Mississippi. Is there a difference now between the central and the Mississippi which would account for the greater spread in seasons?

DOCTOR COTTAM: No. It seems to me as a basis for regulatory action, it is the same.

We make the regulations on two primary forms, one is the availability of supply and the second is the demands of the hunting pressure on that supply. These two things are always criteria on the basis of which we make recommendations.

In the Mississippi Flyway, you have a much higher demand than any other. It does not all bear the same degree of supply; it is decidedly lower. I do not know whether that answers your question or not.

MR. KABOT (Wisconsin): I want to make one point clear. I am almost sure that officers of the Mississippi Flyway Council have brought this up at this late day, because the information they received in Washington in regard to the depredations in the provinces caused them more alarm than anything in the States.

I know that Mr. Swift was not exposed to the seriousness of the depredation problem in the provinces in the past. We have talked with him about it, and it did not strike him as it did, when he heard it from the

Canadian people themselves. That was one of the things he pointed out very strongly.

I am almost sure that their concern with the over-all depredations in the States, and the seriousness of the depredations of the provinces would be the thing which starts off their present request for consideration.

THE PRESIDENT: Doctor Solman was the Canadian Provincial Representative? Was it not Mr. Paynor, from Saskatchewan? He was at the meeting. I suppose that was the gist of his discussion there?

MR. SOLMAN (Ottawa): That question was raised and we offered information on this situation. There were some aspects which they had in Saskatchewan during the War, of which we have no record. It is a very simple thing, and it is beyond our control.

Saskatchewan, this year, has more water than they have seen in recent history, and he has a firm figure of 4¼ to 4½ more sloughs with water in them, in Saskatchewan alone.

In the Spring, they had a condition where the snow water from the past winter was almost nil. They had an increase in the count of ducks, and they thought they were to have a very happy hatch, but they had a late spring snow, and blizzard in May, and the results were not

too good, and we could not have protective statutes there, and it looks as if they had a bumper crop, but at the same time, because of the unusual weather, the farmers could not get on the land, and the losses were reduced. There was a heavy loss due to the late season, but that was taken care of by the mallards. The crops were put into the land three or four weeks later than usual, so we will have a light harvest, and big duck population.

We have changed our whole regulations, Federally, to provide those provinces with better measures for dealing with depredations and especially for reducing the time element involved, and bag limits, in an attempt to bring hunting pressure to bear, to move the birds out of those districts.

The situation out there will not be very happy this Fall, as I see it, if the harvest season turns out to be wet, and the crops are more or less swamped. There is a total acreage of 56 million in cereal crops, or summer fallow, so it is quite a big situation, as we see it.

MR. KIMBALL (Colorado): Would you say the depredation problem was the result of weather conditions, or what?

MR. SOLMAN (Ottawa): I am not trying to suggest the ducks by themselves are very important depredation

factors, because we have had years in the past where with less than one-half of the duck population we had last year, and the situation was as serious.

If you have a great number of ducks, and a late harvest, it would naturally follow that the chances of depredation are much greater.

MR. KIMBALL (Colorado): How rapid is the encroachment? Is it going forward at a very rapid pace?

MR. SOLMAN (Ottawa): It has not been uniform. In 1900, there was between 2½ million and 3 million; now it is over 50 million.

MR. KIMBALL (Colorado): Then, if it persists at that same rate, conceivably at some time in the future, there will be no room for ducks. If we are going to operate primarily from a depredation standpoint --

MR. SOLMAN (Ottawa): We have to depend on the co-operation of private owners to arrest this duck crop, and in the past, we have had excellent co-operation from them. They have stopped spring burning, and have handled their crops in such a way that the minimum damage to birds has occurred. They now have a big duck population in some of that country, and the farmers will face quite a heavy financial loss, if there are ducks in the wrong place at the wrong time. They look to us to offer them some

relief to assist them in times like this. We feel if we do not give that protection, as far as we are able, naturally they will lose patience with us. If we do not co-operate with them, we will not have their co-operation. They will simply say, "To heck with all those excuses", and if they do not take the necessary steps, the first thing we know we will be losing our duck population.

MR. KIMBALL (Colorado): Then you came to agreement as to what it would mean to the farmers?

MR. SOLMAN (Ottawa): You can have serious depredations with a small population, and less serious with a large population. But I think, by and large, there probably is some limit which must be considered, where you automatically have a lot of depredation trouble, when you get beyond that limit. We do not know what it is at the moment.

We know we are trying to keep the good-will and co-operation of the farmers because we feel if we lose that good-will -- and we came close to it this spring,-- I do not know whether you realized there was an organization called "Ducks Limited", with a number of poisoned sloughs and we feel that the time has come to take more or less drastic action to stop that thing, before it spreads too far, because there are big farmers' unions and associations

in that province, and if you get no action from a higher level, you are liable to have one of these big provincial organizations pass strong resolutions urging some very unwise things, regarding the ducks. If they wanted to declare the ducks a pest, and put a bounty on them, and treat them as grasshoppers -- well, that should not be done. Naturally, we do not want it to happen.

We are doing everything we can to keep a balance between the interest of the farmers and the monetary damage, and we want to keep them as happy as we can, but at the same time, ensure a supply of ducks for the future.

MR. KIMBALL (Colorado): I think we would be vitally interested in that, if the farmers declared them pests. The American hunters could take care of that; just open the season for another 60 days.

MR. SOLMAN (Ottawa): It is not as simple as that. If you permit duck shooting in the Mississippi Flyway, that does not solve the problem, because those ducks breed in Saskatchewan, north of there, and they do the damage there. That may not have too much bearing on the number which come back, and it may not have too much on the actual production for the year.

MR. STILES (Iowa): Do you suggest that the action by the Mississippi Flyway is too late?

MR. SOLMAN (Ottawa): The ducks have done the damage, before they get down there.

MR. STILES (Iowa): You might not have that condition next year. So any action on the part of the Mississi Flyway -- I do not see how it could help that situation.

MR. SOLMAN (Ottawa): That is my own thought. I think there should be some way whereby we could make them available to the hunters. By the time they reach the heavy hunting pressure in the Mississippi Flyway, they have done the damage.

DOCTOR COTTAM (Washington,D.C.): I agree with every word he says on that. I have been over the Alberta, Saskatchewan and Manitoba areas. They are not below the dry belt. They are not like they are in the two Dakotas. The damage is done by the birds before they come south. The effect of these birds, when they come south -- the possible effect of the control of these birds -- is just about as ineffective as a spit in the ocean. It is positively ineffective.

I agree that when you do have depredation problems, you must deal with it there.

It seems to me the only way the Government would ever eliminate the situation in Saskatchewan is to eliminate the ducks. If you had half of the ducks you have now, and

if you had a rainy period, you could have just as bad a depredation problem as they have now. Your chances of a greater depredation is a little greater with more birds. But if the season is just right, and if you have a wet harvest period, one-quarter of your duck population could give you a terrific headache. We are not unmindful of the duck depredations. We have it in our own country, and it is serious.

The only way is if the birdsmen feel there are too many birds, and want to reduce it, even if they did, you might get the same depredation.

I think if we had one-quarter of what we have now, our headache would be less than it is today.

MR. KIMBALL (Colorado): I will give Mr. Solman some money and let him buy some land out there.

DOCTOR COTTAM (Washington, D.C.): It would be better to have us raise our own ducks.

MR. KIMBALL (Colorado): And some increase in the wild life services. I presume many of the Canadian ranchers would not appreciate the Americans come up and take their ducks.

MR. SOLMAN (Ottawa): The Saskatchewan regulations are more liberal than in the United States. Someone was asked how many American hunters he expected, and he said

he could not care less, because it does not necessarily help the depredation situation.

You must remember that the best shooting is in the stubble, and if they leave the stubble, and go into the crops you cannot get them out.

DOCTOR CLARKE (Ontario): I remember the first time I went out on the Prairies before the duck depredations were considered, and there were many more ducks out there than there are now. However, the grain was cut with the binder, and stooked. The real trouble now is that the grain is combined and swathed. There is a question of how it would help to have it harden as it stands, by the use of a chemical spray made for that purpose. Has there any progress been made, which would tend to provide a permanent cure?

MR. SOLMAN (Ottawa): For people who are not familiar with this, that is actually the cause of our big headache. More than anything else, to have the farmer swath his product and combine it, over a swath. This is an increase in the terms of dollars and cents to the farmers to have it swathed, but that just provides a playground for the ducks.

It is a gambling business, like gambling on cotton; they treated the Alberta land, and have treated a great deal more this year. We look to them for a solution.

The combines are becoming much more common. Every big operator has three or four and the average operator has one. It used to be if a field did not ripen evenly, and was not all ready for the combine, you could combine one corner of it. A combine can be driven by the farmer, or his wife, or anybody else, and they are provided with headlights, so they can be operated at night.

You still run the danger from the sawfly, which attacks the stands. It is up to the farmer to decide whether to take the duck losses, or take as much from the sawfly losses.

Saskatchewan has developed a system of wild life damage insurance. I understand it is also operating in some States. This is a case where a farmer buys insurance, much along the same line as he buys hail insurance, and that will cover him for damage by ducks, sand cranes, deer or moose. If damage occurs, an insurance adjuster goes to the area and makes an assessment of the damage, and offers a settlement. The premium will naturally be high at the start, and may have to remain high, because a great many people would not take out the insurance. To a person who has never had duck damage, it is not of much interest, but a person who has had damage, will be very much interested.

But the premium may be so high, he simply cannot take it out. It was set up by the Provincial Insurance Organization, and it got off to a good start. Last year, they charged hunters 50 cents extra on their licences to raise $50,000, but there was not enough paid in, because their ideas did not turn out quite correctly.

It has been in operation now for about three weeks. The farmer can insure his property against wild life damage, and he can go back and sit quietly at home. If the premiums are too high -- and I understand they are on the order of 11% -- and he feels he does not want nor cannot afford to take out the insurance, he can go into the scarecrow or jacklight system, to keep the birds out.

We have experimented with the soronic method, making a lot of noise. It puts out a sound of four or five decibels. It removed the ducks, but it also removed the cattle, the chickens, and everything else. Under certain climatic conditions, you have a great deal of rainy weather, and you could have 10,000 mallards in a section, and you could put a dozen men in there with shotguns, and the ducks could not care less. It is impossible to move them out.

We tried the supersonic, which made a sound that people could not hear, but we thought the ducks could, but

the ducks could not care less. You have to something which is painful before they will get out. We are not sure whether it is a useful procedure or not. It is a $5,000 machine we had there, and it could be taken around Alberta, scaring the wits out of the livestock, and the ducks, and also the people. The farmers are not too enthusiastic about it, but it is actually painful, if you are close to it. The farmers say they are willing to try anything, until those ducks are moved. We do not like to shoot them. That is not the answer. You just cannot shoot enough ducks to start them. If you put 10,000 mallards in a quarter-section, and shoot them, you will find you are in ducks up to your knees, but they are still eating the grain. Maybe this will be one answer, or maybe the business of using the combine will be the answer. You cannot stop the swathing; you just cannot get the number of men required to do it. It is a question of economics.

THE PRESIDENT: Thank you very much. We have had an exhaustive discussion on some of the basic principles involved in this question. Do you wish to discuss it any more, state-wise?

MR. BODE (Missouri): At the meeting in Washington, D.C., do you know whether or not there was any indication given in regard to the crops at that time, or what was in

mind with regard to the length of season, so they would have a chance to give consideration to it before the meeting was over?

MR. SOLMAN (Ottawa): The Flyway Council -- that is, the members who were there, Mr. McCanness and Mr. Swift -- pointed out that the Mississippi Flyway had a season of 55 or 60 days. The Committee were studying it, and I think suggested about the same. And the Water Fowl Advisory Committee appeared to favor the same idea.

As far as I know, no decision was made at all after all these meetings were held, and the delegates had dispersed, and then the resolution was announced.

DOCTOR COTTAM (Washington,D.C.): I have a copy of the resolution, which I would be glad to leave with you, for any of you to read.

MR. BODE (Missouri): I was a bit confused yesterday by a telephone conversation I received. It was my interpretation of that telephone conversation that apparently it was the intention to have the same season as the Central Flyway, which was given in Washington, D.C. I may be wrong in that interpretation. If that did not happen, then I do not want to be in a wrong position. If it did happen that there was indication given in Washington that the Mississippi Flyway felt they wanted the same

season, and bag limits as the Central, it could put me in one position. If it was done at Washington, D.C., then I am in another position. I do not want to be stating something our Mississippi Flyway did not ask for in Washington, D.C.

MR. SOLMAN (Ottawa): As I recall it, the Central Flyway asked for the same thing they had last year. The Mississippi Flyway then spoke their piece, and made several recommendations. I recall definitely one of them was that their season should be from 55 to 60 days.

MR. BODE (Missouri): As I understand it, they were talking of setting the alternative if that is what it is, so many days would be the limit, and so forth.

MR. SOLMAN (Ottawa): There was no discussion, I can recall. It was merely the framework which set the alternative of 55 or 60 days. I think their representation was it should be 55 or 60 days. I do not think they came out very formally in either way. It was my understanding there was no decision made at the time of the meeting.

MR. BODE (Missouri): No, there would be no decision at the time.

I helped summarize the recommendations which went out. After the Mississippi Flyway met, a questionnaire

was sent out by that Council, asking the members to express themselves along certain lines, and the way the questions were answered, I would almost guess they probably did not request a season for the Mississippi Flyway comparable to the Central Flyway. However, I am not sure of that. But I compiled the answers, and I did not see anything in the question, which said, "Do you wish the season as long as the Central Flyway?".

I do not recall whether this was discussed on the floor of the Council. I do not recall that it was.

MR. DAMBACH (Ohio): As I recall, there was some discussion. The matter discussed on the floor was if there was any substantial difference between the Mississippi and the Central Flyways, it was thought that Mississippi should have a comparable season.

MR. KIMBALL (Colorado): You have 10 hunters to 1 in Mississippi. That is the basis for the resolution.

DOCTOR COTTAM (Washington, D.C.): While I have not the data with me, I remember a few of them. One was the Canadian Geese and Mallards. These hold more religiously to the Flyways. In regard to the Canadian geese, well over 90% will return to the same Flyway. A great number were banded in the Mississippi Flyway States. We banded a great number, and have had over one million

returns of our birds.

Out of the returns, which amounted to about 1200 in each Flyway, of the ducks and birds returning, which had been banded in the Flyway, well over 95% of them came back into the same Flyway in which they were banded. You would expect the mallards would be higher.

The two Flyways where there is great overlapping is the Mississippi and the Central. The picture is not the same. With a big percentage of your diving ducks, they might be banded in Minnesota.

My memory is in the Mississippi Flyway, based on over 24,000 returns, of those banded in that Flyway, better than three-quarters of them will be taken on the same Flyway. There is a considerable movement, but when you have three-quarters coming back to the same Flyway, even with the two which overlap, it is less than 2% for any of the other Flyways.

Your pintails is around 45%, which is the smallest of all.

MR. M. O. STEEN (Missouri): There were just mallards banded in the northern part of the Central Flyway?

DOCTOR COTTAM (Washington,D.C.): You are thinking of birds banded in North Dakota?

MR. STEEN (Missouri): No, those banded in Saskatchewan.

DOCTOR COTTAM (Washington,D.C.): As you get further north in Saskatchewan, there is quite a distinctive movement. What I am trying to say is that when birds make a migration, they will return to about the same migration point. Even though they go over to the eastern half of the Dakotas, they will return to the Mississippi Flyway.

Maybe in the same general area, there is another group which have made certain migrations by way of the Central Flyway, and well over 75% will return to the same Flyway. As you go further north, there is overlapping. At the tip end of the funnel, is the nesting grounds, and then they funnel out in different directions, but when the time comes for them to fly, they will return to the same Flyway.

There is a greater degree of overlapping between the Mississippi and the Central. But there is a biological reason for them having their annual Flyway concept. It holds most of the species.

THE PRESIDENT: I know you gentlemen from the central States are very much interested in this, and would want a complete discussion before we terminate this matter.

I think before going on with the next discussion,

since we may be a little crowded, if we get into any longthy discussion, on these next two subjects, I will pass on now to the next item, which is the appointment of committees. I think there are three to be appointed. It is the President's responsibility to appoint these committees.

I would like to ask Mr. Stiles to act as Chairman, with Mr. Kimball and Mr. Willard to act as the Nominating Committee.

(Concurred in).

THE PRESIDENT: Now, the Resolutions Committee. Mr. Swenson, Mr. Steen, and Mr. Lutz, with Mr. Lutz in the Chair.

(Concurred in).

THE PRESIDENT: The Auditing Committee, Mr. Dambach, and Mr. Ruel, with Mr. Ruel in the Chair.

(Concurred in).

THE PRESIDENT: Are there any other committees to be formed?

DOCTOR CLARKE (Ontario): No, I do not think so. The incoming executive will have to appoint a Chairman for the permanent Committee on Standardization.

THE PRESIDENT: That will come up tomorrow afternoon.

DOCTOR CLARKE (Ontario): That will be done during the year -- I hope.

THE PRESIDENT: Now, to go back to the two preceding items. Have you any other ideas on this water fowl situation, before we close it off?

MR. SOLMAN (Ottawa): Depredation has already begun in Saskatchewan, and activities to combat it, are already being carried on.

MR. KIMBALL (Colorado): Do you issue these permits to non-residents?

MR. SOLMAN (Ottawa): I have a copy of our regulations with me, and you can see the legal technicalities. A permit was issued to land-owners, to protect their own interests, but if it cannot be used promptly, the Game Commissioner can issue an area permit under which anyone in that area can shoot, but only where he would be actually driving birds away from crops which are being harvested. The idea is to chase them out where they will do no more harm, and to get the slough cleared, and then drive them out into the stubble. It works fairly well, but sometimes there is a little question about it.

THE PRESIDENT: The next topic for discussion is "Standardization of Practices in Service Training".

DOCTOR CLARKE (Ontario): I brought up the

programme with me. Incidentally, before going any further, I would like to point out that we made this with our own little machine, and it is not as elegant as a printed job.

This afternoon, there are two panel discussions. The two topics were put here, because they were very important items of business last year, and we expect a good discussion.

Unfortunately, there are not many people, except perhaps Mr. Stiles, who took a lively part in this discussion.

The report by Mr. Morgan last year, upon which everyone made notes, and which raised a great deal of interest with regard to practices in administration, is to be re-opened. If nobody wants to talk about these things, it is just that much less talk.

MR. STILES (Iowa): Mr. President, I would say this; it would seem desirable if we could standardize our practices to some extent, inasmuch as we work in close relationship between the various States and Provinces in the fish and wild life service. The fact that it may be difficult, is no reason why we should not continue our efforts toward standardization of practices.

Thinking of my own State, Iowa, and the difficulties we have because our laws did make some small, little,

changes in our own department, and I say the tremendous problem is making changes to conform with other States or Provinces, in the interest of standardization.

It seems to me it is something to look forward to, but it is extremely difficult to work out. We might like the idea of it.

Mr. Morgan did a great deal of work on it, and I was extremely interested, but as far as I was concerned, I have to confess I was not able to do much about it.

I believe that is all I have to say, Mr. President.

MR. KIMBALL (Colorado): Mr. President, in regard to this standardization; I think one of the most important aspects of standardization is in regard to salaries. I think Commissioner Bode has done some extensive research into various aspects in an attempt to put all our technicians and people on the same salaries and also try to come out with a level, where the Federal service cannot come in and pick off the best men because they can afford to pay them a little more money.

I think, if we could do it -- I know there are several roadblocks, such as the Civil Service Commissions and Personnel Boards -- but in most cases, legislatures do set the salary scales, and if we could collect all that

information together, it would be a very valuable thing, because we want to be able to compete for the best available talent. I think in that way we would all benefit.

DOCTOR COTTAM (Washington,D.C.): While I appreciate that compliment, I think we are delighted to hear that attitude expressed.

THE PRESIDENT: Do you wish to say anything further, Mr. Bode?

MR. BODE (Missouri): Mr. President and gentlemen; I do not think I can contribute very much. I can endorse Mr. Stiles' thinking in regard to the difficulties of the problem. The goal is a most worthy one, and after this work of the Committee of the International, which it has been doing in the past year, one can very well report with a clear conscience, that it cannot be done. We are trying not to leave it in that status, however.

There has been a preliminary report prepared, which has gone out to the members of that Committee now, and I can tell you it boils down to a very, very simple formula.

As far as my own feeling is concerned, there is not a great deal we can say about it, except we want to put before the Association, something they can start shooting at. That is about as far as we have been able

to go. We have been studying this very, very diligently during the year.

DOCTOR COTTAM (Washington,D.C.): One thought occurs to me. I agree entirely with what has been said. But the fundamental thing there should be standardization. I think the Pitt and Robertson programme, which is a State programme, has been of inestimable value to the States. It has helped a great deal.

It seems to me that there is much valuable time spent in attempting to standardize fundamentals. That does not necessarily mean that every point needs to be standardized, because, I think, conditions are different in different sections of the country.

For instance, in regard to the opening date; that need not be standardized. Perhaps one State needs to split a season, and another State does not.

There are 101 different things in regard to minor details or regulations which may fit one State, but which might not necessarily fit another, But I think on the fundamentals, we, as conservation people, have everything to gain and nothing to lose by standardization, certainly not the loss of salaries and the basic needs, which should be standardized as between the States and Federally.

THE PRESIDENT: We think that simplification is the key note of successful management, and if we can all aim toward simplification, we are probably getting toward the same general standard. The more simple a thing is, the easier it is to have a uniform concept of the picture.

Mr. Sprecher, have you anything to contribute? We all know you have done a great deal on this salary picture.

MR. SPRECHER (Wisconsin): We are trying to get standardization in our own Department. We have a hodge-podge of administrative directives which have gone out for 20 years, to personnel, and we are working on a system of putting out regulations and directives which our own people can understand. Maybe after we get that done, we can work on something else.

In regard to the personnel: our Personnel Department has done a great deal of work in tabulating the various salaries of the conservation directors, and every level of employees within the various conservation departments of the United States, and we have put out a digest -- particularly to our own men and our own Bureau of Personnel -- in an attempt to get our technical men and technicians' salaries somewhere near the level of States which have comparable departments to Wisconsin.

We do not attempt to get them up as high as the Federal level, but we would like to get them somewhere even with, for instance, the State of Michigan, and the State of Minnesota, and some of the other states surrounding Wisconsin.

Our big problem is the director's salary. Our director is the low man on the totem pole, as far as directors are concerned. That is a legislative matter and to try and convince the Legislature that the conservation people are as important as the Welfare Commission, the Bank Examiners, or the State Auditors, is one of our toughest propositions.

I do not know whether the other Legislatures consider the conservation as being important, but it is pretty hard to convince the Legislature in Wisconsin.

That is about all I can offer in regard to standardization at this time.

MR. WILLARD (Minnesota): Mr. President, I have been in public service for many, many years. I have noted all through the years, that the Federal Government has set the basis for the payment of salaries. The result of it all is not only the salaries the Federal Government pays, but the retirement funds and in regard to those things which go to make the employees' lot in

life happier, is more liberal than the States can extend.

I cannot see that there can be any more done in this situation, until the Civil Service agencies in the Federal Government, and the Civil Service agencies in the State, can implement their operations, so that there can be a standardization between State and Federal salaries and regulations with respect to personnel.

In Minnesota, we have to look at the situation in this way; a young fellow while at the University, is hired, and he comes over and stays for about one year, and then the United States Fish and Wild Life comes along and offers him a salary we cannot pay, and he moves out.

I have the impression now that they look upon the Department of Conservation merely as a training school; they do not expect to stay there. There is no inducement for career work in that particular line. It is just one more opportunity to step up into higher-paid jobs with the Federal Government, and the States just cannot keep apace with the Federal Government in those things. They have not the money.

There can be no hope of standardizing the Federal and State payrolls, unless the Civil Service agencies sit down and decide on Congressional action, as well as State Legislature action, as far as salaries and

living are concerned.

MR. KIMBALL (Colorado): I would like to disagree with one point mentioned by the gentleman from Minnesota, (Mr. Willard). If the Federal Government can afford to pay adequate salaries, the States should be able to do so, also.

As to administrators; I would just as soon have half as many qualified employees than twice as many unqualified, and half as many top-level employees, as twice as many of the lower classes.

I think it is a matter of brining the problem before the Board of Civil Service Commissions or whoever handles these salary problems. I think in many cases, the Legislatures and appropriating bodies are more interested in the total amount spent, than how it is spent categorically. So I think, if we could present these things in the proper manner, we should be able in the States to hold the men we would like to keep in positions of importance in regard to the Wild Life Management in the States. I think to that end, this standardization thing could be of same aid.

THE PRESIDENT: I was glad to have the digest Wisconsin prepared. After I looked it over, I passed it on to our Civil Service Commissioner. It gives a very

good break-down of salaries across the board for all the States.

Is there any further discussion?

MR. H. G. HOOK (Indiana): Mr. President, does it not look like a good opportunity if this group could get together with the committee appointed by the International, and work together, both with the Federal Wild Life, the provinces and the States, and be able to get someplace with this problem?

MR. KIMBALL (Colorado): There is a committee of which Mr. Bode is the new Chairman, which has been collecting that information.

THE PRESIDENT: The International includes all the States, and a good many of the provinces, and it is much more comprehensive.

I think a Committee of that type, if it is relatively a small group, would not be able to do a significant job, because, after all, it is in the hands of this other committee, and is being very adequately handled.

DOCTOR CLARKE (Ontario): Is there not to be a Standing Committee named by the incoming executive? The incoming President might direct the remarks by Mr. Hook to their attention.

MR. STILES (Iowa): Mr. President, I would like to say one thing, for the record. As far as the State of Iowa is concerned, they can afford to pay as much or more than the Federal Government.

MR. KABOT: I think we should compliment the Wild Life Association for having a shot at it.

MR. KIMBALL (Colorado): I think all the State employees are uniformly underpaid. Perhaps the Fish and Wild Life services could pull us up to their level.

MR. SPRECHER (Wisconsin): I agree we should not try to pull the Federal salaries down, but I think we should all have notice of the intent on the part of the Federal Government to increase salaries, so we could go to our Civil Service people, and say, "Here is what the Federal Government is going to do July 1st. You should be warned so you could take some proper steps". We think that would do a great deal to increase the Civil Service salaries in the State of Wisconsin.

THE PRESIDENT: I do not know how your State Governments work, but certainly in our Provincial Governments, we simply could not get any advance information, because we never know when salary modifications are going to take place, even unofficially, until they come in. Right now, we know of salary revisions for the Conservation

Officers and biologists. It is set, but whether it will become effective next week, next month, or six months hence, we do not know. The day it becomes effective, every person knows it. No person can know it in advance, because it is purely mythical, up to a certain moment. I think it is considered a formal agreement, but nobody can forecast what will happen. As soon as that information becomes effective, every person knows it.

MR. KIMBALL (Colorado): Actually, in the Federal Government, in the United States, a law has to be passed which provides for a 10% increase. That becomes public information.

DOCTOR COTTAM (Washington, D.C.): Further to that, the only place we would have of announcing it would be in the proposed Bill. We do not know anything about what is going on until somebody takes action.

MR. SPRECHER (Wisconsin): Is it not hard to break that down to comparable positions in the State?

DOCTOR COTTAM (Washington,D.C.): No, I think that would be rather simple. I do not think it would be difficult to get together on that.

MR. KIMBALL (Colorado): It is a percentage increase.

DOCTOR COTTAM (Washington,D.C.): Yes, for

certain types of positions. Sometimes it is the secretaries of boards.

DOCTOR CLARKE (Ontario): Mr. President, for the record, it should be said that unquestionably in Canada, the Federal Government sets the standard.

THE PRESIDENT: Is there any further discussion on this subject? Shall we leave it for the follow-up by the Committee appointed for next year?

If it meets with your pleasure, we will go on with the next subject, of "In-service training". To what does that refer?

DOCTOR CLARKE (Ontario): That was one of our discussions last year which I thought perhaps someone might wish to carry on again at this time.

THE PRESIDENT: It is probably out of order to take part in a discussion. I should have spoken on it when speaking of the departmental activities.

This unit was effected for the purpose of in-service training of our Forest Rangers, and more laterally, for our Conservation Officers, who do not come into the service with technical backgrounds. They are now required to have two years' high school, but that is not always adhered to, as I think some have better training even with considerably less academic learning.

The training of Conservation Officers in the province of Ontario is acquired not earlier than one and one-half years after a man is appointed. We like him to have about a year and a half practical experience, before he comes to the school.

The school provides three periods of 11 weeks each. They start after Christmas and have three school periods of 11 weeks.

May I digress, gentlemen, and say that Mr. Helmsley is more closely associated with the school training than I am, as he is in charge of the Biological work. I would ask him if he will, in about five minutes, outline what the boys get during those periods.

MR. HELMSLEY (Ontario): The qualifications are that a candidate must have Grade VIII, or an equivalent standard, although that does not always apply.

We take personnel from all over Ontario, and the first two courses of 11 weeks each comprise general work. There is cost surveys, drafting, and forest protection is dealt with very heavily.

After the second term of 11 weeks, the whole group is put into specialized groups for an additional 11 weeks. The Conservation Officers then take a specialized course. There are field trips during this term. The

northern chaps get down into southern Ontario, but the southern chaps do not get into northern Ontario. They go to various places and spend three or four days in Toronto, to see the Museum and the Research Laboratory at Maple, and other interesting spots.

The main thing is the interchange of ideas. Most of these chaps have the same problems in their districts, and they get opportunities at their "bull sessions" to discuss these problems.

During the 11 weeks on Fish and Wild Life, we bring in experts from Head Office, who specialize in this work. Those are the ones whom the Conservation Officers come in contact with in their daily routine work.

It is more interesting, for one thing, to give him some facts from which to build, and we have Fish and Wild Life Management for the officers in the field.

We issue a set of books. He uses the books while he is here, then he takes them back with him. The term runs from January to sometime in March, then there is a little break, then another 11 weeks, and then a long break, and then the third term starts in October, and goes through to Christmas.

MR. KIMBALL (Colorado): Is that recurring, or is it just the once?

MR. HELMSLEY: Just once. They go through the course. When they go through it, they have "had the treatment".

The original plan was, I believe, they would run through the courses with Conservation Officers, and then bring them back for post-graduate work.

MR. STILES (Iowa): How many do you have in school at one time?

MR. HELMSELY (Ontario): 25 Conservation Officers on a course this year. It has been gradually increasing. It started off with 15.

THE PRESIDENT: We will never have more than 21. No district has to send more than one officer for one year. They say they have not enough. I ask you, how can a district send two officers, if they have not enough, so it has been decided not to send more than one from each district in any one year. We have a few new ones come in each year. Since the course has been in effect only five years, we have not covered the entire field.

MR. KABOT (Wisconsin): Do they have to stay at the school for the 11 weeks?

MR. HELMSLEY (Ontario): Yes. That is to say, those within travelling distance, have the weekends free.

MR. DAMBACH (Ohio): Are these men paid?

MR. HELMSLEY (Ontario): Yes, they are paid a salary while on the course. Their board is supplied.

MR. DAMBACH (Ohio): What are some of the standard works you give them?

MR. HELMSLEY (Ontario): They get a couple of standard works. They get field reports. At the moment, Ontario is lacking a good manual for their use. They are also supplied with some other literature.

We also have seminars, mainly to get an officer up on his feet. Our men are called upon constantly by Fish and Game Clubs, to give talks. The seminar is to get them to speak, and to say what they have to say.

MR. STILES (Iowa): Do you not have objection to the Officers being away from their families for 11 weeks?

MR. HELMSLEY (Ontario): That has been a sore spot in a few cases, but it is not, in others. It is debatable whether 11 weeks is too long, and whether we should break it up, and have another 2 weeks course. On the other hand, you have the expense, of travelling back and forth.

MR. DAMBACH (Ohio): The same group is away from home for 11 weeks?

MR. HELMSLEY (Ontario): Yes.

DOCTOR COTTAM (Washington,D.C.): During the

recess period, they can go home again?

MR. HELMSLEY (Ontario): Yes.

DOCTOR COTTAM (Washington,D.C.): So it makes three tours, with the expense of transportation?

MR. HELMSLEY (Ontario): Yes. It would be quite an expense to bring a man down for a short period.

MR. KIMBALL (Colorado): You say your bioligists and technicians take the course also -- your college graduates?

MR. HELMSLEY (Ontario): No. The category calls for Forest Rangers, timber men, reforestation men, and so on, who are on what you might call the "non-technical staff". They have all had anywhere from one and a half years up to ten or twelve years' service.

MR. KIMBALL (Colorado): You do not bring your Wild Life technicians in and give them a course in forestry, or visa versa?

MR. HELMSLEY (Ontario): No. They have to take forest protection. That includes the whole thing. It is all one department.

MR. KIMBALL (Colorado): You mean the foresters take Wild Life?

MR. HELMSLEY:(Ontario): I do, yes. In the first and second terms, they got a total of six days' work

in the first, and six days in the second.

Are there any further questions?

MR. DAMBACH (Ohio): It means it is a matter of training personnel.

MR. HELMSLEY (Ontario): The same system is used. In our course, I take into account, the man's work.

MR. DAMBACH (Ohio): Supposing a man did not perform satisfactorily. Is that grounds for dispensing with his services?

M . HELMSLEY (Ontario): No. He is allowed to write a supplementary examination. We have three or four or five failures in the first few terms. They came back, and carried on the second term, and took a supplemental examination.

In the case of Forest Rangers, they are qualified so we can point them for becoming Deputy Conservation Officers.

DOCTOR COTTOM (Washington,D.C.): Is the one objective and another administrative?

MR. HELMSLEY: Some people do rise above the general level. I am thinking especially of one, Mr. Grey, who is coming to the fore, and a couple of them were taken in as administrative officers.

Each year, a few of the better ones are chosen as Wildlife Management officers. They give us the actual enforcement part of it, dealing specifically with management.

THE PRESIDENT: I will give you the salary schedule of these officers. All of our salaried people have the cost-of-living bonus amounting to $420.00 per year, so when I give you the salary, that salary is increased by the cost-of-living bonus of $420.00. That amount is not incorporated in the salary, and is subject to modification.

Our officers start at the salary of $2,140.00. The top salary for a Conservation Officer is $4,200.00. I think that includes five grades, from $2,140.00 to $4,200.00.

An officer can only reach Grade II, which is $2,340.00, before he can go to school. No officer can get into Grade III, until he has successfully passed the examination.

When they come to a point - the senior officers or the deputy senior officers - we look up their school records, to find out about their records in school.

So their record is the basis for promotion within the service above Grade III. After taking the examination, he automatically is given Grade III. But the IVth and Vth Grades -- he cannot get into them unless he has really done satisfactory work in the School.

DOCTOR HAZZARD (MICHIGAN): I do not see on the chart the Conservation Officers. I believe it is a term adopted since this was made out.

THE PRESIDENT: They come under Fish and Wildlife. They are called "overseers" here. They should be called "conservation officers".

MR. KIMBALL ( COLORADO): What is the salary scale of the technical staff?

THE PRESIDENT: At the present time biologists start at $2,640.00, I think. I believe there are only four grades at the moment, and the top is $4,800.00

MR. KIMBALL (COLORADO): These are the district biologists?

THE PRESIDENT: Yes. Mr. Gage, who is here, is a district biologist.

DOCCTOR CLARKE (ONTARIO): I presume we are through, Gentlemen. While we have been talking here, I have been thinking up the right message to confirm the air reservations.

THE PRESIDENT: Gentlemen, let us meet just a few minutes before 1.30 p.m., say about 1.15. I want to apologize for taking all this time discussing these subjects. I will promise to keep quiet after luncheon, and you can continue then with your discussion of in-service training.

If it meets with your pleasure, we will adjourn now until 1.15 p.m.

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---- Whereupon the further proceedings of this Conference adjourned until this afternoon at 1.15 o'clock.

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A F T E R N O O N  S E S S I O N

Dorset, Ontario.
Friday, August 14, 1953.
1.15 o'clock, p.m.

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The further proceedings of this Conference reconvened pursuant to adjournment.

All parties present.

Same appearances as heretofore noted.

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THE PRESIDENT: Gentlemen, will you please come to order? Have you any announcements, Doctor Clarke?

DOCTOR CLARKE (ONTARIO): No, Mr. President.

THE PRESIDENT: There are a couple of points to which I thought I would refer before we commence the afternoon's proceedings.

I did not mention anything about the departmental budget. The revenue from the Fish and Wildlife Division is in the order of from $3 million to $3½ million. All of the revenue in the Province of Ontario goes into the consolidated revenue fund, and none of it can be earmarked.

Of course, if we are doing a special little job, like the experimental traplines, we can sell the fur and apply the funds from the sale of the fur back to operating costs. It is just a revolving account. But we cannot earmark any funds at all. These funds are set up by the Legislature each year, and they are in the order of something over $3 million to $3½ millions per year.

Since the work has so much increased, as has the total work of the Department, it is rather difficult to earmark any funds for any particular work.

When I was mentioning the salaries of the conservation officers, I should have also mentioned that all the conservation officers are uniformed. They are provided with uniforms, a summer uniform and a winter uniform, and we have replacements for uniforms as required. They also drive departmental vehicles at the Department's cost, of course, so they have that in addition to their salaries and the cost-of-living bonus.

We now have 5 or 10 minutes -- or longer if you wish -- for further discussion on "in-service training". We have been a little selfish and taken the opportunity of telling you about our own "in-service training", because you are at our centre for this work.

The subject is open for general discussion.

MR. SPRECHER (WISCONCIN): Mr. President, could you go back to the departmental vehicles? Do you know what it costs to furnish the cars?

THE PRESIDENT: We have only started that -- about three years ago. Up to that time we had been operating the officers own cars on a mileage basis.

About three years ago we started in with the department-owned cars, and we are just now reaching the stage of necessary replacements right across the board, and I do not believe we have the figures worked out for that.

"In-service training" is the topic open for general discussion now, if you care to develop that any further.

MR. KIMBALL (COLORADO): Mr. President, Colorado is the reverse to Ontario. We have our personnel in for a two-weeks period. We try to have it two or three times a year, but usually our seasons make that impossible. We plan on the men signing up for two weeks, but sometimes it is only for one.

At that time, we have all our personnel in at one time and we have our "in service training" program at our A. and M. College in connection with the College, which gives us expert instruction and technical instruction

in co-operation with our wildlife staff. This is the way we handle it in Colorado.

I think there is some advantage in having all your personnel in at the one time, because you can discuss broad policies and inter-departmental relationships, which is a little difficult if you do not have them all together.

THE PRESIDENT: Each of our districts has a senior officer and we have meetings in which the senior officers all participate, particularly the management officers, and all the regional foresters. So we have had technical, sub-technical and non-technical supervisors of the Field Staff, and the regional foresters.

We spend three days in general discussion, like we are doing here, on a program somewhat similar to this. It was not altogether on training but it was on conservation, with the purpose of more closely integrating the various branches of the service.

MR. KIMBALL (COLORADO): I think we had all our personnel in at the one time with the exception of some whom we had to leave back home to carry on the business, but we did stagger the program so that they all had this period of training during one year.

THE PRESIDENT: Is there any further discussion on this subject, Gentlemen? (No response.)

Well, we are now approaching the meat of our conference, a panel discussion on the "Future Role of Fish Hatcheries".

On that panel, we have Doctor Schneberger - who is absent - Mr. F. O. Rodgers, Doctor Hazzard, and Mr. Swenson. I would ask the members of the panel if they would please come forward at this time.

The first item on the panel discussion is "The Future Role of Fish Hatcheries", which was to be presented by Doctor Edward Schneberger, Wisconcin Department of Conservation, Madison, Wisconcin.

Is it your intention to open each paper for discussion on the subjects as listed, or will you wait until all of the papers have been presented?

MR. H. O. SWENSON (MINNESOTA): Mr. President, Mr. Rodgers and I have discussed this, and we thought it might be better for one to touch on "The Future Role of Fish Hatcheries", and the other, on the other aspect, "Modern Hatchery Technique".

I believe Mr. Rodgers has something on the "Technique", and I have something on "The Future Role".

THE PRESIDENT: Which shall you take first?

MR. SWENSON: The first shall be Doctor Hazzard, who will present a paper entitled "Results Obtained

from Stocking Trout", and then Doctor Steen will speak on "Results from Stocking Warm-Water Species."

DOCTOR CLARKE (ONTARIO): Might I ask, if there are any prepared papers, that they be deposited with the reporter so he will know that he does not have to "take" the record?

THE PRESIDENT: It might be a good idea to deal with these aspects of the subject first, and then go into the question of general "Modern Technique" and "The Future Role of Fish Hatcheries".

DOCTOR A. S. HAZZARD (MICHIGAN): I think the subject was changed somewhat from the time Doctor Clarke first got in contact with me. In fact, your preliminary announcement would indicate a panel discussion on "New Stock", and I was to speak on "Trout", however, since that time, the program has been changed around. I do not know what the changes are, but I am prepared to speak on the subject of "Trout".

MR. STEEN (MISSOURI): I have written two papers, and all I can say to you is that one is bad and the other is worse. I do not know whether I am going to use either one of them.

THE PRESIDENT: It has to do with actual stocking?

MR. STEEN: Yes.

THE PRESIDENT: Gentlemen, shall we deal with the papers at this time, dealing with the actual applied practices first, and then going into the modern techniques, and end up with a paper entitled, "The Future Role of Fish Hatcheries".

Is this change in program acceptable to you all? Do you think it is a good idea?

(Concurred in)

Then I will ask Doctor Hazzard, Director of the Institute of Fisheries Research, Ann Arbor, Michigan, to lead off with his paper entitled, "Results Obtained from Stocking Trout".

It gives me great pleasure to call upon Doctor Hazzard at this time.

(Applause)

DOCTOR A. S. HAZZARD (Michigan): Mr. President, and Gentlemen: I was glad when I saw the original assigned topics that they used the term "re-stocking", because I do not think anybody in this room will question the great value of planting.

The big argument always comes when the question arises as to whether we need to continue with stocking, and so on.

I have prepared this paper on the subject of "re-stocking". No one questions the great value of

stocking to establish a needed species; the big argument always centers around the good which can actually be accomplished by continued planting of fish and game once these animals have a firm foothold and are breeding successfully. Modern game managers can usually prove that re-stocking pheasants, quail or rabbits is futile by citing high cost per animal harvested and the small proportion of the annual kill contributed by these artificial additions. Trout stocking seems to be more readily justified. Perhaps this is only because it has become more widely established and more deeply entrenched. Although costs are high, especially for legal-sized trout, returns per fish planted are likewise high under favorable conditions. If placed on a poundage basis, however, the costs would probably not be much different from the returns from stocking game. One 2½ pound pheasant makes a fine meal for two, but to get the equivalent meat from planted trout would mean at least eight seven-inch fish. At thirty cents per fish liberated this is not far from the amount it is said to cost to rear and release a full-grown pheasant.

The late Arthur Clark (1942), first Chief of the Fish and Game Division of the Missouri Conservation Commission, spoke of re-stocking at the North American

Wildlife Conference as follows: "To admit the need for annual re-stocking is to admit the lack of effective management." He had no doubts as to the future of re-stocking game and I know he felt the same way about annual plantings of fish.

Turning to a modern prophet I quote Paul B. Sears (1953) former member of the Ohio Conservation Commission and professor at Ohio State University and now Chairman of the Conservation Program of Yale University. Writing in the AIBS Bulletin for July, 1953, on "Biologists and the Conservation of Natural Resources," Dr. Sears says, "The days of the fish hatchery and game farm are numbered, and it is conceivable the forest nursery may one day join them in limbo."

I am not so sure of the ultimate fate of the re-stocking program at least insofar as trout are concerned. I think most of us will agree that the fish hatchery has been oversold and that planting still occupies too large a place in the trout management program. Also, that most trout states are spending more money presumably for the benefit of the trout fisherman than can be justified by the percentage they make up of license buyers. From 17 to 18

percent of those who purchase fishing licenses in Michigan buy trout stamps but the major items in our Fish Division budget are for trout propagation and trout stream improvement! The reasons for this imbalance are:

1) trout fishermen make up a vocal and influential minority

2) the tourist industry wants more trout planted to attract more customers

3) through research we know ways to improve trout fishing; warm water fish research, at least in Michigan, has not yet provided a large enough "action program."

It seems obvious that more emphasis is needed on research to maintain and improve fishing for bass, bluegills, perch and other fish most sought by the angler. According to the statewide creel census conducted by Conservation Officers in Michigan since 1928, trout made up only 11 percent of the total catch recorded in 1952. Bluegills and perch alone constituted 67 percent of all fish checked by our officers. Major research effort in Michigan is now being concentrated on the warm water fish program.

Present trout stocking programs and results point toward future practices. I am not going to bore

you with the technical papers of the Transactions of the American Fisheries Society, North American Wildlife Conference, etc. A summary of these experiments is given in Fish Division Pamphlet No. 10, copies of which I have here for distribution. Only the major features of the trout re-stocking program will be discussed in this paper.

MR. RODGERS (Minnesota): It is not a question of fingerlings. We know they are getting a low survival of the trout we stock. Because of food and other limitations, we wind up with a low percentage of what we start with.

MR. HAZZARD: Fingerling Planting: Fingerling planting in streams appears to be largely wasted effort. Survival to the creel averages 3 percent or less, depending upon the species planted. Competition from naturally produced young is believed to be at least partly to blame for their low survival. Starting last fall fingerling plantings were made in sections of certain Michigan streams where natural reproduction is known to be poor. Although returns to the angler are not expected until next year, population checks with the electric shocker have shown that most of these fish have already disappeared.

Fingerling planting in suitable trout

lakes lacking natural reproduction is a sound program and in my opinion will always justify the presence of hatcheries. Michigan has hundreds of small, frequently land-locked lakes deep enough and cold enough for trout. Few have spawning streams and except in these few there is no natural reproduction. These lakes will not produce satisfactory fishing for bass, perch, bluegills and other warm water fish probably because of cold water and low food production. Annual plantings of fingerling trout (500 to 1,000 per acre depending on size of fish planted) maintain satisfactory fishing at reasonable cost. Accurate returns from such plantings are few but are now being secured in a number of representative lakes. A recent example is Section 4 Lake in the Pigeon River Trout Research Area where all fish had been removed following an experiment in the use of fertilizer. This pot-hole lake of 3.3 acres was stocked with 3,000 brook trout fingerlings 1½" long on May 5, 1952. By mid-June of 1953, 660 beautiful fish from 7 to 9.5 inches (22%) had been taken by anglers and recent netting shows that some of the original planting are still present.

For heavily fished trout lakes a combination of fingerlings and sublegals (4 to 6 inch trout

planted in the fall) may be best. The sublegals attain catchable size by the following spring and the fingerlings provide fishing later in the season and in the second year. More research is needed to determine the best time, size, kind and number to plant to produce the best fishing. There has been some criticism of this program because of the killing of under-sized trout by bait fishermen. Restriction to articial flies may prove necessary. The fish produced by such a program are natural in appearance and fighting quality -- the equal of any wild trout.

Legal-sized planting: The bulk of the cost of the trout planting program is in rearing and planting legal-sized fish mainly for stream stocking. Careful experiments in many states have shown that returns to the angler are highest when the fish are stocked just prior to and during the open season. On the average six times more brook trout, four times more rainbows and two times more brown trout reach the creel if stocked then instead of in the fall. Fall planting produces poorer conditioned fish and fish which are caught out even more rapidly than those stocked in spring and open season. On the heavily fished streams returns from spring and open season plantings may average fifty percent for brook and rainbow legals

but only about half this for brown trout. High water temperatures on marginal streams or low fishing pressure reduce these returns considerably. Carry-over to the season after planting is very low for all species but best for rainbow and brown trout. Stream planting of legal-sized trout must be regarded as a "put and take" proposition. It provides a highly artificial substitute for natural trout fishing but it is one way to substantially increase the catch of the skillful angler and also makes it possible for the beginner to take some trout -- in fact quite a few if he is on the stream shortly after a planting is made.

The planting of catchable trout is justified in states with little if any good trout water on the grounds that if no planting were done there would be little if any trout fishing. This is certainly true where natural reproduction fails for lack of spring water or where severe floods and siltation destroy the eggs. Some temporary trout fishing is even provided by spring stocking of streams which go dry or become too warm in mid-summer. Because of the heavy pressure immediately after planting and the high removal rate under such conditions doubtless few trout are wasted. No one can argue against such a program providing that the majority of the license buyers approve. Actually

only trout fishermen should be required to pay for this expensive substitute for natural trout fishing. It would be even fairer if each paid for the number of such trout he killed. I believe that the State of Missouri is most closely approaching this ideal as described by A. George Morris in the February, 1953, issue of Missouri Conservationist. In three state parks $1 per day is charged to fish in the waters which are regularly planted with legal-sized trout. For each tag sold 2½ trout on the average are released. The daily limit is six trout but only the fish-hungry expert takes and keeps his limit. Many are said to buy a tag and fish all day returning most or all of the trout they catch.

Planting legal-sized trout in larger lakes which have suitable water in summer has also produced some rather promising results, at least initially. Michigan is planting about 150 lakes of this type mostly with seven to nine inch rainbow trout although a few are giving good returns from brown trout plantings. Bass, perch, bluegills and other warm water fish are present in these lakes but generally do not provide very good fishing for lack of enough suitable habitat. Trout plantings seem to "fill a vacant room" in these lakes and provide an extra bonus to the fisherman who

learns how to catch them. Poor if any results have come from lakes in which northern pike are present in any number or where stunted pan fish are found. Birch Lake, Cass County is our only good check on results from such plantings. Here equal numbers of legal-sized rainbows have been stocked each spring and fall (approximately 3,000 at each season) since 1941 and a creel census has been in almost continuous operation. On the average, the return to the angler has been about 23 percent mostly the first year after planting but about 4 percent the second year and less than 1 percent the third year. Trout make phenomenal growth in these lakes; two and three pound rainbows are common and fish up to seven and eight pounds have been recorded. Decline in production after three or four years now seems evident and we are searching for the explanation.

Two-year old lake trout have also given good results where fingerling planting apparently failed. In the larger, deeper lakes where the temperatures are low and the oxygen high at the bottom fishing for "lakers" has been produced by annual plantings. Birch Lake again gives the only actual figure although it is considered relatively poor for this species and is no longer stocked with lake trout. A planting of

9,500 fingerlings yielded less than .1 percent; 790 marked 2 year old lake trout have produced a return of 21.2 percent. Fishing in several of Michigan's larger, popular resort lakes has been considerably enhanced by the development of lake trout angling due largely, we believe, to continued re-stocking of these larger fish.

I visualize the future of trout re-stocking in the midwestern states as follows: 1) planting fingerling trout only in suitable lakes lacking natural reproduction; 2) restricting planting of larger trout to suitable lakes and to sections of streams where anglers will pay in proportion to the cost. Other trout waters where natural reproduction occurs will be so managed (by restriction on kill) that they will continue to yield maximum recreation with no expenditure for re-stocking.

## Literature Cited

Clark, Arthur L.

1942. Annual Re-stocking game management or public relations. Trans. 7th Ann. N. Am. Wildlife Conf., pp.179-184.

Morris, A. George

1953. A bargain in trout. Mo. Cons. Feb. 1953, Vol.14, No.2, pp.4, 5, 11.

Sears, Paul B.

Biologists and the conservation of natural Resources. AIBS Bull., Vol.III, No.3, pp.19-21.

(Applause)

I think that will provide plenty of room for argument.

THE PRESIDENT: Thank you, Doctor Hazzard, for your careful analysis of the trout situation.

Perhaps we might have the four papers before we open the discussion. Shall we have all four, or discuss each paper as we go along?

MR. KIMBALL (Colorado): Since they are quite different in scope, perhaps we should discuss each one.

THE PRESIDENT: All right.

MR. KIMBALL (Colorado): Mr. President, I would like to make some comments on Doctor Hazzard's paper.

In Colorado, we find quite a large variation in the return to the creel of re-stocked trout, depending on many things.

In the first place, we have up to 90% return of the stock of legal trout, in the lakes, one in particular, Fargo Lake, which is heavily fished. The stocking there is done at the beginning of the season.

We also have returns down as poor as 40% in some of the larger streams which are heavily fished.

The average return of all our stocking in Colorado was around 60% -- return to the creel of the legals.

Of course, our stocking is done in the area which has the heaviest fishing pressure. We never put in any legal stock which would carry over during the season.

I agree with Doctor Hazzard completely in that I do not think we should object to that type of planting, provided the trout fishermen are willing to pay for it. But as also pointed out in the paper, I do not believe there is a statement that the troutfishermen are paying their way. In most cases, the stocking is being subsidized by a combination of revenues. So, that in my opinion, I do not think we should argue with the fishermen. If they want that type of arrangement, and are willing to pay for it, I think we should furnish it. In my opinion, on some of the smaller streams adjacent to heavy population centres, that is the only answer to provide any trout fishing. At least, that has been our experience.

MR. SPRECHER (Wisconsin): I would like to ask Doctor Hazzard a question. If you are going to make these trout fishermen pay their way, then a man who catches 500 trout a year, should pay more than the man who only catches 10 trout. Will you do that by tagging, or have you a trout stamp, which a fisherman pays for before he

is permitted to catch the trout, and in that way he will be paying for every trout he gets. If he has to put on a tag, I think he will probably put back more fish than he would keep. We do that with the sturgeon in Wisconsin.

DOCTOR HAZZARD: I do not think it has ever been tried. Are you suggesting they take fish, and throw them all back?

MR. SPRECHER (Wisconsin): In some waters, yes.

MR. KIMBALL (Colorado): That brings up another point, of whether you will have it all bait fishing, in other words, the survivals. Whenever you talk about that, you will have to talk about the casting of different types of bait and lures in trout fishing waters, and then you will come up against that type of people who will say, "I bought a license, and you cannot tell me how I can fish".

DOCTOR HAZZARD (Michigan): All we can do is to say they cannot use gill nets, and certain sizes of hooks. We regulate the manner of fishing. I think if we had a Commission which had the authority, they might bar any bait, by a certain amount of publicity, and most people comply with our official orders.

MR. KIMBALL (Colorado): Yes, but would not the bait fishermen of another type have a right to

come in and request that other waters be restricted for bait fishing?

DOCTOR HAZZARD (Michigan): That could be done. The fly fisherman would not object, if he could have better fly fishing. There are so many waters closed by nature to the use of flies, because of their nature.

It was suggested that any rule for fly fishing probably should apply to the unlicensed fisherman. Anyone under 17 years of age does not need a license, and he can fish for trout. The youngsters can fish with bait.

We all know that the women want to do the same thing as the men do, that is, in regard to fishing, and they want to be fly fishermen, but the "kids" look forward to using the fly as fast as they can, and we do not think that trout fishing with bait would do any harm. But with certain waters, we want to restrict them to fly fishing only, looking ahead five or ten or twenty years, and we will have better restrictions at that time.

DOCTOR COTTAM (Washington,D.C.): What would the extra mortality be with that kind of fishing?

DOCTOR HAZZARD (Michigan): One experiment, which was made at one of the hatcheries, indicated a kill of about 2% by fly, and about 15% with bait. But the last three years, the experiments we have been

conducting, indicate a much higher percentage of mortality with bait. That is to be presented to the American Fisheries Society in September.

MR. STEEN (Missouri): We have something which might be an answer to the problem if the conditions could be made to apply. We have three trout streams, for which we charge $1.00 per day, and a tag is issued to the angler, which he must wear when fishing. The cost averages around 40%; in other words, we are getting $1.00 from the anglers. As was mentioned, the daily limit is six. Some people do not take that many. Some are not successful and are not very skilled.

We use the two and one-half ratio, because our experience indicates that is probably the best. If we stock with more fish than that, we appear to have less reserves.

Portions of the stream are set aside for fly fishing only, and a portion for bait fishing, and as long as the people are paying for the fish, and taking them home if they want to, or leaving them in the streams if they prefer, it does not make too much difference whether they use bait or flies as far as the results are concerned.

These managed areas are on streams which have

cold water. We have some very large streams with a heavy flow, but it usually does not go too far before it enters into a still larger stream, which is a warm-water stream, and as a result the trout are very much confined to that stretch of water.

You have everything under rather close control. I do not know whether you could do that in the other States. As far as we are concerned, it has been very successful and very profitable.

MR. KIMBALL (Colorado): I do not know how we could use it in Colorado with 14,000 miles of trout streams.

MR. STEEN (Missouri): We always stock fingerling trout in the spring, and let them mature there. That is natural stocking.

MR. SPRECHER (Wisconsin): Did you say you stocked every night?

MR. STEEN (Missouri): Yes, every night.

MR. SPRECHER (Wisconsin): The hatchery must be close by.

MR. STEEN (Missouri): Everything is right on the grounds.

MR. KIMBALL (Colorado): Why not let them fish in the fish hatchery, and cut out all these other things?

MR. GAGE (Ontario): How big an enforcement staff

would it take to keep people from going into all these spots?

MR. STEEN (Missouri): That is very simple. We have a night watchman in the area all the time. And we have natives patrolling the shore, and we have our own personnel in the area, and the Conservation agencies make periodic checks. We do not have any difficulty.

MR. RUHL (Michigan): What percentage of your take is spent in overhead? That is one of the problems we would run up against.

MR. STEEN (Missouri): I cannot tell you that. I know that all things considered, we average about 40¢ per unit. We do not throw in the older spawners.

DOCTOR COTTAM (Washington,D.C.): That is about 40¢ a pound.

MR. STEEN (Missouri): No, it is a little more than that. They do not always get to weigh a pound.

(Page 95 follows)

THE PRESIDENT: We have had a very general discussion on this subject, and we can return to it later on, if you wish, but I think we should get on with the next paper, which is on the subject, "Results from Stocking Warm Water Species", which will be presented to us by Mr. M. O. Steen, Missouri Conservation Commission, Jefferson City, Missouri.

I have great pleasure on calling upon Mr. Steen at this time. (Applause).

MR. M. O. STEEN (Missouri): Mr. Chairman and Gentlemen: I do not know why any fish would want warm water. I can understand why you might prefer warm water, but I do not know why a fish should.

This reminds me of a story. Mary worked for a minister -- that is, a minister of the Gospel, not the kind you have in Canada. This Minister was a bachelor, and he had a shower bath of which he was very proud.

Mary was his housekeeper and would come in in the morning and go home in the evening. One day he discovered that Mary had been using his bath. As a matter of fact, she had been using it whenever she had the opportunity, because they did not have one at her home.

The Minister was quite disturbed, and he

said, "Mary, I find you have been using my shower. I am very disturbed about that. But it is not so much the fact that you are using the shower; the thing that really disturbs me is that you have been doing it behind my back." (Laughter).

As I said previously, I had two papers, the main difference between them being that one is bad and the other is worse. I think possibly I will read the worst one. It is very short and it is as follows:

I believe we should start this discussion by stating certain basic premises. The future role of warm water fish hatcheries will, in my opinion, be determined by the detailed knowledge we may develop concerning these basic premises and the degree of adherence to the course indicated by that knowledge.

The function of the fish hatchery is to produce and distribute fish for stocking purposes. Doubt exists in the minds of many concerning the value of this widespread activity; it is a controversial subject. In that controversy we often give undue weight to acceptable details, we lose sight of fundamental facts in expounding those discoveries that find favor in our thinking. This, it seems to me, is equally true of those who advocate and those who oppose the fish

hatchery.

Let us examine, therefore, the fundamental facts involved. As stated, the function of the fish hatchery is to produce and distribute fish for stocking purposes. Those who oppose this activity do so on the grounds that it is useless and even detrimental technique in fisheries management. Advocates of the fish hatchery commonly give it credit when credit is not due, and this is especially true of the general public.

The simple facts are that stocking has its place in wildlife management, but that its functions are limited, and that it is commonly used in situations to which it is not applicable. There is nothing wrong with the use of stocking as a management technique, it is the abuse of stocking that is wrong. No tool in the wildlife manager's tool chest is as productive as stocking when it is the correct answer to the problem at hand, and no tool is as useless and wasteful as stocking when it is applied to a situation which it does not fit.

Let's refresh our memories a little more about some further fundamentals in the management field. I think we must all agree that environment is the key to the welfare and abundance of every form of life that lives on this earth of ours. I think that we must

also agree that environment is subject to manipulation by man, either directly or indirectly, intentionally or unintentionally.

In our activities on the land, man manipulates environment directly for the preferred species, and indirectly for other forms. By mechanical, chemical, and biological manipulation we control the production of the land, so that we harvest wheat, rye, oats, corn, cattle, hogs, or other preferred products. In this process the introduction of the seed stock is an all-important step. In other words, stocking is a normal procedure. However, we do not attempt to stock an environment that is unsuitable, or to add more seed where seed is already present. Yet the same people who would scoff at attempts to drill a grass meadow to wheat, or laugh at the seeding of a corn field twice a year, insist on stocking farm ponds with trout, on the release of fingerling bass in a silt-laden stream, and on the annual stocking of a lake that is already populated with more fish than it can well carry. I dislike to put it so directly, but the truth is that a lot of us who know better go along with this fantastic situation on the grounds that it is good public relations to do so. In other words, we are not adhering to the course indicated by the knowledge we have already developed.

I am of the opinion, however, that this should not stop us from seeking new knowledge and especially more evidence to support the knowledge already acquired. It would seem that we have a selling job to do, and that added evidence will aid us in making the sale. Or perhaps we need better salesmen; perhaps we haven't even tried to make the sale. Perhaps more time is essential and we will eventually get the job done.

Regardless of the reasons for the present role of warm water fish hatcheries, I think it safe to say that their future role will be quite different -- providing we put no time limit on the necessary transition. There is no doubt that the fish hatchery has its place in management, it would be foolish to rule it out as a management tool. On the other hand, there is no doubt that its true functions are limited and that we are going beyond those functional limitations, in many cases, in our use of fish hatcheries.

On the basis of present day knowledge we must put the functions of the warm water fish hatchery in two general fields. It may be used to produce stock that can be released in favorable environment wherein no breeding stock of that particular species is present and for corrective stocking, and it might

be used to produce preferred species for "put and take" fishing. Any other use is questionable, to say the least.

In the first case, the uses will be that of stocking new water with adapted and preferred species, of stocking water that has been "renovated" (the fish population has been eliminated by means of rotenone or other devices), and of introducing preferred species into waters that constitute favorable environment but from which the species is barred by geographical or other limitations.

In the field of "put and take" fishing, the role of the warm water hatchery is dubious. We have not yet explored all of its possibilities, but those that have been examined do not hold promise of desirable functioning. In general, however, these tests have been confined to the carnivorous species, the "top predators" so to speak. The experience is that it takes about as much water and range to rear one of these fish to creel size as is required under natural conditions. In other words, we might as well stock the hatchery waters and fish them, as to produce fish therein for put and take fishing in other waters.

We have not examined thoroughly the possibilities of producing lesser species for put and

take fishing. The catfish family, in particular, appears to offer possibilities. Other species that utilize the lower portions of the food chain, may also be possibilities. Incidentally, it seems evident to me that we must begin to pay more attention to these species if we expect to solve the problems of supply versus demand in the warm water angling field.

These thoughts are presented as a basis for discussion rather than a complete analysis of the future role of the warm water fish hatchery. It is my hope that they will provoke a discussion of this important subject, for certainly it needs free and frank discussion. It seems evident to me that the role of the warm water fish hatchery is due for substantial change in the years ahead, and that some of this change is already long overdue.

That was the worst one of the two.

DOCTOR H. H. MacKAY (Ontario): Doctor Harkness has been relieved from the duties resting on his shoulders for a while, and has asked me to carry on.

We will now have a discussion on Mr. Steen's interesting paper.

MR. KIMBALL (Colorado): I do not want to monopolize the time, but I noticed one thing

Mr. Steen mentioned, and that was some of the catfish family. I know they grow them commercially, and it seems to me if they can do that for the market, perhaps we could also do it and stock some of the streams on the same basis as is now being done with trout.

MR. STEEN (Missouri): That was just a thought I had. I do not think we know enough about the special rule to arrive at any definite conclusion.

MR. KIMBALL (Colorado): Would you have the demand in Missouri?

MR. STEEN (Missouri): They are doing it commercially now, hauling in bullheads in Minnesota.

MR. WILLARD (Minnesota): It might be interesting to know we sell several thousand pounds of catchable bullheads, which go to Nebraska. We are stocking in ponds, for their fishing.

MR. KIMBALL (Colorado): Do you know what the cost would be per pound for raising catfish, as compared with raising trout?

MR. STEEN (Missouri): No.

THE PRESIDENT: Our commercial fishermen in Ontario, both in the Bay of Quinte, and Lake Erie, catch tons of bluegills, some of these are bought along with catfish and taken in refrigerated trucks to Indiana,

where they are released, and the anglers there catch them.

MR. KIMBALL (Colorado): What do you charge?

THE PRESIDENT: We do not charge anything. The commercial fishermen are handling all that.

MR. STEEN (Missouri): It seems to me this is largely a problem you have in a local sense. Perhaps you have a situation similar to the one we have in Missouri, where around one-half of 1% of our area is in sport fishing waters, and 99½% is land or commercial fishing waters.

We have from 3 million to 3¼ million people and we have nearly 800 people who are fishing commercially. We have a high potential for increasing the participation, because the men, women and children -- everybody goes fishing. There is a great deal of pressure, and a great demand, because of the unlimited acreage you have, in which you can produce the re-fills. What will you do about that? Will you stock bass or jack salmon? If so, why do you stock those species? It is because somebody said it was the preferred fishing. Some anglers prefer bass. Year after year, six out of every seven who go fishing, fish for other types. They want to catch fish.

Over here in Ontario, you have good water, in

which you can stock bass and muskies and pan fish. It is entirely different in our State. I think we will have to think a little more seriously about the so-called "lesser fish", and we will have to try and do our thinking in terms of pan units, which more people can take.

MR. SPRECHER (Wisconsin): Does that tremendous pressure keep you from having a sufficient population of pan fish?

MR. STEEN (Missouri): No, because these fish cannot be caught in sufficient quantities.

MR. SPRECHER (Wisconsin): With all this fishing pressure?

MR. STEEN (Missouri): No. We have no size limit, and we have taken them completely off the protective list. We are raising the limit on the crappies, and we are doing everything we can to increase the pan fish.

I think if we could find a solution in the form of some technique, and devise instruments which would take greater quantities, and take a lesser quantity of the preferred species, we might have the answer. But the difficulty is, if you lay the pattern for a device in which they can take those smaller sunfish, and so forth, then the harvest will be tremendous. We just cannot get around that. At least, that is the way it

appears to us.

MR. KIMBALL (Colorado): You mean only one-half per cent --

MR. STEEN (Missouri): One-half of 1% of the acreage in Missouri is fish of this type.

Incidentally, you should figure out what area you have in Colorado. It will make your hair stand on end.

MR. RUHL (Michigan): It seems to me we should explore the possibilities for new waters.

MR. STEEN (Missouri): We are not concerned with new waters, Mr. Ruhl.

MR. MacKAY (Acting Chairman): Are there any further questions?

DOCTOR COTTAM (Washington, D.C.): To what extent will the farm ponds affect the fishing situation? Will it make it more effective?

MR. STEEN (Missouri): We think it is functioning very well now. We have about 80 farm ponds which I think are producing in nearly 40,000 acres of water. They are widely distributed. The recent census indicates that 60% of those who fish the farm ponds, are not farmers at all. They are from the towns and cities.

You study this, and you will be surprised to find how really little water you have in Colorado. I suspect you have less than one-half of 1%.

MR. KIMBALL (Colorado): We are like Texas,

bigger and better in everything.

MR. MacKAY: If there is no further discussion, and no further questions, we shall pass on to the next paper in this panel, entitled, "The Future Role of Fish Hatcheries", to be presented to us by Mr. E. O. Rodgers, United States Fish and Wildlife Service, Minneapolis, Minnesota.

I will now call upon Mr. Rodgers to present his paper. (Applause)

MR. E. O. RODGERS (Minnesota): Mr. Acting President and Gentlemen: The title of this paper is "Modern Hatchery Techniques" and includes "Hatchery Practices".

I have written my paper around the nutritional work with trout, and have hit upon one or two other simple things. There are a number of things we have done to eliminate disease, and to bring the fish up to size.

Probably nothing has done as much to improve the quality of hatchery trout as new developments in diets. As diets change, feeding techniques also have to be developed to make use of the new forms of diets. From what we have learned in the past few years regarding the nutritional needs of trout, we are sure that we are producing today a much higher quality fish than was being done even 8 or 10 years ago. We

are sure of this because in the light of our present knowledge of trout requirements, we know that were we to be feeding diets of 10 or 15 years ago, we would be having a lot of the troubles that we had at that time with our trout in the hatchery and would still not know that in many cases what appeard to be pathological conditions are brought about by a deficient diet.

In the beginning of this work, diets were more or less put together on a trial and error basis, and after one or two promising combinations had been selected, these were used without very much knowledge as to why better results were achieved by one diet than another. A few years ago basic research work on nutrition particularly with reference to vitamins was stepped up considerably. In the old days, for instance, gill disease was very prevalent among trout in hatcheries and tons of chemicals were used to treat this trouble. Probably copper sulphate has killed more fish than the disease. It was discovered eventually that there were at least two types of gill disease, one bacterial in nature and the other nutritional, the latter caused by a deficiency of pantothenic acid in the diet. As techniques to feed the newly-developed diets were worked out, we were able to eliminate practically all pollution from feeding which had formerly been

encountered, and when this was accomplished, we were troubled much less with the bacterial type of gill disease. Probably by our old methods of feeding an unbound diet, we were providing an excellent media for this bacteria to develop.

Differences in nutritional requirements in the species of trout in one case turned up in the course of investigations. It was discovered that the standard diet which we were using was not deficient in any of the known established requirements except that it was discovered that biotin requirement for maximum storage in the livers of brown trout was much higher than in either rainbow or brook. This indicated that brown trout needed more biotin in the diet than either of the other species. It developed later that this increased need for biotin in brown trout was very likely at the root of a peculiar disorder called "blue slime" or "slime patch" in which the brown trout on the standard diet developed a filmlike covering and died in large numbers. After several years of unsuccessful treatment with chemicals, we found that we could pretty well control this difficulty by an addition of brewer's yeast or fresh or frozen beef liver to the diet to increase biotin.

When the use of dry feeds was started, we

generally had difficulty getting it into a form where it could be fed without great loss of food and without polluting the pools or raceways. It eventually developed that the use of 2% salt in the dry feed meat diet and grinding of the spleen when in a partly frozen state provided a binder which when mixed gave a diet of rubber-like consistency which could be fed practically without pollution. This worked out very well in troughs and small raceways but was hard to adapt to pond feeding.

To take care of the feeding problem in ponds a new mixture of the same ingredients was used in which no water was added to the meat and meal mixture, the entire mass being mixed in a concrete mixer and producing a mixture very much resembling coarse grapenuts and dry enough to be fed by hand without sticking.

More recently we have been working with pellets which are very similar in appearance to the pellets used by poultrymen and rabbit breeders but which are made up of the same diet components as are used in our regular concrete mixer formula. These appear to be an improvement over the other methods after fish are 3" in length. We are able

to get better conversions of food to fish flesh and at less cost and at the same time get a large saving in labour in cleaning pools.

Along with the changes in diets has evolved a system of hatchery management where certain levels of food in percentage of body weight of the fish in the lot are fed, considering size of fish and the temperature of water in which they are held. Fish are weighed monthly, food is weighed daily for each lot, and the monthly record is kept showing everything that has happened to a particular lot of fish during that month. These are cumulative for the entire life of the lot. We are thus able to check at the end of each month, and if something is out of line, we are able to make a correction before the condition has gone on long enough to cause uneconomical production. Of course, these changes in diets and techniques have not eliminated all diseases in the hatcheries. Certain specific diseases not necessarily caused by diet still crop up. However, the lower incident of disease generally in hatchery fish can be pretty largely credited to better feeding methods, better diets, and better hatchery management. We still have a long way to go.

I enjoy talking about fish hatchery operations and the problems we face in raising fish. At the same time I like to relate these matters to the reason for our existence -- to produce better fishing. When I first entered fisheries work about twenty years ago, hatchery fish were generally considered to be of no use in stocking programs by most fishery biologists. At that time stocking was not giving satisfactory results in either ponds or streams. A few years later it was discovered that hatchery fish gave excellent results in most cases where ponds were poisoned out and the rough fish removed.and the pond re-stocked with hatchery fingerlings even as small as 1". The stocking of new farm ponds, or re-stocking of such ponds after an unbalanced population has developed, is now an accepted practice. Possibly there are answers still to be found in stream stocking which may give us some of the excellent results which we are experiencing in our pond stocking. I do not believe that we can produce fish enough in streams by natural means to satisfy the fishing bad of the present day. There are just too many fishermen, too little production to do the job. I believe we are going to have to

make up the shortage by planting catchable size fish in some areas to be taken as rapidly as possible after planting. As far as return to the creel is concerned, I believe we can have anything from 100% to zero depending on where you put your fish. The 100% of course would be for the fisherman who takes his fish directly from the hatchery pools where there would be no loss between the hatchery and the fisherman. The other extreme would be to plant fish in some inaccessible place where they would die of old age without any being caught. What percentage is recovered between these two extremes is going to be determined by the suitability of the places in which they are planted.

I have prepared a table in regard to food mixtures, but it may be that this will not meet the conditions of everyone, so if you would care to write to me, I would be glad to give you further information. If you would let me know your particular problem, I can then advise you, to the best of my ability, in regard to the table which is quoted below.

SPECIFICATIONS

1. All Food Mixture indicated herein shall be composed of the following items in the proportionate quantities per hundred pounds.

| | | |
|---|---|---|
| a. | Dried Skim Milk | 11 lbs. |
| b. | Whitefish meal, vacuum dried, 60% protein | 16 lbs. |
| c. | Wheat flour middlings | 24 lbs. |
| d. | Cottonseed meal, 41% protein | 24 lbs. |
| e. | Salt, fine grade | 4 lbs. |
| f. | Distillers' dried solubles (finely ground) | 11 lbs. |
| g. | Dried Brewer's yeast (steam dried) | 10 lbs. |

2. Dry Food Mixture to have the following approximate analysis:

| | |
|---|---|
| Protein, Min. | 36.0% |
| Fat, Max. | 3.5% |
| Fiber, Max. | 3.5% |
| Ash, Max. | 0.0% |
| N.F.E., Max. | 35.0% |

No substitutions permitted.

Diameter and length of pellets need to be specified.

Whitefish meal difficult to procure -- watch for attempts to use Menhaden, sardine or other less desirable meal.

Menhaden may be "o.k." if fat kept below 5% and if

dried under a vacuum of 25 pounds.

We had a deficiency in vitamins. Usually when working with trout, what works with one will not work with another, and you cannot tell the difference. But I think one particular case where we tested every morning, gave us considerable information. When we reached the point where we no longer added to that storage, we figured we had the maximum storage, and that is what we were shooting for in the data. But we never reached that on the same level with brown trout, as we did with the rainbow. We used to have a fish that did not have a name, and when we got this variety from the hatcheries in the east, we marked off a certain percentage of our production. There may be something in the nutritional angle. We applied for some data from the hatchery, but all we know is when we were on the borderline of vitamins, the blood count went down. Where we supplemented our diet with good yeast, the fish went along in the normal way.

I believe that a few years ago, there were more fish planted than anyone has any idea of, which may give us some idea of why we got more results.

When we started out with this diet -- and I got off the subject a little -- we started it a few years ago, and we had a great deal of trouble getting it into the

proper form, but we found that by using frozen spoons you could combine 50% or 60% of dried milk, without any difficulty at all. That worked very well in the troughs, and the rest ponds. But when they got into the rest ponds there was too much trouble in feeding the fish, so we had to develop something else for use in the rest ponds. We fooled around with it, and finally came up with the same diet components, and we mixed them in a concrete mixer. You put in certain things, and run it at a certain speed, and you get food which looks like grape nuts. We found it did a very good job.

Recently, we have been working with pellets. I have been working on this for five years, and they are made up like poultry pellets, and they have been giving excellent results where we have tried them. I had a place in the Dakotas where we fed one lot during a year, and now we have about 25,000 active fish on hand. We do not even feed them once a week, but we are watching the food, and are taking weekly blood tests, because we are afraid of going too far.

I do not believe I would add anything. We feed them two days a week, or one day a week, but I do not think I would recommend pellets unless you are in a position to follow it through. The cost is the major

item. If we leave the fish to mature, we use just a little bit under two pounds of food per pound of fish. The cost was about 8¢ per pound, so we were feeding the fish for about 17¢ a pound. It is fun feeding them, as you have nothing to wash up, or clean up, afterwards.

I think that is where we will have to work in connection with the hatcheries. I think we all pretty well agree that we may have to produce these fish, providing people want to pay for them. It must be done as cheaply as possible. This work was not done by the hatcheries, but it was done under research. I think that is important. I think we will have to do a great deal of research in that field.

I think in regard to two streams which were planted, we got a return of about 7% in one, and 2% in the other, and the hatcheries caught us for everything. I think we must brush up on our technique in the field.

I think that is about all I have to say. Perhaps I have said enough already, or even too much. Are there any questions?

DOCTOR MacKAY (Acting Chairman): Thank you, Mr. Rodgers.

Mr. Rodgers has discussed the improvement in technique relative to the feeding of trout.

DOCTOR HAZZARD (Michigan): May I say that our policies follow very closely the report Mr. Rodgers has made. We feel it will save us a lot of money in the very near future. At the present time, we are using a pilot plant scale, but if it continues to be as successful as it has so far, the programme will undoubtedly be adopted on a State-wide scale.

MR. KIMBALL (Colorado): Have you the cost figures per pound of trout?

DOCTOR HAZZARD (Michigan): No, I do not think we have.

MR. RODGERS (Minnesota): You mean the over-all cost?

MR. KIMBALL (Colorado): Yes.

MR. RODGERS (Minnesota): Every place varies.

MR. KIMBALL (Colorado): Pick out one.

MR. RODGERS: (Minnesota): Ours will run considerably under $1.00. That includes everything.

MR. SWENSON (Minnesota): In Minnesota, the percentage of cost figured out -- including depreciation and so forth -- to about $2.70.

MR. KIMBALL (Colorado): Ours run about 94¢ per pound.

MR. SWENSON (Minnesota): Do you use carp out

there to any extent?

MR. KIMBALL (Colorado): Yes, and we have a large conversion factor.

MR. SWENSON (Minnesota): What are you talking about?

MR. KIMBALL (Colorado): A pound of food per pound of trout. We use about 7¢ worth of food per pound of trout.

MR. SWENSON (Minnesota): You feed them straight?

MR. KIMBALL (Colorado): No, we do not feed them straight. We are getting more into pellets. We are experimenting with all types of food to try to bring the conversion costs down.

MR. RODGERS (Minnesota): If you mixed meat with it, it would cost a great deal more.

MR. KIMBALL (Colorado): That is true. It is cooked and ground at the mill. It is of such consistency when cooked, that you have to mix it with a dry mixture.

MR. RODGERS (Minnesota): Yes, I believe that is so.

MR. KIMBALL (Colorado): What is the formula of your pellets?

MR. RODGERS (Minnesota): We use the same formula, whether it is in the mixture or in the pellets.

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| f. | Distillers' dried solubles (finely ground) | 11 lbs. |
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| Fat, Max. | 3.5% |
| Fiber, Max. | 3.5% |
| Ash, Max. | 0.0% |
| N.F.E., Max. | 35.0% " |

MR. KIMBALL (Colorado): What is that?

MR. RODGERS (Minnesota): By-products.

MR. KIMBALL (Colorado): That is after the juice has been extracted?

MR. RODGERS (Minnesota): Oh yes, and a couple

of pounds of magnesium, if necessary.

MR. KIMBALL (Colorado): Do you have the cost of the food alone, per pound? You say it costs 18¢ a pound?

MR. RODGERS (Minnesota): 8¢. I think it is delivered by our supplier at 8½¢.

MR. KIMBALL (Colorado): And your conversion factor is less than two pounds to a pound of trout?

MR. STEEN (Missouri): You will get a pound of trout with two pounds of food.

MR. RODGERS (Minnesota): Yes, because with some foods, you have a 75% moisture. When you go to pellets, you only get about 5% moisture. So the thing to do is to buy the pellets, and you will get about 5% more food, and you will get back most of it.

MR. STEEN (Missouri): Would you go back over those things again?

MR. RODGERS (Minnesota): Let me just hand them over to you.

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MR. MacKAY: Are there any further questions?

(No response).

If not, we shall pass on to the last paper in the panel. The title is, "Modern Hatchery Techniques and Improved Hatchery Products", to be presented to us by Mr. Hjalmar O. Swenson, Minnesota Department of Conservation, St. Paul, Minnesota. (Applause).

MR. H. O. SWENSON (Minnesota): Mr. Acting President and Gentlemen: this is rather a short paper on "The Future Role of Fish Hatcheries in Minnesota". It is not the final word, but it is more or less a brief summary of the way we see it at this time.

In order to have a fairly clear understanding of the future role of fish hatcheries in Minnesota, I believe it is desirable to review briefly the history of the fish propagation program.

For twenty-five years or more, prior to the early 1940's, the fish propagation operations were comparatively simple. It was just a matter of hatching and rearing to fingerling size as many trout as the hatcheries could carry; operating

enough walleyed pike spawning stations to fill all pike hatcheries with anywhere from 500 million to 900 million eggs. Some whitefish and herring eggs were also taken, hatched, and stocked as fry. The walleyed pike fry were stocked in about as many lakes as it was possible to get them into, without much consideration as to the type of lake and less as to whether or not there was adequate natural reproduction of the species. The trout were stocked in practically all trout streams of the state without much knowledge of the standing fish population in the streams and the growth rate of the trout. Bass, crappies, and sunfish were reared and stocked, but to a lesser degree. During that time it seemed to be more important to know how many fish were stocked in a lake than to know what sort of a fish population was already there.

During the last fourteen years, enough basic information has been obtained on the fish population and the habitat in the majority of the most important lakes and streams of Minnesota, and more is being gathered each year, so that we have a fairly good idea as to what, if any, fish management tool or tools should be used in an effort

to improve conditions for the angler.

After all, a lake that has a good healthy fish population is not of much value unless conditions are such that the fish will co-operate to some degree with the angler. We have many lakes in Minnesota that cannot be improved as far as habitat is concerned; by that I mean, through change of water levels and change of spawning grounds, etc. Therefore, the only effective measure that can be applied to change the fish population structure when it appears desirable is to remove some of the less desirable species, such as perch, on a large scale, stock fingerling walleyed pike or northern pike on a large scale, or both. This has been done with good results, and many lakes have become more attractive to the anglers. Some lakes with good walleyed pike habitat but with a history of poor fishing success for several years, have made a very sudden "comeback" after stocking of 25 to 50 walleyed pike fingerlings per acre.

Based on experience in fish management activities in Minnesota, the question is not, "Is fish stocking worth while?" but "Where is fish stocking worth while?" And, we find that there is

a need for fish hatcheries and rearing facilities to produce fish for stocking in certain types of waters under the following conditions in order to improve angling success.

1. To establish a fish population in waters where no fish suitable for angling are present. Example: Stocking waters which have occasional winterkills of game fish, waters which have been poisoned, or newly created waters.

2. To change permanently the fish population balance by introducing a species more suited to the environment or more aggressive than some species already there. Example: Stocking of walleyed pike in the more fertile trout lakes has practically eliminated lake trout.

3. To increase the walleyed pike population in lakes that have become unbalanced. Example: Stocking of walleyed pike fingerlings in walleyed pike lakes that have become overpopulated with perch to the extent that natural reproduction or stocking of fry is inadequate to maintain a desirable population.

4. To make use of space in a lake not being utilized by the kinds of fish present. Example: Some of our larger bass -- panfish lakes

have large areas of open waters that are well suited to walleyed pike, but have inadequate spawning areas for this species. This water area can be utilized for walleyed pike if stocked occasionally; if not stocked, only a few large walleyes will be produced.

5. To make use of predatory species such as northern pike and walleyed pike, to increase the growth rate of non-predatory species, and, at the same time, to provide better fishing for the predatory species themselves. Example: Stocking of walleyed pike, northern pike, or bass fingerlines in waters that have large populations of stunted sunfish. It is likely that lakes have such populations of stunted fish because they are naturally well suited for a high reproduction of panfish, so stocking occasionally will tend to maintain a better balance.

6. Trout are stocked for the most part as yearlings or the seven-to-ten-inch size, since we realize that it is, to a great extent, a put-and-take program to provide for more angling than the streams will naturally produce. Many of the streams in Minnesota have deteriorated through siltation to the extent that natural reproduction of trout is

seriously affected. The trout stocking program will, without a doubt, be continued.

Evaluation of fish stocking should be made in terms of increase in yield of fish from the entire population and not (as has been usually attempted) in terms of survival of planted fish. The three principal technical problems in attempts to evaluate effects of fish management are:

1. Reliable means of sampling fish populations.

2. Rapid methods of marking fish.

3. Reliable means for estimating the anglers' catch.

The following points appear to be the most important in connection with improving the efficiency of fish hatcheries:

1. Better control of diseases in trout hatcheries by having a biologist who specializes in this phase of the work and concentrates on it.

2. Improved diets.

3. Men who are directly in charge of hatcheries, or in any phase of fisheries operations for that matter, must be urged to continuously improve their working techniques through the many ideas that are brought up by workers in the various

classifications. More of the seemingly minor improvements could, no doubt, be made more use of if they were submitted for publication in The Progressive Fish Culturist.

4. The control of vegetation in rearing ponds through the use of chemicals.

5. Close check on growth rate of fingerlings so that they can be removed at the proper time without heavy losses through cannibalism.

In conclusion, I would say that it would be unwise to condemn fish hatchery operations, because fish stocking is one of the fish management tools that can be used to maintain conditions, in certain types of lakes, more attractive to the angler. It is wise to make enough reliable surveys of the fish population structure in individual lakes and stock fish wisely so as to get the best results from the fish hatched and reared, because it is an expensive operation; and, since proceeds from fishing license sales should be used for the purpose of maintaining or improving fishing, they should be spent wisely.

MR. MacKAY: Thank you, Mr. Swenson.

In Ontario, I do not think I would have any quarrel with what Mr. Swenson has said concerning the future role of fish hatcheries.

Mr. Sprecher, I wonder if you would like to make any comments on this paper, for Doctor Schneberger?

MR. SPRECHER (Wisconsin): No, I do not think so. He did provide me with some figures. He told me his job in this was simply to introduce the speaker, but you have done a very good job, and so I am very happy about that.

MR. MacKAY: Well, gentlemen, are there any questions on Mr. Swenson's paper?

(No response)

If not, I shall ask Doctor Harkness to thank and dismiss the panel.

THE PRESIDENT: This session has been very interesting, and the members of the panel have laid the basis for a great deal of discussion and a great deal of thought. They have done very good work, I think, in sorting out the values and the weak spots in hatchery procedure. They have, in essence, run through the history of the hatcheries from the original first development.

Then there were grave doubts as to whether hatcheries were of any value, and it led up to the more recent practice to show they can be of great value. All this had to do both with operations, and the use of the products, as was pointed out.

We are now entering that field of fish management where hatcheries are coming into their own as a management tool, and it requires a great deal of work.

That has been the point which the panel has put forth very clearly, and in making these remarks, I simply review what they have said.

I know there is a great deal of information in the paper, and there may be points of discussion which may come up later on when we meet privately.

MR. KABAT (Wisconsin): I would like to ask one over-all question. That is in regard to the studies made to determine values. Is the province generally satisfied that they have adequately studied it? That is to measure the value of the fish, and the relationship of the returns of stocked fish to native fish, and the turn-over of native fish? In other words, has the design of values been studied so that it is a closed issue and you are working from the results now?

DOCTOR HAZZARD (Michigan): I believe I would say that is true of trout, but not of the warm-water fish. There is no proof of the value of some of the methods Mr. Swenson was describing. I think there are hopes

for improvement in the data, as far as I know, from the literature.

But in the case of trout, I know there have been enough experiments which have evaluated both native and hatchery fish, which have been set out by the statisticians, controls, and so on.

As to the value of the warm-water fish plant; we have not anything giving the number of the predatory fish.

MR. DAMBACH (Ohio): I would say definitely there is not. We have based that on creel returns, which are in no way comparable, depending on conditions.

MR. KIMBALL (Colorado): After they have stocked the stream, they go in and check to see what is left?

MR. DAMBACH (Ohio): We have one station at the State Fair, where we put them in a confined area, and we counted them there by actual numbers.

THE PRESIDENT: We will open this subject after our recess, for any further questions which may have occurred to you in the meantime.

Before we recess, I would like to make two or three announcements.

Mr. Rodgers, would you provide our reporter with the formula so we will have it in the record, because there is a great deal of interest in that.

Mr. Lutz, the Chairman of the Resolutions Committee has asked me to announce that if you have any resolutions, please see him, or Mr. Steen, or Mr. Houston, and give them the resolutions, so they can be brought into proper shape.

We have a map here of this local area. The scale is 1 mile to the inch. I thought you might be interested in locating yourselves on the map.

There are quite a few men who have come in, including Doctor Langford, and some of the men from the Fishery Laboratory, Doctor Sprules of Ottawa, and Doctor Fowle. I will ask them to register, and make out their tags. We would like to have every person register and wear a "dog tag".

Tomorrow morning, I suggest we start at 8.30. That will give us a little more leisure for the business we have to do.

During the intermission, the Division of Operations and Personnel would like two more photographs to put on record. What they would like to have, I think, are groups of three or four or five people, representing different groups or States; I think this last panel would make one good group, and another three or four or five of you should make up other groups.

You are very important -- I can assure you that you all are important -- so get together, and make a little carnival of it, and have your pictures taken, so we will have a record of them, and can send you copies of the photographs. I would be happy if you would co-operate with the photographer in getting a few group pictures for the record.

We will now recess for about 10 minutes.

---Whereupon a short recess was had.

(page 133 follows)

---Upon Resuming.

THE PRESIDENT: The next panel come forward, please, Mr. Bode, Mr. Kabat, Mr. Kimball and Mr. Osgood.

Before proceeding, I will offer the opportunity of re-opening the discussion on fish hatcheries. Does anyone wish to bring up anything with reference to that matter, or is it finished for the time being?

(No response.)

We are a little behind our schedule, so we will go on with the subject for the next panel, and any discussion which may be held in regard to "State Zoning -- How Much can Laws be Varied to Meet Local Needs?"

I will ask Mr. Bode to lead off for this panel. I would like to ask him to act as Chairman of the panel, and I would be happy if he would take the chair and handle this work.

MR. I. G. BODE (Missouri): Mr. President and Gentlemen: I was going to make a comment, which I thought would not be very disappointing to many of you. The subject "State Zoning, and how much can laws be varied to meet local needs", was really my suggestion as a sort of theme for the panel, and I undertook to get

a panel together, and not make a speech or prepare a paper. Therefore, there will be no paper by me on this subject.

In trying to think of this problem of state zoning, I tried to think of some of the states which had first-hand experience with it. I knew there were problems in every state, and I knew there should be no difficulty about them. Every situation should be handled in its own way, but from an administrative standpoint, we know that cannot be done.

It seems to me, in our own experience, while at one time we were severely condemned for making regulations for different parts of the state, so that nobody knew what the regulations were, the pendulum has swung in the other direction, and every county wants to take part in our state zoning.

I think the object of this discussion is to review some of the experiences and get some idea of how far zoning is practical, and how far it is not. As I see it, that is the objective of the panel.

I am sorry to say that Mr. H. G. J. Cramer, Assistant Director, Wisconsin Conservation Department, is not with us, but I understand his part on the panel is to be handled by Mr. Kabat.

MR. KABAT (Wisconsin): Probably this was

just naturally a good subject to begin the panel, because rather than evaluations, it is a paper summarizing more or less the reasons for zoning, and for that reason it probably could very well initiate the panel program.

This paper was prepared by Mr. Cramer, who unfortunately became infected in his knee, necessitating an operation, and for that reason he asked to be excused from attending. I inherited his material, and will read his paper, but will probably ad.lib. a little, but, nevertheless, I will stick to his outline. His paper is as follows:

In Wisconsin the first game laws began with the imposition of restraints upon the hunter whereby deer, ruffed grouse, prairie chickens, quail and woodcock open seasons were limited to certain months of the year. There were no divisions of the state into game zones where desired harvest could be regulated and more intense and practical use could be realized.

It was only during the recent years that the interests of game management administration, and public relations have made necessary the conception of zoning whereby maximum values could be obtained out of proper wildlife use. Today in our state, zoning may be considered as variations in the game laws to fit local needs and to provide good management in meeting local

demands. Laws are provided annually through our conservation commission orders for the blocking of certain counties whereby state seasons are set for harvest or protection purposes. Some states do not establish and vary zoning regulations annually, but Wisconsin reviews its problems regularly as warranted by sound management policies. In 1952 there was more zoning of game species than there has been for a number of years.

In Wisconsin the public accepts and asks for zoning and generally agrees with management's recommendations. At the annual Wisconsin Conservation Congress hearings, held in all seventy-one counties, the public is given a choice of zones relating to almost all species; consequently, zoning in many instances is undertaken for the convenience of the hunter and trapper, or is guided by public influence.

That is all the comment Mr. Cramer makes about making a zone acceptable, and I think it is quite important to perhaps recall to your mind something about which you have heard; that is, the Wisconsin Conservation Congress, which is supervised and maintained through the efforts of the Conservation Department Commission. It is strictly a congressional type of arrangement, whereby each county is given an opportunity to be represented in an organized manner. The questionnaires and papers used,

are prepared by the Department, and each county elects a delegate at its annual meeting, and these delegates meetiin the State Congress Meeting in June of each year.

At the county meetings, they consider each thesis separately. Then there is a basic questionnaire provided for them, and you have to have some kind of a start by considering the length of the season of, for example, pheasants, and a date is given, and two or three alternatives are provided. If they do not like anything, they can add to it in caucus. They are given a free hand to get something which is acceptable. They are not given complete freedom, but in general, they are.

The option to select a division of the State which would want to be in for hunting purposes, is a thing which is given to them very liberally, and they actually select some division for the northern zone, or the southern zone, and various types of provisions which prevail later on.

Our law enforcement division will enforce almost any game regulation recommended by game management; consequently, there is no need in our state to view law enforcement as a major factor in zone planning.

The following species are zoned deliberately: ruffed grouse, pheasant, rabbits, squirrels, raccoon, deer,

and bear. Zoning may be said to apply also to quail, Hungarian partridge, sharptail, and prairie chicken as these species automatically fall into one zone or another because of their range location. Zones for all species are not identical. There are annual boundary variations to suit different management requirements.

Our bag limits and shooting hours on most species are generally statewide, and are not affected by zoning. County boundaries are used as zone lines; highway lines are used secondarily.

Species not zoned at present are waterfowl, badger, woodchuck and skunk.

Climatic Zoning:

Ruffed grouse, pheasant, cottontail, jackrabbit, snowshoe hare, squirrel, and raccoon regulations provide for climatic north-and-south zones wherein game seasons are set for harvest purposes. Some states may have an east-west or altitudinal zoning system. Wisconsin has only climatic zones for these species.

An example of the division of the state into climatic zones where desirable harvests can be realized and public acceptance is in most instances assured as shown by ruffed grouse season regulations.

At the present time we have no distinction

at all, as far as shooting over the state is concerned. The district that is zoned,has open zoning, and the opening and closing dates are given.

The state is zoned into two ruffed grouse areas -- the northern portion of the state or northern zone opening early on October 4 and ending on November 16; the southern zone opening on October 18, two weeks later, and ending earlier on November 11.

The optimum harvest of this species is different in one zone from that in another.

Regulations for the northern zone or the ruffed grouse natural range, allowing an earlier season, are established to provide a maximum harvest before winter sets in.

A later season is established in the southern zone although the birds mature earlier here. In this zone their distribution is not widespread and their numbers are comparatively less, due to limited available habitat.

Opening dates for each zone are concurrent with dates set for other species such as quail, huns, pheasants, rabbits and squirrels to alleviate law enforcement problems.

On occasion this principle of climatic zoning may be varied. A zone within a zone may be

created. Such a zone was provided for in the regulations of a group of counties in southwest Wisconsin within the southern zone wherein the heavier grouse population merited an extension of the season requested by the management and the public.

Another variation of climatic zoning is shown by pheasant season regulations. The pheasant's natural range is in the southern zone of counties where its density is greatest. This area having the heaviest hunting pressure has a late and curtailed season concurrent with the grouse season opening on October 18 and closing on November 11.

The longer pheasant season in the northern zone, beginning on October 4 and ending on November 16, is accounted for by the fact that hunting pressure is lighter and it is not expected that the birds will ever become well acclimated.

Another instance of climatic zoning is furnished by cottontail rabbit seasons. In this instance a late opening on November 1 in the warmer climate of the southern zone and a relatively late opening in the northern zone are set to reduce the opportunities of shooting rabbits which are infected with tularemia.

Another instance of variations in the law to meet local need is shown by the zoning of raccoon. In the northern zone where raccoon become dormant comparatively early, the season opening is established earlier (October 1 - December 20) than is desirable from the standpoint of fur primeness. This is necessary in order to provide a satisfactory harvest prior to hibernation.

In the extreme southern zone, since the period of dormancy is much later, it is, of course, advantageous to open the season later (November 1 - December 20) in order to take the majority of animals after the fur is prime.

Raccoon regulations from the game management point of view may well provide three zones, since the border-line area in a two-zone blocking is not adaptable to either the northern or the southern zone.

Whenever possible, the opening dates on most species are the same in the respective zones. Concurrent openings for as many species as possible within a zone are established to distribute hunter pressure and to lessen the law enforcement problem.

Population Zoning

Wisconsin deer are managed by zoning

the state into a primary deer range, an area of twenty-eight northern counties, and a secondary range of southern counties characterized by considerable argricultural land use.

The primary deer zone is established as a single unit of management because of its large population and consequent problems of overbrowsed areas, winter starvation, large-scale artificial feeding, and crop and reforestation damage. This zone is established in a wilderness area which lends itself to maximum hunting with a minimum of hunting accidents. Generally speaking this area is zoned for forked-horned buck hunting with rifle. On occasion more liberal regulations provide for an any-deer season to reduce overpopulation. This area having the largest deer population of the state is recognized by the public as a management problem zone.

The agricultural or secondary deer range zone permits more liberal hunting regulations to lessen the amount of deer damage paid claims and to provide a balance between food supply and deer population. This type of zone generally is limited to shotgun hunting to protect human life and farm stock. One deer of either sex or any age is generally legal in this zone.

Wisconsin always has had zones which may be termed non-shootable population areas. Several game species have such zones since the areas embrace land with a population too small to provide satisfactory hunting. These types of zones are essentially refuges. They often include borderline areas which may be opened at any time should a population increase merit the change.

Protective Zoning

Protective zoning involves regulations providing: protection of certain wildlife species, protection of lives (park areas), and the creation of scientific study areas. This type of zoning is concerned with closed areas and refuges.

Closed areas as distinguished from refuges are for the most part temporary refuges established for a year or less. Closed areas are designed for a particular purpose and have certain restrictions to meet local problems. A good example of such closed areas was the one hundred unit project of 1952, totaling 1,676,282 acres in thirty-one counties, set aside primarily for the protection of deer.

Another type of closed area is one in which most kinds of public use is restricted and where

land is zoned for scientific purposes. This is best shown by the University of Wisconsin Arboretum which provides an outdoor demonstration and research area in which plants and animals can be studied under natural conditions. Such zones serve all the purposes of a refuge, but do not qualify under our refuge laws as some refuge restrictions are not observed.

Wisconsin refuges number approximately 150 areas, totaling about 54,000 acres. These zones may be created for an indefinite period of time, until rescinded, but their size may be altered periodically. Some may be rescinded because they no longer serve their purpose. All are widely distributed throughout the state and many require annual revisions.

Wisconsin hesitates to create refuges in view of the fact that our vast wild land area naturally provides sufficient protected areas. Consequently, Wisconsin has few large refuges established for the protection of game species. It does have a small number which are managed primarily for the protection of waterfowl, such as,the Necedah National Wildlife Refuge, Rock Prairie GooseRefuge, and Greenwood Farm Game Refuge.

All of Wisconsin's thirty-one state parks are refuges and are primarily so designated to

prevent firearm accidents and to provide the public an opportunity to observe wildlife without fear of trespass laws or hunting accidents.

Zoning for Hunting Purposes

Public Hunting Grounds, totaling 337,000 acres, have been acquired through lease or purchase during the last fifteen years. In 1937, all monies in excess of $4.00 received for a sportsman license were earmarked for the purpose of acquiring lands for public hunting and fishing grounds and refuges. Thiz zoning of land for hunting and fishing purposes was further broadened in 1943 by the use of 50 cents of every hunting license fee for the acquisition, maintenance and administration of public hunting and fishing grounds. Adjusted payment of damages from the operation of this program was also provided for.

This program is constantly expanded because of the hunter's demand for public access to and use of wildlife areas and is desired because of the game stocking, habitat development, and other management activities.

A total of 25,000 acres of deer yards in the northern deer zone has been acquired and

managed primarily in the interests of deer-browse restoration.

Urban Zoning

Occasionally zoning in the interest of wildlife management becomes necessary in thickly populated and highly developed urban areas. It is then necessary to establish regulations for a single local purpose. The season laws in Milwaukee County furnish an example where general regulations are altered to meet the needs of a particular problem area. Because of the evidence of cottontail rabbits causing widespread damage to gardens, shrubbery, and orchards, the Conservation Commission established for this county an open season for the taking of cottontails at all times by any means except the use or aid of firearms, snares or poison.

Another instance where the practical use of regulations can be afforded through proper zoning is indicated by the special season on pheasants and Hungarian partridges in this county. In view of the Milwaukee County ordinance which prohibits the use of firearms, the Commission established a special bow and arrow season for pheasants, and Hungarian partridges lasting a considerable length

of time (October 18 to March 15) because of garden crop damage.

Zoning for Administrative Purposes

At times Wisconsin may establish a zone of management mainly for administrative advantages. For a number of years a large number of fur farms have been developed in a limited region in the southeastern part of the state due to the nature of the terrain. Many fur farm licenses were issued in this area. A season extension on muskrat and mink was established in this zone to eliminate the administrative problem of issuing a large number of out-of-season permits; thus, results desired for administrative purposes were accomplished by zoning.

MR. BODE (Missouri): Thank you, Mr. Kabat.

Gentlemen, I will suggest, if it is all right with you, that we finish the other two papers, and then during what time we have left, we can have some discussion.

THE PRESIDENT: The panel is yours, Mr. Bode. I was going to suggest you conclude at about ten minutes to five, if that is possible.

MR. BODE: Yes.

The next paper is on the subject of "State Zoning", to be presented by Mr. Thomas L. Kimball, Director, Colorado Department of Game and Fish, of Denver, Colorado. I have great pleasure in calling upon Mr. Kimball at this time.

(Applause).

MR. KIMBALL: Thank you, Mr. Chairman. Perhaps we should begin the discussion of state zoning by defining the term. State zoning, in my opinion, is the method of varying seasons and bag limits by localities, and, by so doing, to control hunting pressure to insure a varying but proper harvest of the wildlife resource. The need for state zoning involves many problems and many species of game, so I will begin by discussing some of the state zoning problems applicable to Colorado in the management of big game herds.

Many of the big game herds in Colorado range in relatively open, accessible country, and from that standpoint it is therefore fairly easy to hunt. Areas of this type are also located near population centers, which further increases the hunting pressure. In contrast to this hunting territory, there are many areas containing big game herds which are very rugged and inaccessible, where hunters must travel long

distances from population centers to partake of their favourite sport. In order to harvest only the available surplus big game under these varying conditions, it has become necessary to zone these particular areas and to vary the seasons and bag limits, depending upon the above-described conditions. The number of big game animals to be taken within various sections of the State depends to a great extent upon the herd conditions. By this I mean principally the range conditions involving a proper food supply and the necessary cover and protection from adverse weather conditions. In many instances it becomes necessary to allow only a limited number of hunters to partake of their sport within certain described areas.

As a specific example, I would like to describe the state zoning for deer in Colorado for the 1953 season. First of all, several special seasons on deer have been set. These seasons are set prior to the general deer season within areas containing a large number of dwellings and being highly populated. High-powered rifles have been excluded because of the danger to such concentrations of dwellings and people. A special archery season has been set. In other areas, where the safety factor may not be so important, the method of taking is limited to shotguns, although, in

the major portion of the State, rifles fired from the shoulder with a minimum number of foot pounds of energy at 100 yards from the muzzle are required.

In some game management districts throughout the State which are rough and inaccessible and quite a distance away from the population centers, post seasons and extended seasons for deer have been set by the Commission. These post seasons and extended seasons have been set where it is expected that the kill during the regular season will not approach the number required to harvest the surplus animals, and to prevent the deer herds from increasing to the point where range depletion will result.

In other sections of the State, an antlered-only deer season has been set, where an attempt is being made to increase the number of deer within the herd, or where we have tried to move hunters into an either-sex area where additional hunting pressure is needed.

The bag limit is another means of obtaining a predetermined kill within a game management district. In Colorado for the 1953 season, the bag limitson deer vary from one buck only to one deer of either sex on one license to a sale of multiple licenses, where a hunter may kill as many deer as he

can or wants to as long as his money holds out. In an attempt to remove the necessary number of surplus deer, a bag limit varying from one buck to an unlimited number of deer per person is used as an effective management tool.

In extremely popular accessible hunting areas adjacent to population centers, only a certain number of deer hunting licenses are validated. Where the demand exceeds the supply, these privileged hunters are sometimes chosen on a lottery basis, or in most instances, on a "first come, first served" basis at a designated time and place. These hunters are required to check in and out of the hunting area, and any animal found outside of the area unchecked is determined to be illegal. Such a course of action, of course, is the acme of control, and, as the human population shifts westward, it is quite possible that the management of all big game herds will be on a similar basis.

There are some points, however, which should be considered in opposition to the current need for state zoning on big game. If you listen to the average sportsman, his first complaint is the complexity of the rules and regulations by which he must hunt. In this respect, I am reminded of the

cartoon which appeared in Collier's Magazine a few months ago, showing two hunters bending over a map of the state in which they were hunting, wherein was described the seasons, bag limits and rules and regulations governing the hunt. The caption read, as one hunter talking to the other: "According to the map, if we are in District 7, 3/4 of the deer is closed. If we are in District 6, we are entitled to take one deer, but the elk season is closed. If we are in District 5, both deer and elk seasons are closed but we can take bear and cottontail rabbits." Such a type of control, while necessary from the standpoint of modern-day management, is nevertheless unpopular from the standpoint of the average hunter. The deer hunter likes his season and bag limits simple and applying to as much of the state in general as possible.

The cost of policing the complex regulations which result from state zoning must be considered, and I am sure that there are not many conservation or game and fish departments that can say they have an adequate staff or adequate funds to handle the problems with which they are confronted. State zoning undoubtedly will require more law enforcement personnel, more check stations and more office personnel to handle

the increase in the volume of work resulting from such regulation.

It has also been stated by some technically trained game managers that the law of supply and demand should apply to the rules and regulations governing the harvesting of big game. Certain individuals in the wildlife management field have stated that if an over-all general season is set and deer become scarce in favored and accessible hunting areas, then the hunter will automatically move to the inaccessible and harder-to-hunt areas, where there is a more abundant supply. Such is not the case in Colorado, however, and experience has taught us that in many areas the big game animals can be almost ecompletely exterminated before hunters will desert the more favorable hunting areas.

In discussing state zoning relative to small game, I think every game official's mind automatically turns to the problems involving the management of waterfowl. Zoning within the states has been talked by most of the state officials throughout the country. It appears that the present method of allowing the states to set their own seasons on a state-wide basis within certain limitations is uniformly unpopular. This lack of popularity is a result of

the state being forces to choose a season within certain prescribed limits, none of which can possibly satisfy the duck hunters on a state-wide basis. Invariably the season chosen by the state does not give each section waterfowl hunting during all of the time the flights of ducks remain in the vicinity. In many instances, the flights of waterfowl into certain localities may vary considerably from one year to another. In fact, this variation may amount to as much as one day to six weeks.

All of us know that the weather has a determining effect upon the time of waterfowl migrations, and since only newcomers and damn fools predict the weather it is almost that impossible to pick the right waterfowl season for the entire state every year. The north-south boundaries of many states are several hundred miles long, and, in the case of a state like California, it may take the flights of waterfowl several months to traverse the state from its northern extremity to the southern.

It is natural, of course, that every duck hunter demands to be able to shoot waterfowl every day of the season in his particular locality. Many of the states, such as Colorado, not only have long distances involved but also an extreme variation in altitude.

Colorado has over 200 peaks which are over 14,000 feet high, and winter comes very early in these localities on our Western Slope. On the other hand, the eastern part of the State is very similar to the Great Plains, with no mountains and a considerably lower elevation. In this case, early hunting is mandatory if there is to be any season in the high mountain country. The Eastern Slope duck hunters want the season late in order to get in on the great migrations and to enjoy goose hunting, which comes late in the winter.

Certainly there are many points of argument for the need of state zoning for waterfowl, but one basic thought must be kept in mind by all game and fish officials, as well as the average duck hunter. The U. S. Fish and Wildlife Service, co-operating by treaty with Canada and Mexico, must set rules and regulations which will insure the return of sufficient breeding pairs of ducks and geese to their nesting grounds to produce the harvestable surplus which belongs to the duck hunter from Canada to Mexico. To accomplish this result, only a predetermined number of ducks and geese may be taken. This fact is fundamental in waterfowl management, and just how this number is taken I think can be determined locally.

To establish state zoning with the hours of shooting and bag limits remaining the same would of course increase the kill of waterfowl throughout the Nation. If each locality within the State could choose its own season for waterfowl, necessary reductions in the length of season, as well as the shooting hours and bag and possession limits, undoubtedly would be necessary if we are to retain a sufficient brood stock to return to their breeding ground.

It all boils down to a simple statement of fact. Annually, technicians from the Federal agencies, the state agencies and the Canadian agencies, as well as many interested sportsmen's groups, cooperate in determining the number of breeding pairs on the breeding grounds. Later in the spring and summer, the annual increment is determined, based on the success of the hatch and the survival of young birds. Just how these ducks and geese are taken, I believe, can be a matter of choice within a locality -- whether the duck hunters within this particular locality would wish to take their ducks and geese by a longer season and a smaller bag limit and shorter shooting hours, or whether by a shorter season and a larger bag limit and longer shooting hours. This type of state zoning can be accomplished satisfactorily

provided the kill does not exceed the determined amount. The lack of definite information on just how the change of seasons, bag limits and shooting hours would affect the kill has been the main reason that the Fish and Wildlife Service has not embarked upon such a program. The effect of such changing regulations on the kill, of course, would be a highly debatable question until such time as pertinent factors are at hand. I should think, however, that all game officials should begin to study these questions and perhaps some state zoning should be established to give definite information on the effect of such regulations on the kill.

State zoning for upland game birds follows a similar pattern to that stated in the discussion of big game and waterfowl. In my opinion, any complex zoning measure, rule or regulation can be justified only if it is designed to harvest the available surplus of game by localities when those surpluses vary within zones which can be readily described and designated.

(Applause)

MR. BODE: Thank you, Mr. Kimball. There is food for thought there, and some of you will probably have made some notes for questioning later

on. We will now pass on to the third paper in the panel, entitled, "Michigan's Experience with Zoning Regulations", by Mr. Wayland Osgood, Deputy Director, Michigan Department of Conservation, Lansing, Michigan.

I have pleasure now in calling upon Mr. Osgood.

(Applause)

MR. WAYLAND OSGOOD (Michigan): Mr. Chairman and gentlemen: I realize when we get down to the third subject of this panel, on a subject of this kind, we might find the paper has been given before I had the opportunity to present mine. I do not think that is exactly true, but you will find there were some things in the other papers which had occurred to my mind.

The particular phase of the zoning topic assigned to me as a representative of Michigan is:

"In view of the modern ease of transportation and the upsurge of numbers of users, what is the result of zoning in increased pressure in take of game and fish?"

It will not be necessary to spend much time discussing the results of zoning as it applies to the take of fish.

While it is true that some 25 years or more

ago the Michigan Conservation Commission approved a zoning order of a sort which established a separate and later closed season on large and small mouth black bass in the Northern peninsula, apparently the order was not considered vital to the protection of the species since it was not renewed.

At present our statutes provide a later spring spearing season in the Northern peninsula than in the Southern peninsula but with that exception, which is not of significance in this discussion, we have no laws or Commission orders which establish zoning for fish.

We come then to the zoning situation as it relates to game and fur bearers.

I suppose that the trigger which set off this panel discussion of zoning was the desire of a number of states -- Michigan among them -- to have some zones set up within their boundaries for hunting of migratory birds. If it could be shown that within certain states with a long geographical extent zoning has been resorted to for a number of upland game species, it might be an argument for zoning on waterfowl seasons in those states.

When we first began thinking about this topic it seemed as though Michigan's game regulations

included a number of instances of zoning. We thought we would be able to show some moderate increases in hunting pressure and resulting take traceable to our zoning regulations. At the same time, we felt that zoning might be a device to obtain a better distribution of hunting pressure. But as we have examined our "zoning regulations" more closely it appears that we have very few clear-cut examples of zoning in the strict sense, and their effect is even less than we first thought.

As we looked at Michigan's regulations, it was apparent that some definition of zoning is necessary.

In the strict sense, zoning appears to us to mean a regular geographical series of open seasons. In the simplest form, the length of season would be the same for each geographic unit -- these might or might not be overlapping.

No doubt zoning, as used in today's session, includes modifications of the basic, regular pattern. For example, we consider that Michigan's rabbit season is an extreme variation of zoning:

Upper Peninsula and northern Lower Peninsula - October 1 to March 1.

Southern Lower Peninsula -- October 20

to January 31.

Here the season in the northern zones overlaps that in the southern zone at both ends.

But if we go this far, practically any geographical variation in a state's hunting or fishing regulations might be regarded as zoning. Furthermore, the various regulations from state to state constitute an irregular pattern of zoning for each game species, migratory or not.

So I find myself considering almost the whole field of regulations on hunting and fishing. Trying to get at the reasons for various hunting and trapping seasons in Michigan, I jotted down the following factors that seem to have produced our system:

Desire for weather cool enough to allow dogs to work.

Desire for weather cool enough to allow hunters to hunt.

Time of leaf-fall.

Time of freezing of ground vegetation.

Time of farm crop harvest.

Time of early winter snows. (We try to avoid hunting birds on snow, but like to have snow for rabbit hunting.)

Time of marsh and lake freeze-up.

Time of primeness of fur.

Time of breeding season.

Time of migration.

Time of maturing of young.

Desire to have seasons largely concurrent.

Desire not to have a season open on a minor species until it opens on major species.

Custom -- which may be strongest of all.

These factors, and probably others, have led to the pattern of open hunting and trapping seasons we have in Michigan. They have dictated such zoning as we have had. For the most part, the factors have been concerned with the convenience of the hunter or farmer except for the general principle that game harvests should usually begin in the fall, when the crop is mature and before winter mortality has started.

I might add that to a considerable extent there is a natural zoning in Michigan, set by our geography and the pattern of animal and human populations.

Michigan has recently seen a lengthening of the seasons allowed by law on several major game species. Grouse seasons were increased from a maximum

of 22 days to a possible 41; rabbit, hare, and raccoon seasons were materially lengthened. We have been increasingly impressed with the concept that hunting, for most species at any rate, have been greatly over-rated as limiting factors.

It is well known that for pheasants and deer, our two most important game species, the bulk of the take is accomplished within the first few days of the season. Hunting pressure and hunting success fall off sharply thereafter. The law of diminishing returns for effort expended takes over. Michigan's pheasant season is 22 days, of which the last ten days see comparatively light kills; another ten or even twenty days tacked on would make little real difference in the harvest of legal cocks. Our regular buck deer season of 16 days could be doubled without affecting the annual take appreciably.

Since we are satisfied that hunting pressure is not the major factor once thought, we can hardly claim that our intramural zoning is a means of carefully adjusting the harvest to the potential crop. Considerations of hunter convenience and enjoyment are much more valid than the welfare of the game.

If we had fewer hunters we might well consider having several additional zones, so that each

hunter might participate in several opening days on his favorite species. But since our problem is more one of achieving a better distribution of hunters, we have tended to reduce zoning and to have a number of seasons open at the same time over large areas. Last year, for example, the following openings occurred on October 1:

Waterfowl -- state-wide

Bow and arrow deer -- state-wide

Grouse, woodcock, rabbits and hares, raccoons -- Upper Peninsula and northern Lower Peninsula.

On October 20:

Squirrels -- entire Lower Peninsula

Pheasants, grouse, woodcock, rabbits, raccoons -- southern Lower Peninsula.

There has been some sentiment for an earlier, separate opening of bow and arrow deer season. It comes partly from the desire of some archers to have the woods to themselves, partly from certain resort owners who say that with separate openings they can fill their cabins twice. In a word, the case for or against zoning of any sort becomes clouded with many issues not concerned with the welfare of the game.

We believe, however, that regulations which are uniform for large areas tend to distribute hunters more widely among marshes, fields, and woods, and thereby produce more pleasure per man than would a series of finely divided geographic zones. Dispersal of gun pressure among several species over a large area also cuts down somewhat on the opening-day kill per species. But this is a secondary consideration if the gun is not a serious limiting factor.

Unless zoning is coupled with a system of quotas as to the number of hunters or the amount of take per area, it rather tends to concentrate hunting pressure. Quotas and areas are quite a different concept. They may be the ultimate necessity wherever the gun is a major limiting factor, but we would avoid them as long as possible.

The foregoing statements lead to the conclusion that zoning tends to concentrate hunters and increase the kill. In the words of the assigned topic, the implication would seem to be that the tendency of zoning, "in view of the modern ease of transportation and the upsurge of number of users", is to produce a significant increase in gun pressure andthe resulting take. Actually this is probably true only when the zones are small and the number of

hunters large, relatively, or where the open seasons are short with little overlap from zone to zone.

As a specific example, there is Michigan's ruffed grouse season. For a number of years, up to and including 1951, the Upper Peninsula season opened October 1, while the Lower Peninsula opening was October 15. Computations show that in 1951 about 5,600 Lower Peninsula residents crossed the Straits to the Upper Peninsula to hunt grouse there. In 1952 the northern Lower Peninsula grouse season coincided with that in the Upper Peninsula. It might have been thought that with the change, few hunters would go over the Straits for grouse, but the figures show that nearly 5,800 did so. Percentagewise, there was a slight reduction, but it was not significant. Of course, habit may be the governing factor here which causes hunters to undertake the ferryboat crossing of the Straits to where the grouse are actually less numerous than below the Straits.

If a game species is so much in danger of depletion by hunting that it can withstand only a very short season, zoning in the usual sense should not be considered at all. A modification, permitting longer seasons in the areas where more

hunting is allowable might be workable, provided the longer seasons overlap the short season permitted in the area of most intensive hunting.

The intra-state zoning requested by various states for waterfowl hunting seems to be a device to secure in effect a lengthening of the over-all open season in order to take care of all of the hunters, particularly in years when the season is only 30 or 40 days long. The larger states certainly have a case, but we do recognize the problem before the Fish and Wildlife Service.

The nearest thing to zoning for the benefit of wildlife that Michigan can offer is our muskrat trapping seasons. Muskrat trapping seasons are each a month long, beginning in the northern zone (Upper Peninsula) November 1, in Zone 2 on November 15, and in Zone 3 on December 1. We believe that this arrangement is a fair compromise between average favorable trapping conditions and fur primeness so that the usual harvest is fairly well adjusted to average production. Also, trapping seasons for beaver have been zoned to put increased trapping pressure on areas with higher populations. However, trapping seemsto be rather different from hunting, in that the trap is considerably more

effective than the gun, and because the trapper has a commercial incentive.

In conclusion, I believe that zoning as we know it in Michigan has come about chiefly as a result of a desire to have hunting seasons that are favorable to the hunter. This is as it should be, so long as the gun is a minor factor in the welfare of the hunted species. Zoning tends to concentrate rather than reduce hunting pressure, but under Michigan conditions its effect has been minor.

(Applause)

MR. BODE: Gentlemen, as we say in the islands in our part of the country, "The floor is yours; have at it."

It is now four-thirty, and Doctor Harkness has indicated we should adjourn at ten minutes to five, so we have some time, but not to sleep.

It seems to me that this question of zoning is quite important, because I think it is an increasing one.

One concern-- I should not say "concern" we have had -- but argument, which has been brought up in our part of the country against it, is the fact that if you establish two zones in the state, with a

resulting greater length of the whole season over the state, because of the rapid system of transportation, they move into one zone, and can quickly get down to another zone, when it opens. That is one objection which has been raised.

DOCTOR COTTAM (Washington,D.C.): Have you any data on the extention of the season in your State, that is, for providing for extra days?

MR. BODE (Missouri): We have no data from which I could answer, as regards our State.

MR. DAMBACH (Ohio): We had some experience with that in squirrel. We had a 15-day season in the northern part of the State, and 30 days in the south, and there was some movement from the shorter northern season, down to the southern, but it has been not significant.

The whole State is open now to squirrel hunters, and they are hunting the same as they did before.

We had a good experience with deer, starting in 1943. We opened the deer season in the southern part of the State, and the people who hunted there were the people from the southern part of the State, mostly from Cincinnati, but when we opened the north-

eastern part of the State, we got people from Colombus, Akron, and so on.

In our experience, zoning did not lengthen the season appreciably for the hunters.

MR. KIMBALL (Colorado): There are other methods of utilizing the zone? For instance, in Colorado, the zone effect is from the standpoint of bagging the deer, and shifting hunters perhaps into different districts, where you want to have them killed, as opposed to bucks only, and the number you can take, that is, the unlimited number you can take. If a fellow really wants deer, he will go to the area where he can take as many as he wants.

MR. BODE (Missouri): I would like to ask one question. I have wondered a great deal, in thinking of this zoning -- how far physical features went in making zoning possible, or impossible, or practical. I mean such things as roads, maintenance, the general topography, and the physical features which make zoning possible.

MR. KIMBALL (Colorado): As an example of that, in western Colorado, there is quite an escarpment, and it is almost physically impossible for anyone to go up and down that escarpment. They have to go all the way around. That also applies to game animals, so it is a natural boundary, from the standpoint of zoning.

For a number of years, we had a different description of the area between those two zones, where one deer was permitted on one side, and two deer on the other. But the natives were going into the one-deer area, and killing two deer, claiming they got them in the two-deer area.

When that division line was moved to the escarpment, we asked them to show us how they got down off the escarpment, if they shot two deer in the one-deer area.

MR. BODE (Missouri): Would it become more impractical, if you had terrain, where you had one road into an area, than if you had fifteen or twenty or twenty-five roads, leading into a restricted area?

MR. KIMBALL (Colorado): When we got into that type of control, we set out checking stations. There may be only four or five out of fifty, but we require the hunters to check in and out of these checking stations, and that puts the burden of proof on them. If they do not check out, their deer is illegal on the outside, and they are subject to arrest.

You can control that way, where you have many accesses to the area you are trying to control.

DOCTOR COTTAM (Washington, D.C.): You have control by tagging?

MR. KIMBALL (Colorado): That does not work out, unless you have two deer in a special area, and you have to check the deer taken out of that particular area, unless you have effective control.

MR. BODE (Missouri): How much coverage do you get in an area of that kind, where you have the large number of points of ingress and egress? What control do you get over those, who do not choose to come to your checking stations?

MR. KIMBALL (Colorado): Our law enforcement officers run road blocks on the areas at intervals -- infrequent intervals -- and they check the number of hunters coming through. If they are in possession of two deer, and have not checked through the checking station, they are in trouble.

MR. BODE (Missouri): You control that by a a central control camp?

MR. KIMBALL (Colorado): Yes.

DOCTOR COTTAM (Washington,D.C.): In some areas, there are already a few roads going in. But where you have a road every quarter of a mile, to use the vernacular of the south, "It makes a right smart difference".

MR. KABAT (Wisconsin): Zoning failed very badly in one portion of the state of Wisconsin. In

two-thirds of the State, it worked very well. From the standpoint of the control of hunters, the law enforcement officers say they have no difficulty in regulating it. The hunters cannot get back into the northern third. If we are ever going to manage that range, we will have a very complex system of hunting, and we decided that it just could not be done, and the range will have to go. We are getting to the point where we do not know where the public will take over.

MR. KIMBALL (Colorado): Did you ever try a two-deer area?

MR. KABAT (Wisconsin): We have proposed about everything. The public accepted everything but one. We just cannot get them to agree upon that. We cannot restrict the number of hunters who go into the area.

Now, to answer Doctor Cottam's question. If the boundary is put in to effect, the hunters practically migrate. One year, some of the geese are in the north zone, and the next year they are in the south zone, and the reason for it is that in some counties, they like the earlier season, and the hunters of the north will migrate into the south, and clean out the area, and then move out into the north area again.

We are just balancing it on the borderline. We

have not eliminated it. It happens naturally, and it is something with which we have to put up. An excess of control is perhaps something we have not considered as being of any great importance.

DOCTOR COTTAM (Washington,D.C.): California has made very careful checks in regard to duck hunting. Both of the areas are on the edge of the State boundary, part of it is in the State of Oregon, but the majority of it is in California.

California has made a careful check on either side of the line, and my memory is that the figures show that more than 50% of the people who come there travel more than 500 miles. Do not "kid yourself" into thinking they would travel that distance, if there was no indication they could get geese. I think with grouse, it is quite different. There is a migration there.

MR. KIMBALL (Colorado): That is true, but more so with big game. They travel further, and still further.

In one of the first States west of the plains, during the big game season -- Colorado -- the Colorado hunters were outnumbered quite a bit by the hunters from Texas, Oklahoma and Nebraska. They travelled all that distance to get good big-game hunting.

THE PRESIDENT: I was going to ask Wisconsin

why they did not have their Forest Management people put access roads up into the forest area.

MR. KABAT (Wisconsin): That has been tried to a certain extent, but it has not resulted in very much. Our hunters do not go in very far. If we construct roads at a very high cost, we might not be able to keep them open. I do not think we can go any further than we have.

THE PRESIDENT: Our hunters will go about a mile and a half.

MR. KABAT (Wisconsin): They could get their animals in the accessible places, so why go back to the difficult places?

Now we are getting down to the place where we have a reduction in the inaccessible districts. They are slowly disappearing.

MR. KIMBALL (Colorado): You will have hunters sitting in cars with guns out of the windows. It is the same in Colorado. Our survey shows that 70% of the deer taken, are taken within a half a mile of an established road. So in the great areas in the back country, where there are no roads, it is not even touched, as far as the hunting is concerned.

MR. BODE (Missouri): Mr. President, I will

CORRECTIONS TO TEXT OF PROCEEDINGS
OF TWENTIETH ANNUAL MEETING OF THE ASSOCIATION
OF MIDWEST FISH AND GAME COMMISSIONERS,
AUGUST 14, 1953

Page 24 Paragraph 5, sentence 3 to end paragraph should read - "I was looking over a copy of them here, and, as I recall, they are as discussed. There were two meetings, a meeting of the National Flyway Council and one of the Waterfowl Advisory Committee. These meetings and the scientific staff of the Fish and Wildlife Service were very much in agreement as to what should be done in regard to the seasons, bags, and so on."

Page 24 Last line - omit

Page 25 Lines 1 to 3 - omit

Line 9 - second word should read "production"

Line 12 - seventh word should read "decreases"

Line 12 - tenth word should read "others"

Line 13 - words 1 and 2 should read "compared to"

Line 16 - for "resolutions" substitute "regulations"

Line 21 - should read "available, primarily on breeding pair data since no actual production data were"

Page 32 Omit sentences beginning on lines 12 and 14.

Line 17 for "he" substitute "Mr. Paynter"

Line 18 after "4½" add "million"

Line 23 for "happy" substitute "early"

Page 33 Lines 1 and 2 should read "too good, and we could not take protective measures then, but at the"

Line 4 after "losses" add "due to agriculture"

Line 8 for "light" substitute "late"

Line 12 should read "the time element involved and have increased bag limits, in an attempt"

Line 18 for "56" read "more than 50"

Page 34 Line 3 delete "and"

Line 17 for "arrest" substitute "produce"

Line 20 after "to" add "nesting"

Page 35 Line 21 should read "called 'Ducks Limited' formed which wished to poison a number of sloughs"

Page 36 Line 19 after "Saskatchewan" add "and"

Page 39 Line 16 for"that" substitute "swathing"

Line 17 delete sentence beginning "more than...."

Line 18 for "This" substitute "It"

Line 19 should read "a matter of dollars and cents to the farmers"

Page 39 Lines 22 and 23 should read "The chemical spray is a dehydration agent, like the defoliant used on cotton. They treated some areas in Alberta in 1952 and have treated a'

Page 40 Paragraph 1 sentence 3 should read "It used to be that if a field did not ripen evenly, and was not all ready for the combine, it could not be combined. Now it is possible to combine one part of a field at a time, if desirable."

Line 9 for "the stands" substitute "only standing grain"

Line 16 for "sand" substitute "sandhill"

Page 41 Line 5 for "was not" substitute "may not have been"

Line 6 for "did" substitute "may"

Line 14 second last word should be "sonic"

Line 15 for "it" substitute "The unit used"

Line 15 for "four" substitute "140"

Line 15 after "sound" add "intensity"

Line 16 for "fice" substitute "150"

Line 16 for "removed" substitute "scared"

Line 16 after "but" add "in some cases"

Page 41 Line 16 for "removed" substitute scared"

Second last line after "supersonic" add "eqUipment"

Page 42 Line 1 after "to" add "have"

Line 4 should read "machine we had there, and it is now operating in Alberta, possibly"

Line 7 for "but" substitute "and"

Lines 14 and 15 for "business of using the combine" substitute "use of straight combining or chemical sprays"

are registered.

The take on each trap line is specified. If there are over five beaver houses, they are only allowed one beaver per house until there is an excessive population on the trap line, and then two beaver on the line are permitted.

The number of marten and fisher which they can take, is determined by their licence.

The district foresters have suggested that zoning might apply for moose hunting.

DOCTOR CLARKE (Ontario): I do not know whether it is worth-while "throwing a monkey wrench" into this, but in Ontario, we have separate seasons for grouse, and varying bag limits, and the question is raised, "What do you do if a fellow has five grouse, and he is only supposed to have three?". Nobody seems to worry about it.

In the case of fish, there is no plan of zoning whatsoever. The limit for pickerel is the same here, as it is in Lake Erie.

THE PRESIDENT: Yes, but there are a few exceptions. On Manitoulin Island, the limit on perch

is similar to the speckled trout, and further south, it is also similar.

DOCTOR CLARKE (Ontario): It is the thin edge of the wedge.

THE PRESIDENT: I do not know. Possibly it may be.

MR. SPRECHER (Wisconsin): If you zone certain areas, you do not permit non-residents to go into that portion?

THE PRESIDENT: Any person going into a licenced area, must go in under a travel permit. In times of fire hazard, access to those areas may be completely prohibited, but they must go in during the fire season -- in the early season and the late fall -- under a permit.

DOCTOR CLARKE (Ontario): I think Mr. Sprecher is thinking of the hinterland.

THE PRESIDENT: Up there, there is no permit for the purpose of hunting or angling.

MR. SPRECHER (Wisconsin): What is the reason for that?

THE PRESIDENT: There are a number of Indians who are completely dependent on the fish, game, and fur resources, and the people get up without adequate equipment to get them out, and they get lost,

and it costs the Federal Government and the Province a tremendous amount of money to look for them. They are really endangering themselves.

We want to see the Indians in a position to have it opened, by seeing that they get the advantage of the development of this area, instead of having the fly-by-night anglers going in and taking out all the fish.

Well, gentlemen, it is ten minutes to five, and we can re-open this subject for discussion tomorrow morning, if you wish.

Immediately after supper -- at 6:00 o'clock, or even a few minutes before, we would like all those who have cars to be prepared for the drive to the museum. We do not want any person to overload his car, but anyone who can take a passenger or two in addition to his own family, we would be very glad to have you take them to the Park.

DOCTOR CLARKE (Ontario): Just take this highway to the junction of Route No. 60, and then turn right.

THE PRESIDENT: You go north on Highway No.35, through Dorset, and up to Highway No. 60. It is marked there "Algonquin Park" very clearly. It is about 21 miles north of here. Then you turn right on Highway No. 60, and you come first to the Park Gates, a distance of

13 miles. Then you go up to the Museum, on the right hand side of the road.

There may be a number of deer on the road, so after you get inside the Park, drive with caution, please.

We will adjourn now until 8:30 o'clock tomorrow morning.

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---Whereupon the further proceedings of this Conference adjourned until Saturday, August 15th, 1953, at 8:30 o'clock, a.m.

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S E C O N D  D A Y

Dorset, Ontario,
Saturday, August 15th, 1953,
At 8.30 o'clock a.m.

- - - - - - -

---The further proceedings of this Conference re-convened pursuant to adjournment.

---Same appearances as heretofore noted.

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THE PRESIDENT: Gentlemen, will you please come to order, and we will gradually get under way.

The registration attendance so far amounts to 44. There are a few things for free on the front table. I do not know whether you have looked over them or not. There are copies of the Annual Report of our Department, and our Game and Fish Laws; copies of our Abstracts; copies of Abstracts of the State of Minnesota Department of Conservation of Fish and Game; a 1953 Synopsis of Fishing Laws.

There are a few extra copies of the paper on "Trout Planting" by Mr. Hazzard. There are a few copies of the paper on "The Future Role of Fish Hatcheries". There are a couple of plans of organiza-

tion, and a few extra copies of the agenda.

Those are "for free" if you are interested in them.

We are going to have a few copies of the school calendar, giving the various groups which meet here, and their time-table, and the subject-matters given at the school. There are not enough for every person, so I would be glad if we could have them distributed by states and administrators of the Federal Department of Wildlife, and The Wildlife Institute. If you will take official copies of those, then they will be in the various offices throughout the states.

I would be glad at the moment if the Ottawa group and the Ontario group would not take a copy at this time. They will always be available in our office for reference, if they are required. We will have 15 or 20 copies when Mr. Ruxton comes back.

DOCTOR CLARK: Mr. President, may I say that we were instructed last year to contact Oklahoma, to see if they did not want to belong to this organization. We did, and they don't. (Laughter).

THE PRESIDENT: Do you want to explain the situation relative to transportation? We will have the aircraft in here around noon, and it will leave for

Toronto right after luncheon. Mr. Sprecher and Mr. Kabat are going on it. Does anyone else want to fly down? Any who want to fly down, please be ready right after luncheon.

DOCTOR CLARK: I would appreciate it if those who are driving would give us some information about the space they have available. There are people who have to make reservations to-night in Toronto, and others who have to make them to-morrow in the early afternoon, and I would like to have accommodation for everybody. Plans are indefinite, and if you can go at either time, so much the better, but I would like those with cars to give us the necessary information.

THE PRESIDENT: Mr. Solman is driving to Ottawa. If he could take two or three of the boys to the capital, they can get space back to Toronto again.

Are there any other details we need to clear up before we proceed with the business of this morning's meeting?

(No response).

This again is a panel discussion under the chairmenship of Mr. Harry Ruhl, and Doctor Cottam.

MR. RUHL (Michigan): On this subject, I think perhaps we must be a little careful, or Doctor

Cottam will probably be be-devilled by many people about the longer season. He thought if we turned the other way, it would be a good thing.

I thought if we could discuss this from the Federal angle, the Provincial angle, and one of the States, we would get enough information to start the discussion. If that is agreeable, I will now ask Doctor Cottam to present his paper on the subject, "Does Upland Game Bear its Fair Share of Hunting Pressure?". Doctor Cottam.

(Applause).

DOCTOR COTTAM (Washington, D.C.): It is nice being with you, to discuss a topic like this, which Mr. Ruhl told me I was to present. I was unaware of this, and I am glad to have mine at the opening of the meeting.

The question whether upland game bears its fair share of hunting pressure drives deeply into the fundamentals of wildlife management. It's one of those challenging issues that bids us pause and take stock, re-examine our objectives and, if necessary, alter our course. I believe stock-taking of this sort is good for all of us, every onee in a while. Only through constructive criticism of our own activities and programs can we expect to avoid floundering in a

rut. Consequently, I plan to speak frankly on some rather touchy angles of the hunting pressure problem.

First, let's analyze the "fair share" aspect of the proposition. It implies comparison -- presumably a comparison of pressure borne by upland game as contrasted to other forms of wildlife such as waterfowl and game fish. It is not necessarily true under all conditions that greater hunting pressure on certain kinds of game will automatically reduce the take on other unrelated forms of wildlife. Nevertheless, evaluating pressure loads on a comparative basis has its advantages, and for this reason comments on the upland game harvest will be supplemented by a picture of the equivalent situation in the waterfowl field.

## Regulations

Looking back at the past half-century of wildlife management in this country, it is evident that as regards protective regulations we have swung from one extreme to the other. Instead of following a moderate middle course, we have shifted from a policy of excessive liberality in game take to one of excessive prohibition. A few decades ago, when widespread extirpation of game species such as deer, elk, and antelope awakened the public to the need for curbing

year-round hunting of such game, we went overboard in the opposite direction. Now we find that over-population of segments of big game species is one of our major management headaches, to most administrators.

Maybe this tendency to blow alternately hot and cold is typical of human nature. Perhaps it helps explain our treatment of the native Indians -- first destroying them with bullets and later with paternalistic kindness and over-protection. In any case, neither over-protection nor under-harvest is good wildlife management. Under-harvesting, in my opinion, big game, may be more serious than over-harvesting; too much regulation may be as bad as too little. Neither course, in the long run, is advisable for the hunter or the hunted.

Regulations we must have. They're as essential as traffic controls at busy intersections. We chafe at their restriction of personal privilege, but obviously neither wildlife administration nor any other program involving masses of people nor even a game of baseball or poker, can get along well without a sound code of regulations. Limitations on game-take constitute a basic tool of wildlife management -- a tool which, unfortunately, has frequently been misused, in

my opinion, If each State's or Province's recreational resource in upland game is to be exploited adequately and at the same time perpetuated for posterity, there must be effective regulation of bag limits and seasons. Similarly, if water-fowling is to be preserved as a healthful outdoor activity for millions on this continent, and if international obligations are to be fulfilled in the protection of migratory species, there must be suitable Federal regulations as well as State and Provincial regulations.

Though management of wildlife populations and habitats throughout the country has been placed on a much more intelligent, practical basis during recent decades, there's still much room for improvement. We still aren't removing enough of the surplus of some species in some places. It is my opinion that in recent years the most species oof American upland game have been more frequently under-harvested than over-harvested. As administrators and technicians, we have probably made more mistakes in being too restrictive than in being too liberal. However, it is well to remember that the most serious and irretrievable errors have been in being too late and doing too little to save a number of choice species that have already gone and others that are probably doomed. Do we need better proof

than to review the history of the passenger pigeon, great auk, heath hen, Carolina paroquet, and Labrador duck to mention just a few? I am convinced that at least a remnant of a number of our majestic game such as buffalo, moose, elk, antelope, mountain goat, mountain sheep, grizzly bear, peccary, wild turkey, trumpeter swan, whistling swan, and whooping crane and sandhill crane are still with us because of affirmative action in the form of both protection and habitat development.

In speaking of sandhill cranes, I did not count the little brown ones. They are in sufficient supply, I think.

In line with sound conservation principles, regulations should always be as liberal as the supply will permit. Otherwise there cannot be that ideal maximum and sustained harvest which conforms with the perpetuation of the species, happiness of the hunter, and good multiple use of the land. A major objective must always be the effective integration of wildlife management with other needed land use practices.

Because of continuous changes in land conditions, distribution and abundance (or scarcity) of game, it is essential to effective management that adequate discretionary authority for regulatory action

be placed in the hands of fish and game commissioners and administrators.

The length of the season, size of the bag, and other restrictive measures must depend upon many factors, and except to say that a full harvest should be taken, no simple formula can be prescribed that is equally applicable to fish, waterfowl, and upland and big game. In some areas, as has been emply demonstrated by Wiebe, Eschmeyer and others, the fishing season may be continuous and still an under-harvest is taken. It is inconceivable that a continuous hunting of big game or waterfowl could be permitted. In fact, it was spring shooting, and the consequent destruction of breeding birds, that stimulated the passage of the Migratory Bird Treaty Act. Following this, waterfowl began to increase. The bag limit should perhaps be not less than what the average hunter can conveniently utilize in a day. The public generally much prefers that any liberalization in regulations be expressed in length of season rather than an increased bag. The length of season and size of bag should be the maximum that the species can tolerate and still maintain a satisfactory population. These two regulatory tools have been found to be most effective in regulating the size of the harvest and in

making that harvest the most equitable for all our people.

## When is a Game Species Bearing its Fair Share of Hunting Pressure?

Because biological conditions on the American continent vary so markedly, it is to be expected that thepotentialities for game and other wildlife production must also vary. The actual as well as the potential game production will vary from place to place within each township, county, State, and Province.

It seems to me a number of factors determine whether a given species of game is bearing its fair share of hunting pressure:

1. Is management sufficiently effective that actual production approaches its potentialities? In this, other land-use needs must be fully considered.

For example, in Washington, D.C., the mall, as you know, would make a splendid area for game, if we wanted to expropriate it.

If habitat management is weak, and available environment is producing only half of its capabilities of game and other wildlife, to that extent the game are not serving the public as they should.

2. Is the harvestable surplus of each

species being taken within safe limits? If it is not, certainly we are failing in proper management, and the lost game are not contributing their fair share of the hunting load.

I think those are the two particular things which bear on that, and let us consider them for a moment, because, with my own background on waterfowl, I will advertize that more than the others.

Problems associated with the waterfowl harvest are quite different from those related to upland or big game. The likelihood of under-harvesting waterfowl is decidedly less than in the hunting of non-migratory species of wildlife. This is partly because the same population of waterfowl is subject to hunting in various States, along migration routes, instead of being exposed solely to the hunters of one locality or State.

Nevertheless, it is conceivable that under-hunting of waterfowl can and does exist. In my opinion -- and it is only my opinion -- the limited wintering grounds now available for satisfactory use in the Pacific Flyway have rendered the waterfowl harvest there inadequate.

I believe for a number of years we have been under-harvesting, rather than over-harvesting.

The same situation at times may be true in lesser degree in some other flyways. Part of this undesirable slack in the hunting bag may be filled by educating the public to the fact that a number of abundant species ordinarily regarded as less desirable or undesirable are choice game and very edible when properly prepared. In this category of slighted species, come the coots, marine ducks, and several other species commonly classed as "trash ducks" or "neighbour ducks". Besides altering public attitude toward these under-rated and underharvested waterfowl, there may also be need to liberalize the take periodically on certain choice species which frequently become especially plentiful in some regions or seasons. Among these may be mentioned the pintail, greater scaup, wigeon, and the green-winged teal, and especially the blue-winged teal, which I think throughout this continent, is under-harvested. The problem is how we can harvest the crop of birds which migrate so early. However, that can be discussed later.

The problem of the size of a harvest of waterfowl that can safely be taken is exceedingly complex. The size of the kill cannot be considered alone, but must be considered in relation to and in

connection with all other mortality factors. Obviously, all mortality factors combined must not exceed the production that has occurred for any given species, else the population curve will decline. If there is need for a population increase, the total mortality, including the harvest, must be less than the total increase.

The following theoretical chart may serve as an indicator of the percent of the fall crop that could be taken under various degrees of hatch and survival, assuming, in this illustration 10 pairs or 20 adult birds and that each paid laid a clutch off 10 eggs:

(Page 194 follows)

| Percent Hatch | Percent Survival | Number Produced | Total Population | Possible Percent Take (Total Mortality) to maintain static population of 10 pairs |
|---|---|---|---|---|
| 100 | 100 | 100 | 120 | 83 |
| 80 | 50 | 40 | 60 | 67 |
| 80 | 20 | 16 | 36 | 44 |
| 70 | 80 | 56 | 76 | 74 |
| 70 | 50 | 35 | 55 | 63 |
| 50 | 60 | 30 | 50 | 60 |
| 50 | 50 | 25 | 45 | 55 |
| 30 | 40 | 12 | 32 | 37 |
| 30 | 80 | 24 | 44 | 54 |
| 30 | 60 | 18 | 38 | 47 |
| 20 | 20 | 4 | 24 | 17 |
| 20 | 50 | 10 | 30 | 33 |

If we assume that in a normally successful breeding season the production equals the size of the breeding population, then with a species of waterfowl which breeds the first year, the combined mortality factors can take 50 percent of the birds that move south. At the present state of our knowledge, we cannot with a very high degree of accuracy allocate the percentage of loss to each of the various mortality factors. We know something of the size of the legitimate harvest, and have "guestimates" of the extent

of illegal take, and in local areas where catastrophic losses occur, due to botulism, fowl cholera, lead or algal poisoning, we may estimate the losses from these causes. Above and beyond all of these, however, there are other unknown losses.

Within limits of our present knowledge, it would seem that the inventories taken of the birds, and particularly the midwinter inventory, would suggest whether we are making an adequate harvest and whether the length of season or bag limits might safely be liberalized. All available data and years of experience working with waterfowl must be used as a basis of judgment in setting regulations.

In order to accurately appraise trends, it is imperative that we annually census the breeding population. The size of the breeding population will reflect the influence of all mortality factors combined. Obviously, the need is to eliminate or keep to a minimum all mortality factors except the legal take, and to maintain this at the highest possible rate. If the population is on the increase, the number of birds that could be taken by the gun could increase.

While it is essential to accurately

appraise breeding trends, it must be remembered that when conditions are favorable a subnormal breeding population can produce a bumper crop of young, and conversely we have observed that a very large breeding population of birds at times comes forth with an alarmingly small crop of young. Likewise, the size of the hatch and the size of the survival are not necessarily uniform and comparable. This condition makes it imperative that we obtain accurate statistical data through sound census methods of the population of birds on the breeding grounds late in the summer before the regulations are drafted.

Kill Data and Information Needed

It is extremely important to determine the size of the bag for any game species, and to appraise the extent of the illegal harvest. The legal kill is the soundest basis for judging the effects of the various hunting regulations, and every effort should be made to improve the accuracy of the kill surveys.

Incidentally, I think we are getting this quite accurately now, in the last two years, since we obtained the co-operation of the Post Office Department. We are getting it on a basis set up by statistics, and I think we can determine with reason-

able accuracy the extent of waterfowl, not on a state basis, but on a national basis. It is accurate, according to our statistics, to appraise it on a national basis.

With accurate kill data and accurate information on the size of the population which moves south each year, the importance of other mortality factors could be measured more accurately. It is believed that about 14 million waterfowl were legally harvested in the United States last season by about two million hunters. While with our present limited knowledge it is conjecture to indicate what percent the annual waterfowl harvest is of the total population, I am convinced that it is much higher than it is with any of our upland or big game species.

That is my own personal view of the matter.

It is not improbable that nearly one third of the total adult duck population is harvested each year. Again my own judgment is that 35 to 40 percent, or slightly more, return as carry-over or breeding stock, while the remainder (possibly 30 to 35 percent) are lost through illegal harvest, crippling, disease, predation, storms, accident, and miscellaneous losses.

That is my own judgment of it. It is difficult to prove, and still more difficult to disprove.

The information most needed to guide administrative action includes breeding surveys, breeding ground production surveys, percent of females in the population, percent of successful females, average success in rearing young, distribution of populations, time of movement, size, species and age composition of the legal kill, extent of illegal harvest,extent of other mortality factors and their identification and control procedures, total mortality, information from planned banding to accurately determine migration routes and extent and time of migration, differential in time and extent of sex migration, -- and there is a great difference -- population dynamics, and degree of turnover, winter surveys, habitat surveys, and ecological studies to guide management. It must not be forgotten that information based on good public relations and public contact likewise is essential if we are to successfully serve the American people who own this resource.

Now, I have a segment dealing with big game. Perhaps I could pick out a few points. I do

not want to overstep my time. I will be happy to deal with this briefly. These are my views on upland game, and big-game harvest.

THE PRESIDENT: You have plenty of time, Dr. Cottam.

DR. COTTAM: Thank you.

Let's look at some of the evidence that big game and upland game hunting pressure has not reached the proper saturation point.

Most students of big game agree that deer are not being harvested up to the allowable kill in much of their range. This is probably true of a number of other big game species. According to State big game inventories for 1951 1/, only about 11.6 percent of the Nation's 5-1/2 million white-tailed deer herd was harvested. Similarly, 14.5 per cent, or 28,862 mule deer of a total herd of 2,800,000, were reported harvested. Black-tailed deer, with a total estimated population of 900,000, produced only a 6.5 percent harvest. Thus, the take from deer of various species averages about 12 percent.

In contract to this, the 310,000 population estimated for elk, yielded a 17.9 percent harvest. I suspect the figure for the harvest is quite accurate on that.

Even so, a number of herds are known to be seriously over-populated. Among the Nation's 300,000 pronghorn antelopes there is an annual take of more than 19 percent, yet most of these herds are still increasing, where habitat is favorable.

Most of the facts at hand show that we are not harvesting the annual increment of deer in many parts of the country. There is reason to believe that reproduction of these animals might be higher if a greater annual harvest were taken. Martin and Krefting[2/] have found definite evidence of this at the Necedah National Wildlife Refuge in Wisconsin where depleted habitat due to over-population reduced the productivity of does. The same thing has been found in many other places. That is just one example.

Data from a number of States indicate that under prevailing buck laws, it is difficult to kill more than 10 percent of a herd. It is obvious, therefore, that only when regulations permit hunting of antlerless deer can an adequate harvest be taken in these heavily populated deer areas. Credit for the unfortunate persistence of the buck law is due largely, of course, to well-intentioned but misguided sportsmen. As a consequence, up-to-date knowledge

of deer management is being applied adequately in relatively few States, in my opinion.

It is probable that annual increases of deer in good range habitat varies from 35 to 45 percent. Cheatum [3] calculated, based on a good many post mortems, the potential annual increase of a representative deer herd on adequate range to be 68.8 percent. The confined George Reserve herd of whitetails in Michigan showed annual increments averaging 43.8 percent for a 13-year period.[4] Management of these deer included annual harvesting of one-third of the population. This plan held the herd in relative stability during that 13-year period. By rough estimate, Lauckhart [5] estimated that a suitable deer harvest would approximate 30 percent. He also pointed out that biological truism that natural mortality can be reduced by increasing the hunter take. New Hampshire, which has its ranges readily accessible to hunters and never has had a buck law, has demonstrated that deer populations will hold up well under heavy shooting. Pennsylvania [6] and some other States have had to learn the hard way that a good harvest of bucks and does is "the only way to prevent a tragic shrinkage of both the herd and its range."[7] That is a

quotation from one of the recent publications from Pennsylvania.

There seems little doubt that in many areas in the country if the present legal take of deer were doubled or trebled there would not only be more healthful, outdoor recreation for more sportsmen and more choice red meat for the Nation's larders, but also a marked improvement in deer ranges and in herd productivity.

Perhaps that is enough big game.

THE PRESIDENT: Go ahead. We started a half an hour early. Go ahead and finish your paper.

DOCTOR COTTAM: Studies by a number of competent workers indicate that in good habitat, several kinds of upland game birds and rabbits have usually been under-harvested. South Dakota has harvested 50 percent or less of its pheasant cocks, whereas a more liberal take would probably do no injury to the breeding nucleus. Cock pheasants on Pelee Island 8/ have deliberately been harvested to about 90 percent with no consequent depletion in following years. In Lancaster County, Pa., according to Fred H. Dale of our staff (Mss. unpublished)

cock pheasants are harvested almost to the limit possible, with a resulting ratio of at least 10 hens per cock. Yet this county continues to produce some of the dense pheasant populations on this continent.

Ammann 9/ has shown that in the Lake States ruffed grouse are not reduced by a liberal harvest. In the middle-forties, during a decline in the grouse cycle, Michigan kept the season open, while Minnesota and Wisconsin imposed closed reasons throught the low years. In 1948, when grouse populations were on the upswing and all three States had open seasons, Michigan -- which had an estimated kill -- the estimated kill was slightly higher than Minnesota's and about 42 percent greater (in excess of 100,000 more birds) than Wisconsin's. Erickson 10/ noted that this unnecessary grouse closure in Minnesota cost her hunters "over a half-million partridges" and "two million hours of healthful outdoor recreation."

Some States which have prohibited hunting of quail and mourning doves have found that populations of these birds have not increased. In fact, numbers of the birds are probably smaller, perhaps because of the lack of management, than in adjoining States where

a reasonable hunting harvest is taken. Errington and Hamerstrom,[11] Baumgartner,[12] and quite a number of others have indicated that quail populations in comparable shot and unshot areas were equally as satisfactory in the shot fields in the spring. British game breeders ordinarily aim to reduce their grouse and other upland game each fall to what they call, "the normal March level", finding that this practice helps to assure a high rate of survival and reproduction. Linduska[13] has concluded that in this country upland game is often over-protected, since in favorable habitat 25 percent of deer and 50 percent of quail and cottontail may be shot each year.

In conclusion, I believe that serious under-harvesting does definitely exist, both among upland game and other species. Furthermore, I regard failure to capitalize fully on renewable wildlife resources as a costly mistake, contrary to the principles of conservation and efficient wildlife management. Finally, in trying to win due recognition for the importance of wise regulation of wildlife harvest, let me urge that we do not lose sight of the fact that habitat management is even more essential to successful wildlife administration than control of the hunting take.

References:

"1/ Anonymous. 1951. Wildlife Leaflet 342. Inventory of Big Game Animals of the United States in 1950 and 1951.

2/ Martin, F. R. and L. W. Krefting. The Necedah Refuge Deer Irruption. Journal of Wildlife Management, 17(2): 166-176, April 1953.

3/ Cheatum, E. L. On the Population Dynamics of Big Game. Montana Academy of Science Proceeding 11:47-56, 1952.

4/ O'Roke, E. C. and F. N. Hamerstrom, Jr. Productivity and Yield of the George Reserve Deer Herd. Journ. Wild. Mgt. 12(1): 78-86, 1948.

5/ Lauckhart, J. Burton. Future Objectives in Big Game Management. Western Assoc. State Game and Fish Commissioners. Mimeo. 1-7, 1953.

6/ Latham, Roger M. Too Many, Too Long. Penna. Game News 24(2): 4-8, 1953.

7/ Anonymous. Management Problems and Research Studies. Penn. Game News, Spec. Issue No1, page 13.

References, continued:

"8/ Stokes, Allen W. Pheasant Survival on Pelee Island, Ontario, 1946-1950. Trans. 17th No. American Wildlife Conf., 285-293, 1952.

9/ Ammann, G. A. 1949 Grouse Prospects. Michigan Conservation.

10/ Erickson, Arnold B. Closed Season No Boon to Ruffed Grouse. Conservation Volunteer, Jan-Feb. 1951: 34-36.

11/ Errington, Paul L. and F. N. Hamerstrom,Jr. Bob-White Winter Survival on Experimentally Shot and Unshot Areas. Iowa State College Jour. Sci. 9(4): 625-639, 1935.

12/ Baumgartner, F. M. 1944. Bobwhite Quail Populations on Hunted Versus Protected Areas. Jour. Wild. Mgt. 8(3): 259-60,1944.

13/ Linduska, Joseph P. Are Hunting Laws Obsolete? Hunting and Fishing 29(10); 16-18, 66-68, 1952."

Thank you, Mr. President and Gentlemen, (applause).

MR. RUHL: Do you want to discuss each paper, or wait until we have heard them all? If we are to proceed with all the papers, I will now call upon Doctor C. H. D. Clarke, of the Fish and Wildlife Division, Department of Lands and Forests, Toronto, to present his paper (applause).

DOCTOR C. H. D. CLARKE (ONTARIO): Mr. Chairman, Mr. President and Gentlemen: There is a great tendency among sportsmen to forget that migratory birds are subjected to any shooting pressure beyond that exerted in their own hunting grounds. When the thought does occur it sometimes evokes a disgraceful "Lets get them here! Why raise them for those so-and-sos?" Few have a duck-eye view of the whole continent or even a whole flyway.

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I shall leave it to somebody else to point out just how complicated the business of setting waterfowl regulations is, and dwell on only two facts. One is that experience has shown that the regulations, over the whole area, do influence the kill, and that it is true under many conditions, though not necessarily invariably, that you can produce more ducks by killing fewer, and vice versa. The second is that the regulations control opportunity to kill and not killing itself, although they purport at least in part to deal directly with killing. This is more simply expressed by saying that if all duck hunters got as many ducks as the regulations allow the ducks would soon be finished.

None of us like restrictions for their own sake. By us I mean this group because we all have had to deal with the chaps who want to ban something on grounds of sentiment or quickly-formed prejudice, be it fishworms, crossbows, nylon nets or nydar sights. The ideal of our happy company is, we hope, to open up as much as possible, without damage to the resource. Yet with waterfowl we realize that regulations could be made more strin-

gent and still leave pressures operating which could be intensified to the point where the actual kill could increase. Suppose we simply took the spots that are most attractive to ducks and organized the shooting pressure so that we got as many ducks as we could; the kill would certainly go up. If, within the present framework, we can pull these pressures down the chances of regulations being liberalized or at least staying as they are may be increased. What we need to do is to look at the shooting, not at the regulations, and see where the pressure is.

In Ontario, ducks nest thinly over the whole area. There are few concentrations, but it adds up to a large number of ducks. After they are done nesting they gather in a number of favoured spots and then move on. In much of the province there is little fear of shooting out local nesting populations. It is the only shooting there is and to stop it would be to stop all duck shooting. In the south however, the early fall concentrations are augmented by the gathering of the flocks from the north. Also, opening days on all public marshes are shooting orgies in which every duck that flies is worth a dollar to the manufacturers of ammunition,

and they all fly, because there is nothing else for them to do. If the season is early enough for this pounding to be concentrated on the local hatch while they are still weak and pin-feathery, it would be easy to wipe them out. If, on the other hand, we hold off until they are strong and until there are plenty of migrants with them, then they all have a better chance. Even in the north nowadays sportsmen don't like their brids too fluffy.

So far as the treaty goes, seasons could be anywhere from September first to March tenth. In actual practice the great part of the province is closed by the freeze up in mid-October. That means, with the starting date prescribed by Treaty, a maximum possible season of forty to fifty days for the biggest part of Ontario, with the largest number of ducks present at the beginning, getting fewer and fewer as the season progresses. In the bulk of what is left of the province the ducks are frozen out at the beginning of November, and in the remainder, a very small portion, there are very few shooting places open after December first. Weather varies, as you know, and there are also twenty to fity thousand diving ducks on international waters during the winter. They

would be accessible at very few spots and in some areas where these birds come in late there is nothing to shoot at earlier. All in all, no power on earth could give any sportsmen in Ontario more than ninety days shooting, in the most open section, and fifty days over most of the rest of the populated area.

If one were to change the season from sixty days to one hundred and sixty days, it could not, in any language, be described as an increase in the shooting season.

Now, I have already outlined considerations which cut this period still more, in the interest of conservation. Nowhere do we actually open before mid-September, which cuts the natural season to thirty days in the far north. A progressive later opening cuts the natural season in other areas from about forty days in some, to between fifty and sixty days in the southernmost. You will see at once that if we try to preserve the local breeders, concerning which so much was said at North American Wildlife Conferences a few years ago, and it is in our interest to preserve them, then we can do so only at a sacrifice of total shooting time. It is silly to tack on days at the end, and the clos-

ing dates set by regulation are pure fiction.

Our southernmost opening is, generally, at the end of the first week in October. Even that is a little early, if we wish to have the maximum number of migrants in to share the opening day pressure. One year we got it back to the middle of October, with the result that most marshes had a two-week open season, as the freeze-up came at the beginning of November in all inland areas. In such a case you might expect a howl from the gunners but in actual fact the howl came only from a few owners of marshland. So far as the rank and file was concerned the opening day was one of the best they ever had, and - please note this - heavy gunning pressure at the beginning of the season disperses the ducks on all the public shooting areas, whether the season is early or late. Only the most assiduous duck shooters go back to it after the first week-end, and apart from the handful of persons with access to private marshes, one or two days is all anyone expects. The majority of sportsmen do not deliberately go after ducks and the season's bag, so far as we know, is about one each.

To put it in other words, you can drive around in October and interview the people, and you will find hundreds of people who have never given any

thought to waterfowl shooting at all.

On the basis of these facts I hereby assert that shooting in Ontario has no effect on the continental supply of ducks, and the juggling of regulations is a game without practical meaning.

It is the same with woodcock and snipe. A few years ago we acceded to the suggestion that snipe be closed for a year. At the time I predicted that we would hear from both the snipe-shooters in the province. Later I had to amend that. We heard from all three of them. I believe that I know personally most of the woodcock shooters in Ontario. There are about twenty-five or thirty who would average twenty birds a year, which gives six hundred birds, a figure I am sure is high. There is no game bird more abundant or more-readily available in the populated parts of the province, but for woodcock you need a dog from woodcock-hunting parents, and you must train it yourself. In spite of the number of birds woodcock shooting is like the Kingdom of Heaven - straight is the gate and narrow is the way, and few there be that walk therein.

Even if seasons on these birds started on September first their numbers in the province

would then be at or past their peak, and they diminish steadily until November, when, to all practical purposes, they are gone. There was one woodcock at Toronto last Christmas, and if he had not been in the city we would have shot him to see what was wrong with him. Of course we do not shoot on September first. Nobody wants gunners in the marshes before the ducks are open, or gunners in the woods before the grouse are open.

Our regulations allow people to shoot coots, gallinules and rails at the rate of twenty-five per day with no limit on possession. A few coots are shot, and in all our bag checks since 1946, we have turned-up one gallinule. My dog once brought me in another that someone had wounded and lost. We have no record of any rails shot for sport.

As for upland game, grouse are subject to great variations in numbers. Shooting has never affected them in this province, nor has it affected the numbers of Hungarian partridge. The only one left to consider is the pheasant, which is on a rather artificial basis. We have opened the whole province, on the ground that cock pheasants may as well be shot wherever they occur, which is in less

than a tenth. We still have a tradition of short seasons with concentrated gunning pressure.

As I see it, the most we could do for waterfowl by regulation is:

1. To open the season everywhere late enough so that where migrants do come into the picture they will share the pressure.

2. To alleviate opening day pressure by opening all migratory and upland species the same day in every area.

We do not delude ourselves with the idea that our Regulations are going to make much difference to the Continental population. What they might do is to help maintain the breeding population of our settled areas. Even it is only a drop in the Continental bucket. We ourselves will be the ones to derive the most benefit. These things we have already done, excepting that the pheasant still does not share the common opening day. There is no biological reason why it should not, at least on the southernmost area and we may one day see an educated public permitting the change, which will take pressure off both pheasants and ducks.

I might leave the whole subject on this

note, but I cannot resist saying that we have been after the Federal authorities to work with us in opening everything in the bird line in each part of the province on the date selected as suitable for ducks, and then run them all on into the freeze-up to one single legal closing date. This would dispose of a few nuisance regulations and greatly simplify the whole system of regulation for us and them. All that is involved is a recognition of the fact that the actual number of shooting days in any one place is never going to equal the number likely to be allowed under any other system of regulation. They seemed to feel that some Americans would scan our regulations jealously and discover that we were open on duck, or woodcock or whatever else it might be from October to December and raise the devil of a row. Frankly, we couldn't care less, although we are prepared to answer all questions patiently. Fortunately our sportsmen are not the jealous sort or they would have noticed the immense discrepancy between their own opportunities to shoot ducks and those of residents of almost all states. So far as they are concerned duck shooting now is not too different from the past. The average man got so little that it has been hard to take any away from him.

(Applause)

MR. RUHL: Thank you, Dr. Clarke.

I do not want to repeat, but it seems to me you cannot consider upland game as a group, or waterfowl as a group, because the conditions are so much different.

This title implies a comparison with some other game such as mammals or migratory game birds. Comparisons should be made on a species basis rather than large groupings such as upland game. It seems to me that one class of game needs to be considered independently. This is the group in which males are conspicuous enough either because of antlers or brightly colored plumage so that it is reasonable to restrict hunting to males or to limited shooting of females where the situation call for it.

It is our experience that the very intense gun pressure can be directed on these species provided there is reasonable law observance. The illegal kill is very difficult to determine but there is considerable information to show that such species can take terrific pressure. Not all states have taken full advantage of this situation, particularly with deer, but I think that situation is being

gradually remedied.

In comparing those species of upland game which do not lend themselves to shooting of males only we certainly are entering a wide field. In comparing waterfowl or migratory birds, with resident species, we get into a very complicated field.

I remember someone in the Fish and Wildlife Service saying, in protest to the annual urge for longer waterfowl seasons, "Do you realize that waterfowl have an over-all season of 105 days?" It seemed convincing and dramatic. Let us look at it a little more.

I have attempted to make a comparison between the potential gun pressure in the Mississippi Flyway states on certain upland game species and on waterfowl.

The number of lunting licenses and the length of the hunting seasons on such groups as squirrels, cottontail rabbits, grouse, pheasants, quail and waterfowl were compared. Inasmuch as a duck stamp is required to hunt waterfowl that was used on a basis of the potential number of people who might be pursuing waterfowl. The number of

small game licenses was taken from the P-R Federal Aid compilations, subtracting the big game licenses from the small game licenses wherever they were indicated.

We find that the squirrels in the Mississippi Flyway are subjected to a possible 331,000,000 man days of hunting pressure while waterfowl was subjected to about 41,000,000 man days of potential hunting pressure. We see, therefore, that considering only the number of licenses and length of seasons permitted that squirrels are subjected to eight times as much gun pressure as waterfowl. Cottontail rabbits came out more tha 12 times as much gun pressure as waterfowl.

This comparison indicated the potential gun pressure on quail was more than 3½ times as much as waterfowl, even though 4 states had no open season on quail.

Ruffed grouse are subject to about 2½ times as much pressure even though 8 states of the 14 have no open season on grouse. Pheasants suffer 50% more potential gun pressure than waterfowl even though 7 states out of the 14 have no open season.

This comparison might be refined still

further by comparing the actual man days of gun pressure on each species. You might get a closer picture but I am afraid it is still inadequate.

It is obvious that resident species can be studied on relatively small sample areas while migratory species offer a more complicated problem.

If we use the length of the season and the potential number of hunters, we must conclude that most species of upland game are subjected to a great many times as much pressure even though you compare waterfowl as a group.

It is my opinion that many seasons could be lengthened without danger to the species.

I am convinced that competent sample area studies where heavy percentage of the fall populations are removed is the only way to determine the pressure each specie can carry under the conditions that exist on the sample areas.

Until we do this, I don't think we will be able to make a very good comparison.

Comparison of hunting pressure and the game bag on the Rose Lake Wildlife Experiment Station and about 100 surrounding farms in Bath Township, 1947-1951, together with a knowledge of the proportion

of the game population harvested on the station, form the basis for this opinion. Pheasant populations are calculated by Allen's method, involving differential sex ratios of birds flushed at beginning and end of hunting. Rabbit and squirrel populations are computed by the Lincoln Index method involving tagging animals just before hunting and noting proportion of tagged animals in the kill.

## Hunting Pressure

Hunting pressure on the station averaged four times as heavy as on the surrounding farms (164 gun-hours per 100 acres, compared to 39). The station figure is a precise record. The farm figure is based on all hunters reporting at the farmyard. It does not include hunting by trespassers or neighbors who might hunt without reporting. The farm figure is undoubtedly somewhat low. The same qualification applies to kill figures below. However, the difference is not great enough to alter the conclusions drawn.

## Pheasant Kill

More pheasants could safely have been killed on both the station, and especially, on the private farms, without endangering breeding stocks.

The pheasant kill on the station was about five-sixths as great per unit area as on private farms (3.0 per 100 acres, compared to 3.6), in spite of much heavier gunning on the station. The farms have a greater acreage under cultivation and have less marsh, swamp, and abandoned land than the station, and actually constitute better pheasant range.

On the station, about 75 per cent of the fall cock population was harvested. On the farms, with much lighter gunning, the percentage removed could hardly have been as great. Removal of as high as 80 to 90 per cent of the cocks can be tolerated without injury to pheasant breeding stocks. Bath Township farms can stand much heavier gunning for pheasants than in the past.

Hunters are not interested when the cock population drops to about 2 per 100 acres. This in amny cases may leave adequate male stock so that the hunting automatically ceases before the end of the season.

## Rabbit Kill

Rabbit hunting on the station, and

especially on Bath Township farms, could be stepped up considerably, without endangering breeding stocks. The kill of rabbits on the station during the pheasant season was three and one-half times greater per unit area than on the surrounding farms (4.3 per 100 acres, as against 1.2). This differential was the combined effect of greater gun pressure and more deliberate pursuit of rabbits early in the season on the station, although the station represents somewhat better habitat than the farms. Information on the rabbit kill later on in the season on the farms is lacking. Yet, all evidence points toward a continued failure to exploit the full potential of their rabbit crop.

An entire season of heavy gunning on the station usually harvests from 20 to 40 per cent of the fall rabbit population. This population frequently contains as many as 70 to 80 per cent juveniles. This must also be the annual replacement rate. It should be safe to shoot as high as 60 to 70 per cent of the population without depleting breeding stocks. Obviously, Bath Township farms are being hunted far below their rabbit potential.

## Fox Squirrel Kill

More squirrels, especially on the private farms, could have been shot without cutting into the breeding stock. Hunters bagged three and one-half times more squirrels per unit area on the station than on the surrounding farms (28.5 per 100 acres of woodlot, compared with 8.1). Woodlots in the two areas are similar. The difference in the bag probably reflects actual difference in effort expended in hunting squirrels.

Most falls, on the station, about 40-60 per cent of the squirrels are harvested. On the farms, with evident lesser interest in squirrels, the percentage must be considerably below this figure. Fall squirrel populations often contain as many as 65 per cent juveniles (annual replacement rate). Station hunters are apparently cropping squirrels at or just below a safe level with regard to adequate breeding reserve. But, Bath Township woodlots could be hunted much more heavily without endangering squirrel seed stock.

## Making Farm Game Carry Its Share of Hunting

Longer hunting seasons, with their increased opportunity to take game, appear to offer the

most optimistic solution. However, the bag will not be increased directly in proportion to the increase in length of season. The rabbit season just passed is a case in point. At Rose Lake, the 33 per cent longer season increased the actual hours of hunting and the bag by only 8-10 per cent over what presumably have occurred had a "normal", shorter season prevailed. The open, snowless winter may have been a factor, but in this first test, hunters did not take advantage of the extended season in proportion to the increased opportunity to hunt.

In a 22-day season, pheasants at Rose Lake are removed at a rate of 70 per cent the first week, 20 per cent the second, and 10 per cent the third week. Obviously, extension of the pheasant season by one or even two weeks is not going to increase the cock kill to unsafe limits. However, an increased temptation to shoot hens might result.

Later season hunting for any species (particularly pheasants) will be less rewarding, and hence less likely to interest hunters. Also, major extensions of the pheasant and squirrel seasons will overlap the deer season. This competing interest would further reduce participation.

Daily bag limits, except for pheasants, are infrequently reached by most hunters. Still, increasing the daily limit of rabbits and squirrels perhaps to 8 or 10, would possibly increase the total bag somewhat. An increase in the pheasant daily bag to 3 birds would probably increase the total kill. Unfortunately it would also accelerate the rate of removal and reduce later season opportunity to bag pheasants. Perhaps increased daily bag limits should be considered only if adequate extensions of seasons are not possible.

Conclusions:

The results of carefully arranged sample area studies are needed to determine the proportion of the fall population that can be safely harvested for each species of resident game.

Waterfowl present a much more complicated problem. Perhaps long observation of the replacement rates and the kill percentage may find the answer.

When that has been done for enough time to cover the variation of weather, flights and kill, the answer can be more definite.

Certainly some species of duck are not being adequately harvested even with liberal daily

limits for Fish Duck.

But in the meantime, we must muddle along using the best information available.

My feeling is the only way you can do that with upland game is by actual testing. If you have an area in which you know the production, and the percentage of young in the bag, you know how much is being taken, and over a period of years you arrive at the proportion which could be harvested, and what regulations it takes to harvest in that particular part of the county. In that way we can arrive at an eventual idea.

With waterfowl, I do not know how you can do that, so I think you will have to approach it from some other angle.

I think that is all I have to say on this subject, Mr. President.

DOCTOR CLARKE: The thought occurred to me - although I suppose I should let Doctor Cottam say it - but on that chart, you know where a great many of the people were on the first day and when it comes down to the bottom of the chart, where were they? They were down in the marshes. They were out duck shooting?

MR. RUHL: No, I do not think so. This is the area opposite the Huron River and Lake Erie, and you can see the kill in that area.

DOCTOR CLARKE: So they were not out at all?

MR. RUHL: No. What happens, is like a carnival; the people are doing it because everybody else is. Everybody is going north, but they do not go shooting.

There is a large number who like to hunt ducks. Actually, however, I have gone past lake after lake, and nobody was on them at all.

One of our failings, I think, is that we do not understand what the human animal will do. When the hunting gets tough, they quit.

DOCTOR CLARKE: It is a strange thing, but in Britain, where the hunting is on private property by arrangement with the owner, it is like a series of opening days.

MR. RUHL: We open up the peninsula for grouse, and waterfowl, and then we have to wait until October because the farm folks want to get their soybeans in. We cannot spread the pressure as much as we would like.

A number of people have a hard time deciding whether they are going hunting for waterfowl or grouse.

MR. STEEN (Missouri): I have some comments about the rate of kill of waterfowl. In our state, we harvest 40 or 45% of our quail crop annually. On the Fountain Grove public hunting ground, we have about as complete a check as we can get; actually, we have fellows slipping in there to kill a few ducks, and they get out at the back. Our check of waterfowl out of there runs about 5% of the birds in that area.

Then I have a couple of questions I want to ask.

DOCTOR COTTAM (Washington, D.C.): On a different subject?

MR. STEEN (Missouri): Yes.

DOCTOR COTTAM (Washington, D.C.): I am thinking of the thing on a national basis. I do not question that it is only five percent in your state, of the waterfowl. What you are doing is comparing the local ducks - the ducks in Missouri state - with the total percentage of your harvest of quail. I do not question but there are many areas

where the actual "take" of grouse is larger than the duck take. But I am thinking of it on a national basis.

MR. STEEN (Missouri): That may be. You cannot prove it or disprove it.

I want to ask one question. You referred to the pheasants and the rabbits; would you not kill some hens, by extending the season? Could you not avoid killing hens?

MR. RUHL (Michigan): Yes. For three or four years I was reluctant to kill. We do not know about the illegal kill of hens. On Rose Lake, it is practically nil.

If we give them a large area, with restricted shooting, you will find many people who will want to do the right thing.

MR. STEEN (Missouri): I will express the opinion that you could kill 40% or 50% of the hen population, and get the same results.

MR. RUHL (Michigan): I have never tested it, and I cannot answer that question. I doubt if that is quite true.

THE PRESIDENT: The hens must die sometime, must they not. I think sometimes it runs to the extent of 30% or 40% each year.

MR. RUHL (Michigan): I think we get a 45% turn-over.

THE PRESIDENT: Why not shoot them instead of letting them die?

MR. RUHL (Michigan): The sportsmen are afraid of them.

THE PRESIDENT: I can see you are not biologists.

MR. RUHL (Michigan): Probably not.

MR. STEEN (Missouri): I would like to ask one question with respect to rabbits, which is the highly-expendable species. The peak of your population is in midsummer, that is when you have the crop to harvest. Boiled down, the harvest amounts to this, that it is a substitute for natural mortality. We simply get there first. That is all it amounts to. Within limits, we can take a portion of the population. That is true.

Why do you wait until late fall to harvest the rabbits?

MR. RUHL (Michigan): I think most of them do not want to go out until the weather gets a little cool.

MR. KABOT (Wisconsin): Is not the answer that the rabbits are still suckling their young or producing?

MR. RUHL (Michigan): There might be something in that, and it might have a great deal to do with these regulations. However, it is more than a biological fact.

MR. STEEN (Missouri): In Missouri, we start harvesting our rabbits in midsummer, and we think it is a good idea.

MR. DAMBACH (Ohio): I agree with you, but we do not start harvesting foxes nor rabbits until the middle of November, and we realize we have lost a good share of the crop, but that is the first time the farmers will permit you on their land. The point there is that the pressure of people is so great, that he cannot stand it before that time. He must finish his harvesting, before that army is turned loose. Those States and areas which do not have the population problem, which States like Ohio and some of the others have, can take some license. We have not gone beyond the single species as yet. In fact, with the normal hunting pressure which exists, has only affected one of these species, and we have abundant evidence that it has affected the opportunity

to hunt this species.

Our regulations are framed more to protect the hunters than anything else.

MR. STEEN (Missouri): If you had a long season, you would not concentrate so many people in the fall at one time.

MR. DAMBACH (Ohio): That has been tried with squirrels. We tried to spread the season from 15 days to 30 days, and it was an enormous job to get the people to go along with it. We still had the first day surge, which was a headache, but it would level off, and the success was as high at the end of 30 days, as at the end of the 15-day period.

MR. RUHL (Michigan): I think our situation is that opening on the 1st of October, people hunting in that country find it ineffective when the leaves are down. They just get discouraged, and they have other things on their mind. They have good fishing, and do not worry about anything else.

MR. STEEN (Missouri): We do not have much rabbit hunting in the summertime, but we have quite a bit of squirrel hunting.

DOCTOR CLARKE (Ontario): Perhaps I should have said something about the conditions here. The

only season of any kind on rabbits is in the metropolitan area, as a matter of convenience and regulation.

Right here, the rabbit season is 365 days per year, but there is no non-resident licence, which applies now, so if any of you want to hunt rabbits, you must stay over until September 1st, and do so. You could even sell them, if you could find anybody who wants them.

Doctor Reynolds did a good piece of work on the European Hare. In one particular place, where the European Hare was abundant, and where they had done considerable damage, there was a concentrated effort made to kill them, and the hunting was done with the idea of exterminating them, but without effect.

THE CHAIRMAN: While you are on your feet, Doctor Clarke, would you give us some statement in regard to the Pelee Island hen shoot?

DOCTOR CLARKE (Ontario): We figure we should carry over 10,000 hens there. We know pretty well what is on the Island. If there is only 10,000 or less in the Fall, we do not permit shooting. If you do not get the extra birds, you do not have a bigger crop next year by carrying, say 14,000 hens. Suppose there are a thousand guns on the Island, and 14,000 hens; the obvious thing is to allow 4 hens to a hunter.

THE PRESIDENT: We shoot them down to 10,000?

DOCTOR CLARKE (Ontario): Yes.

MR. STILES (Iowa): With regard to shooting hen pheasants; we tried certain seasons, where we allowed 1 hen in the bag and five cocks. That was in 1942, but instead of the harvest being in the ratio of 1 to 5, it was pretty close to 50/50. It is just a simple fact, that if you allow a fewer number of hens,it does not mean the harvest of hens will be in that proportion. In fact, there will probably be more of them.

MR. RUHL (Michigan): And better eating?

MR. STILES (Iowa): Yes.

MR. RUHL (Michigan): With the exception that the hunters may not behave the way you think they will.

MR. KABAT (Wisconsin): I agree with this thought, but I would caution against one thing, and that is to go along blandly and drop in qualifications, as the public does not take them that way. The order for Management is to increase the shooting. I do not think we know that that is the answer at all, but I think possibly technical studies could really mislead us at times.

We have the same data regarding pheasants and ducks, and when we began to examine some other points

we began to have some conflict.

We took our game reports, and we asked the hunters how many birds they took, and the greatest number of birds in a given time, They can only take 2 birds in one day, and some of them may go out twice on one day and we find 25% of the birds are taken by people who shoot more than 6 or 8 birds, which means ordinarily three or four days out.

When you add that all up, you find that 50% or 25% of the people who take birds are hunters who take a lot of birds, so that it is out of proportion and does not agree with our check. So I think if we are guided only by certain types of data, we will be misled.

We are now considering whether a long season will increase the ducks, but we are no longer certain whether it will or not. 10% of the hunters might be the real killers, and if you keep increasing their season, they might really take something, which will hurt the breeding population. I think before we permit a situation which will bring about an increased kill, we should be very sure of our action, because we very easily could be not quite careful enough, to bring about the results we desire.

MR. KIMBALL (Colorado): There is another thing,

too. All of these percentage figures interest me. We attempt an estimate on everything from deer and elk, on down. I think one's guess is as correct as another, I mean, that anybody's guess today is as accurate as anybody else's, insofar as estimating the total population.

MR. RUHL (Michigan): I think that is true. On Rose Lake, we have good coverage. We know where the brood is, and where they grow, and how many. We have pretty good control to figure out the population.

It is true, I think, in an area of that kind, you can come pretty close to knowing what your population is.

MR. KIMBALL (Colorado): I remember in Utah, when they fenced off an area, and they put some boys there to walk through and count the deer. Then they had a fire which killed all the deer, and when they counted the carcasses, they were about 100% off.

MR. RUHL (Michigan): It is very difficult to estimate a population. You have a lot of ways of checking figures. Out there, they probably know where each brood is.

It is different when going into an area and just guessing at it. We had quite an experiment on 6 acres. A prison crew built a fence clear around it, and we had

a good man as foreman, and we asked him how many deer were in there, and he said, "Three or four", while the others said, "Only one".

Finally, they drove them out, and there were 26 deer, and then it snowed, and we had to shoot three more, and they had been two or three weeks building a fence around that 6 acres.

MR. STEEN(Missouri): I personally do not doubt the fact that if you extend the season, you will increase the kill. I do not know if the value is nearly as important as most people think it is. The length of the season may be, if the situation is there, and if the pressure is there.

I think the crux of this thing is that we are pretty well agreed we are probably under-harvesting in most cases, with surpluses in other places, because of the amount of effort or man hours which are needed to get to the best places, and the effort of getting where they can secure an unsafe quantity or excessive quantity is so great, that the average hunter does not have the incentive, nor the desire, nor the inclindation, to put that much effort into the work.

MR. RUHL (Michigan): Most of the extra 10% in

the rabbit season were taken by rabbit hunters, but there are not too many of them.

MR. STEEN (Missouri): Then the question is, if you increase the kill, are you going too far?

MR. STILES (Iowa): What is your experience in Missouri in regard to the commercial taking of rabbits? Did not Missouri stop the commercial taking of rabbits, when they thought for a long time that commercial taking did not affect the population at all?

MR. STEEN (Missouri): Yes.

MR. STILES (Iowa): Was that by a legislative enactment, or a ruling by the Department?

MR. KIMBALL (Colorado): Mr. Ruhl, the idea of human behaviour is very important. If the commercial taking of rabbits did not affect the population, the only other explanation is you could not sell it to the public. The same thing applies to all game species. Whenever the hunters' success goes down, you have an immediate demand, and for the people who are hunting, it is not as easy as it was before. It is hard to get the birds under the normal regulations and all the circumstances surrounding them, and you either have to curtail the season, or do some artificial production or something.

MR. STEEN (Missouri): You have put your finger

right on it. Whenever hunting or fishing success drops to a point where the public demand is constant -- in other words, good hunting success and good fishing success by the average hunter or angler depends on the harvest of the "cream of the crop",-and when he has to go where it takes more effort than he is willing to put into it, the situation is entirely different.

MR. DAMBACH (Ohio): I heard Mr. Steen say that the commercial take did not affect the population number. Is it a fact that more people do not take rabbits?

DOCTOR COTTAM (Washington,D.C.): I think there is much merit in Mr. Kimball's comment that some of our statistical data is not very sound. However, I do not think that anyone's guess is as good as anybody else's. I think we have gone a long way in our census methods. While, in regard to some crops, I do not think we are very accurate, in others I think we have gone a tremendous distance.

You might be interested in knowing how we get our kill data. For the past ten years, we tried to get the Post Office Department to co-operate, but we could not get that until two years ago, and we made quite an effort, and finally got some assistance. The Bureau of the Budget in Washington, rules that whenever

any agency wants to put out a form, it has to be approved.

It is costing a good deal to get that data, but the information we are getting on a statistical basis is the data we are getting on the kill figure for certain percentages, and I believe,in the Post Offices where they are getting 100% of the villagers to fill out the cards, we can follow through with our agents, and come up with a fairly accurate estimate. On the basis of that fact, I am convinced that the data is accurate.

Just one word of caution. I do not think we should get the idea that our data does not mean anything. I quite agree that the average hunter does not take anywhere near his bag limit. I still think there is some merit in bag limits, otherwise it will put the sport too much in the hands of a few.

One of our chief responsibilities is to see that these resources are as equitably available to our people as is reasonably possible, and without some limitation to the bags, you will have a few people who will do nothing but hunt ducks. Therefore, there has to be some limitation.

MR. KIMBALL (Colorado): I did not mean to imply that and just to say that the figures are no good. I think that practically every species, including water fowl,

you can find out the kill. My idea was that it is possible to estimate our big game, and I say there is a possibility of errors creeping in to our total population, and perhaps for that reason, a more accurate way would be to estimate trends, rather than mislead anyone, to establish a certain level, and say we have more ducks this year than we had in 1940, or more deer this year than we had in 1950, and not say we had 2 million or 10 million, or 50 million.

DOCTOR COTTAM (Washington,D.C.): Is not that the very thing to challenge us to make progress?

MR. RUHL (Michigan): That is why I wanted to ask about this kill surveys, and how accurate they are.

DOCTOR COTTAM (Washington,D.C.): I think it was within three or four per cent. By States, it is not very accurate. According to the Civil Service, they told us it would cost too much.

I think in some of the smaller States, such as West Virginia -- one of the smallest -- it would be difficult to get anything significant for that State. They tell us it is not very accurate on a State basis.

MR. RUHL (Michigan): It seems to me that one of the things in the water fowl situation is, if you could get the kill, and get an sample of the percentage, you might get some indication there which would be fairly

accurate.

DOCTOR COTTAM (Washington,D.C.): There is another approach to it, and that is a banding programme. That is not a sizeable sample, but if you take a breeding ground, I think you can come to the population closely and can band a certain percentage of them, particularly the young. I think we are approaching that at this time. Of course, all statistical data you get has to be interpreted or understood. A few years ago, we found we did not know what percentage of bands were being returned, so we got a Gabe's outfit to come to our rescue. We put on the bands, and introduced a reward for the information we required, and we were getting three times the number of returns of those, than all the others.

I do not believe for a moment that all the reward bands came in, but at least it gave us enough data, so we could multiply it by three, and get a very good idea of the population.

When you build that up over a big enough area, it gives you a better indication.

MR. STEEN (Missouri): I would like to comment on this bag thing again. I agree that for this purpose, it would be useful, if readily available, as regards the top portion, or the cream of production.

But the point I want to make is that too many of us -- especially the public -- put too much reliance in the bag limit and not enough in regard to the control over the people themselves.

DOCTOR COTTAM (Washington, D.C.): I agree with that. There is one other thing in regard to this. I think the chart Mr. Ruhl used of the relative kill on the first day versus the other days, would apply to our northern States. It is not quite true in the far south.

Two or three years ago, I happened to be checking one of the States, and I found that on the last day, was the second highest kill. And an extension in the south does mean a great deal.

I think the extension of the season in most of the northern States does not mean anything, it is just there. But in the south, when weather conditions are favourable, it would mean a great deal. It is the wealthy people again -- for we are trying to get this thing as equitable as possible, but we must face the fact that the men in the big clubs will get their limits every year.

MR. RUHL (Michigan): I think that closes the discussion on this very interesting subject.

THE PRESIDENT: I want to thank you very much

for this discussion. It certainly is one of the main keynotes of the meeting, and we have greatly enjoyed it.

I notice Mr. George Phillips, the Superintendent of Algonquin Park is with us. We were his guests last night when we were at the Museum. I think we will have a 10-minute break now. Mr. Phillips has his aircraft here. If any of you want to fly to Toronto, he can take five. There is Mr. Sprecher, Mr. Swenson, Mr. Houston, and Mr. Kabat. Those gentlemen will be your passengers, Mr. Phillips. Is there any person who would like to go up for a flight during the break?

---Whereupon a short recess was had.

---Upon resuming.

THE PRESIDENT: We have a few odds and ends of business to look after.

One is in respect to the publication of the proceedings. We are undertaking to print the proceedings for the last three years -- that is, to mimeograph them. It has been indicated to us that the various States would like to get additional copies. I think we should write to the States asking them how many copies they want, and then we will use the money available, up to the amount we have, and after that, if we have to go "into the red" - -

which we certainly will -- to print the rest of the number wanted additionally, we will bill the States pro rata to cover the amount we are "in the red", based on the number of copies ordered. I am just suggesting that, and I think before we make that official, if you agree, we should have a motion from the floor to that effect, authorizing us to do that, which would mean the approval of the States making up the attendance here.

We are prepared to take that action, and if you want any modification of it, let us have it now.

DOCTOR CLARKE (Ontario): Why not bring it up in the business meeting?

DOCTOR COTTAM (Washington, D.C.): I was going to make another suggestion. If you are thinking of publishing these papers which have been given, I imagine we could have a number run off.

THE PRESIDENT: We thought we would include them right in the transcript. It would be too bad to exclude them from the transcript of the entire proceedings.

MR. SPRECHER (Wisconsin): You suggest a charge for additional copies to the various States?

THE PRESIDENT: Yes. Michigan has asked for some; Ontario will take additional copies, as we are going to send them to all our officers. I was suggesting

we use the money, up to $1,000, and then pro rate in case the cost goes beyond $1,000, that is, pro rate the various States who are members here on the basis of the number of extra copies they order.

MR. SPRECHER (Wisconsin): I do not think that would be quite fair, because 90% of the cost is in the preparation of the first copy.

THE PRESIDENT: The people who get the greater number, get the greater charge.

MR. SPRECHER (Wisconsin): It seems the extra cost should be divided amongst the States, which would be more equitable than charging for additional copies. Your copy might cost 25¢,apiece, while others would pay less or more. I think the cost should be divided amongst the States.

DOCTOR CLARKE (Ontario): You may run into a little difficulty there --

MR. SPRECHER (Wisconsin): Perhaps the preparation of the stencils might use up the majority of the fund.

DOCTOR CLARKE (Ontario): You will run into something which may not work on the stencils. There is a limit to what you can run off.

MR. SPRECHER (Wisconsin): We get stencils from which we can run 1700 copies.

DOCTOR CLARKE (Ontario): This will be a mimeographed job. We have a vote from the floor calling for 75 copies, that is, five copies each.

THE PRESIDENT: Some of them want more than that.

DOCTOR CLARKE (Ontario): And some of them do not We can increase that if necessary, to take care of it.

MR. SPRECHER (Wisconsin): Well, I will withdraw my objection.

DOCTOR CLARKE (Ontario): The biggest item is the initial cost.

THE PRESIDENT: The only reason I brought this up at this time was so Doctor Sprecher could have a chance to express his opinion.

MR. SPRECHER (Wisconsin): I will go along with whatever the rest of the States decide.

THE PRESIDENT: You are officially passing your authority to me, to vote on the subject, from your State?

MR. SPRECHER (Wisconsin): Yes, I will give you a memorandum of that.

THE PRESIDENT: We have now reached the final discussions, on the subject of "Administrative Set-ups". The subject is going to be introduced by Dr. Malcolm Taylor, Professor of Public Administration, University

of Toronto, Toronto.

We were very fortunate in having a group of men from the University of Toronto preside at a seminar course in administration, which was attended by some of the senior officers and field staff of the Department of Lands and Forests, on the "General Principles of Administration, Examination of our own Administration, Considering the Philosophical Basis of Administrative Practice, and pointing out the various weaknesses and strength in our own administration, in comparison with other types of administration", and so on.

Professor Taylor was one of the active participant in this group, and we found it was of such high value and interest, we thought it would be of interest to this group, to hear from Doctor Taylor.

I will not explain to you, Doctor Taylor's relationship to the administrative department of the University, because he can do that more efficiently than I, so I will ask him if he will preface his main paper, by an introduction of himself. (applause).

DOCTOR TAYLOR: Thank you, Mr. President.

The general topic for this session is a very broad and almost limitless subject, "Public Administration and Bureaucracy". On a topic as broad as this it is

possible to wander far afield without really coming to grips with the subject at all. I shall endeavor to meet the standards for a paper of this type which Adlai Stevenson once enunciated: it should bear the same relationship which a fan-dancer's fan has to the fan-dancer -- long enough to cover the subject but short enough to be interesting.

Despite the generality of the topic, certain points are implicit in it. By saying "Public Administration and Bureaucracy", we are acknowledging that bureaucratic organization is an element of public administration and that it is inseparable from it. Anyone who speaks of getting rid of bureaucacy is merely displaying his ignorance that bureaucratic organization is the product of the genius of the 19th and 20th centuries, that it is the means by which the productive capacities of thousands and even hundreds of thousands of human beings are directed to the accomplishment of common objectives.

Bureaucratic organization is not a monopoly government; it is found in Standard Oil, The Roman Catholic Church, and the Y.M.C.A. As Max Weber has shown, bureaucratic organization is: "from the technical point of view, capable of attaining the highest degree of efficiency and is in this sense the most rational known means

of carrying out control over human beings .... While some people may complain about the evils of bureaucracy, it would be sheer illusion to think for a moment that continuous administrative work can be carried out in any field except by means of officials working in offices. For the needs of mass administration today, bureaucracy is completely indispensable."

On the other hand, what your program committee had in mind -- at least what I have assumed they had in mind -- was "bureaucracy" in the sense that it is used by the public when they charge public service with being "bureaucratic". In this popular sense, "bureaucracy" has been identified with inefficiency and red tape, and the term "bureaucrat" has become a term of opprobrium, applied to well-meaning and competent officials like you are and I was.

As all of you are aware, bureauucracy in this sense has come under a great deal of external as well as self-examination; perhaps some of you have been leaders in this self-examination. The President's Committee in 1937, the Hoover Commission Report of 1949, the so-called "little Hoover Commissions" in several states, and the Ontario Royal Commission on Forestry in 1947, are examples. These resulted, I expect, from two sources:

(1) the continuing and expanding virulence of the attack on government bureaucracy by its critics, and (2) a positive factor, the recognition by government officials that self-examination was necessary as increasing responsibilities made essential a rationalization of organization which had, like Topsy, "just growed".

As we examine the attack on government organization, on the government bureaucracy, a number of aspects seem to me to evoke our attention. Among these are:

(1) the nature of bureaucracy which invites criticism;

(2) the imperfect operation of bureaucracy which warrants criticism; and

(3) the selfish motives which prompt unwarranted attacks

There are certain characteristics which all of us would associate with government bureaucracy. Among these are a passion for routine in administration with a consequent reliance upon rules. Delay in the making of decisions is common and we find too frequently a refusal or at least a reluctance to embark upon experiment.

One feature of modern government is that it is essential to have a body of experts surrounding the politica head in charge of a particular service. Andrew Jackson's ideas of short terms and rotation in office have not met the complex requirements of modern government. We have

developed instead the idea that officials should hold office permanently. As a consequence there has developed in governmental bureaucracy certain basic attitudes. These tend to give approval to the "safe" man, to emphasize accuracy, to deplore mistakes, to insist on examination of every side of every question, to stress the possible negative results of any proposed action -- all with a resulting slowness of action and a proliferation of paper work.

Modern government makes all these problems even greater, for the scope of the modern state and the vastness of its services make administration by experts inevitable, and to control the expert is difficult, for he frequently has a near-monopoly of knowledge detail. As Laski has said, "Experts, moreover, naturally tend to push the field they administer to its furthest confines; the appetite for power grows by what it feeds on ... Bureaucracy is characterized by discretion, secrecy, and conservatism, and all these muster to the preservation of power."

As damning and justified as these criticisms may be, it is perhaps some comfort to know that they are equally true of all other large scale organizations. As Laski has also said, "The problem, for example, of

"influencing a great political party to adopt a new outlook frowned upon by its leaders; the effort to persuade, say, a great shipbuilding firm to turn from iron to steel; the difficulty of inducing social case workers in a charitable organization to skepticism of their inquiries; these are merely examples of the power of habit over those who specialize in a particular department."

Government bureaucracy is not alone in resisting change. Let us look now at bureaucracy as we know it in our respective governments. This raises the fundamental question of the location of power in government. One of the major factors contributing to the ineffective operation of bureaucracy in government is the relationship of the executive to the legislature, that is, the relationship of the power which each exercises.

The problem resulting from this relationship is not a simple one in the Canadian and British system in which the executive and legislative power is fused, but it is an extraordinarily complex one under the American constitutional arrangement of separation of powers. In theory, the administrator is not supposed to be concerned with questions of power. This is supposed to flow from the statute. But, in fact, does it?

The amount of power which l
legislature to the President or the G .ch
the chief executive can impart to agenc. ıds,
as Norton Long has pointed out, upon the l. forces
in the particular case. As Long points out, s only
to contrast the problem of administration of a pr. -control law which Roosevelt won from Congress only by threats, and the administration of a price support law for agriculture backed by the farmers organizations and their congressmen or legislators. The Presidency, like the Governor's office, responds to and translates the pressures which play upon it.

These examples illustrate only a part of the problem. Many governmental bureaus administer programs having only one or at most 2 or 3 highly articulate interest groups as their clientele.

I should be surprised if that were not true of the programs administered by several of you here.

Sometimes I suppose these may work to the advantage of the bureau as when the bureau tips off an appropriation committee to restore a cut imposed by an executive budget agency, or when the Bureau works with its clientele groups and legislators to pass legislation which is opposed by the chief executive.

At other times, the bureau may suffer for I would think it likely that the demands of a pressure group are more often opposed than approved by the professionally-trained officials of a bureau. Then the agency head and his chief subordinates may be at the mercy of an appropriation committee, despite the strong support of a Governor or President who is more mindful of the public interest than of the special group interest.

The agency must then attempt to secure on its own support from one or more of its "publics". But the public which might support it may be unorganized and inarticulate. The influence of an organized voice is just as powerful at the administrative as at the political level.

I have not said much about the Canadian situation. We do have one or two advantages. First, our party organization is strong, and what one segment of the party wants, the whole party must share responsibility for getting.

Almost always, our legislative and executive relationships are like those in one of your states when the Governor and all the elected officials and a strong majority in both houses of the legislature are all of one party and the party is agreed on what it wants to do, and votes as a bloc to get it. It is comparable to the 1933 Roosevelt honeymoon period lasting for a full four year term.

One thing which our system does, however, is obscure the role of the pressure groups, and I think that more studies of political scientists of the influence of pressure groups on public officials are required.

Furthermore, while our system does concentrate power in one locus, the Cabinet, which is composed of the legislative leaders of the majority party, we lose, I believe, by the fact that our legislature does not exercise its investigatory power as freely as your legislatures do. I felt this weakness more keenly before the advent on the national scene of the junior senator from Wisconsin, for the investigative power is clearly one that can be wielded irresponsibly and can destroy agency programs for the purpose of personal aggrandizement.

A major weakness of governmental bureaucracy, then, is this dispersal of power which makes effective management difficult and sometimes impossible.

A third aspect of governmental bureaucracy concerns the charges of inefficiency and red tape, many of which come from dubious sources. In his book, Bureaucracy in a Democracy, Charles Hyneman uses this illustration:

> "When you and I charge people in the public service with inefficiency, we have no sharp definition of efficiency in mind. Inefficiency is an emotional work in which we

"wrap up a wide range of things we don't like. We call government inefficient if it is doing something we think it ought not to be doing (buying surplus potatoes, for instance): we call it inefficient if we don't like the way in which it does something (buys potatoes direct from farmers instead of through brokers, or vice versa); we call it inefficient if we don't like the performance of the officials and employees who do the work of government (they can't tell an Irish potato from a sweet potato)

Red tape, on the other hand, is anything which the government does which takes more time in doing than you or I think necessary, or which government officials seem to do by a very circuitous route.

The most frequent criticism of government efficiency is that it is not as efficient as business, and the reason is said to be the lack of the profit motive.

This explanation, it seems to me, does not have much validity. The bulk of the work in the business world is done by employees on wages and salaries and the profit motive provides no incentive for them whatever. In practice, the fact that a distant employer is making profits out of his labour may have a negative effect on an employee's output.

For certain high officials, it seems to me, the positive challenge of statecraft at a moderate salary

provides an incentive much more stimulating than a share of profits for selling the public, for example, a cereal of dubious nutritional value which has the great merit that it crackles and pops.

We must admit, however, that inefficiency in government does exist. One reason is incompetent personnel Again, the blame must rest on a public which will not raise its standards of political consciousness high enough to support its political parties on issues and policies rather than on patronage and graft.

A great many people who criticize government for its red tape base their criticisms on one single experience in filling out a civil service application form. Certainly, many of these forms are too long, but why? -- in large part because pressure groups like the temperance forces and veterans organizations have insisted that certain questions be placed on it. Too often, people demand of government a standard of morality which they themselves do not uphold.

One additional cause of inefficiency and red tape is the suspicious attitude of the public and of legislators to the governmental function. While the standards of integrity and honesty of government employees is, in my opinion, higher than in private business, an incredible

number of checks are imposed on public officials that do not operate in private business. As one bureaucrat expressed it:

> "Pounds of regulations, inspections, internal audits, and post audits, the General Accounting Office, the Civil Service Commission -- all of these were created by you -- the public -- in laws so written that the conclusion to be drawn from them is inescapable -- you do not trust me to do a job without circumscribing limitations. So you protect the purity of public service by legal red tape."

Inefficiency and red tape are also caused by the uniform Procedures Acts which force a Procrustean bed of uniformity on administrative agencies regardless of their individualized needs.

There are other charges, but these are enough. You could add more from your own experience. Our major interest here is, what can be done about these twin evils of inefficiency and red tape.

In considering possible solutions to these problems of public administration or public bureaucracy, I know it is not expected that I shall come up with some special Canadian patent medicine to cure these ills. The ills of bureaucracy have been diagnosed before and

excellent therapeutic measures have been prescribed. Fortunately, we are not in the position of the patient about whom was said: "There is no cure for this disease, The doctors said as they took their fees."

For purposes of introducing the discussion to follow, these points may be worthy of consideration:

(1) Many of the shortcomings of bureaucracy are merely the reflection of the shortcomings of our political process of which administration is but one aspect. It is in large part the result of the public's attitude. TIME magazine last week described the United States as a "nation which always distrusts and sometimes despises politicians (while handing the responsibility of government over to them)." While I am inclined to believe this an overstatement by TIME -- certainly it is for Canada -- there is yet enough truth in it for it to be a serious indictment.

Improved public administration will come automatically as people adopt a more responsible attitude to the functioning of government, scrutinize more closely what pressure groups are about, insist on a higher calibre of representative and, above all, achieve a greater degree of party responsibility. All of these are true of both our countries.

(2) Speaking as an outsider, and with all the modesty which that position imposes, I believe that one major change necessary in the United States is the integration of the power relationship between legislature and executive. With governor and legislature at cross purposes, the administrative agency is frequently caught in the middle, or its policies and appropriations become merely an act in a three-ring circus, of legislature, executive, and pressure group.

(3) The legislature must act more responsibly, particularly with respect to investigations. Again, looking at it from afar, I am certain that irresponsible investigations have done irreparable harm to the Federal Service. Even if, by some miracle, the administrative environment of the Federal Civil Service were somehow to reach perfection, I should think it would take 20 years to overcome the damage done in the last two years.

(4) In Canada, particularly, and I know this is not true of several of your states, we need a vast improvement in the Civil Service Commissions. In general, they need more control over appointments, more freedom from political appointments. Again, this is a public responsibility.

(5) The conditions of work -- remuneration, sick leave, vacations, pensions, and other perquisites must be comparable to private industry.

(6) I think we must devote more attention to the developing study of human relations. We are just beginning to learn how to tap the well-springs of creative genius and the will to create which lie in every human individual. It has been the major weakness of large scale organization that it has not taken workers at all levels into its confidence, and consequently employees have been working without purpose, without knowledge or appreciation of the objectives.

The humanizing of bureaucracy resulting from an acceptance of the fact that it is people who make up an organization and not little boxes on an organization chart -- this will eliminate much of the reason for the charges of inefficiency and red tape. Administration, as well as policy formation, must be democratic.

(7) We must also look, of course, to our basic organization. It is not enough to appoint little Hoover Commissions or Royal Commissions every 20 or 30 years to conduct a major overhauling of organizational machinery. There should be full time adequately

staffed Organization Management bureaus in every state and provincial government, with O & M divisions in every large department. Examination and re-examination of organization and procedures should be a continuing process. These should foster an attitude of self examination on the part of every official at every level. His attitude will not then be one of suspicion of the investigator but of welcome to an expert who can assist him.

The potentialities of such a process were recognized by Walter Bagehot, the great commentator on the English Constitution, back in 1867. While his reference is to the role of the Minister, his example is equally applicable to the function of the Organization and Methods expert:

> ".... the intrusion from without upon an office of an exterior head of the office, is not an evil, but .... on the contrary, it is essential to the perfection of that office. If it is left to itself, the office will become technical, self-absorbed, self-multiplying. It will be likely to overlook the end in the means; it will fail from narrowness of mind; it will be eager in seeming to do it; it will be idle in real doing.

An extrinsic chief is the fit corrector of such errors. He can say to the permanent chief, skilled in the forms and pompous with the memories of office, "Will you, Sir, explain to me how this regulation conduces to the end in view?"

> "According to the natural view of things, the applicant should state the whole of his wishes to one clerk on one paper; you make him say it to five clerks on five papers."
>
> "If a junior clerk asked these questions, he would be "pooh-poohed." It is only the head of an office that can get them answered. It is he, and he only, that brings the rubbish of office to the burning glass of sense."

Surely, we would agree with Bagehot, though he wrote 85 years ago. We must be certain that our administrative machinery functions in such a way that any "rubbish of office is brought to the burning glass of sense".

THE PRESIDENT: The Deputy Minister of our Department has just arrived, and I think he may want to say, "hello" to the boys.

MR. F. A. MacDOUGALL (Deputy Minister, Department of Lands and Forests, Ontario): Mr. Chairman and Gentlemen: The hon. Mr. Gemmell, the Minister of our Department, unfortunately was ill, and had to leave for his home, and he asked me if I would come up and welcome you on behalf of the Province, and to express his regret at not being with you, and the hope that you will have a pleasant conference and have a nice stay here.

I want to thank you personally for coming, because your presence has done a great deal to assist our boys, not only at this Conference but the ones we have attended before.

We are, you might say, infants in regard to fish and wildlife in North America, and your experiences, and the information we have gained from you, has been very stimulating to us.

I wish to thank you very much, and I do hope your stay will be pleasant. (Applause)

THE PRESIDENT: Thank you. Professor Taylor's paper is now open for discussion. We had a little break a while ago, and some of the gentlemen had an aircraft ride, and it has run our time a little short, so if it is agreeable to all of you, I would suggest we have Mr. Willard's paper after luncheon.

There is adequate time for discussion of Doctor Taylor's paper, if any person would like to raise any question or contribute anything to it.

MR. KIMBALL (Colorado): I would like to ask a question.

Doctor Taylor mentioned in his discussion this relationship in the States between the legislative bodies and the administrator, and that sometimes the administrator was put quite "in the middle", so to speak.

I was wondering what solution Doctor Taylor might offer to get our legislatures, governors and administrators, a little closer together on these things.

DOCTOR TAYLOR (Ontario): I think I will duck that question - you have a great number of political scientists in your country who are much better qualified to solve your problems.

MR. KIMBALL: We asked for it for a long time, and they came up with the same answer that we would just "have to shift for ourselves".

MR. RUHL (Missouri): In our Department we have a group who are questioning this procedure. Could they not become more familiar with the people, and be a little less critical?

DOCTOR TAYLOR: Perhaps the respresentative of your Federal Government here could comment on the work of the management division of the Budget Bureau.

Administration Management has not assumed enough importance here. The British Government has done a great deal in this area, and I may say that the work of the Organization and Management Division is the one example you can find in recent years where a House of Commons Committee actually said to the Treasury officials, "Put more money in the estimates."

Usually Legislative Committees go the other way, but they said, "More money must be given to this Organization and Management Division," and the way they kept them from becoming just part of the machine, is that while "O and M" representatives are in each department, their responsibility is still to the Management Division, of the Treasury Department.

In Ottawa, in our Federal Government, the Administrative Management Division is under the Civil Service Commission, and it is my first impression that there are arguments against that. It means you have to sell the case twice, first to the Civil Service Commission, and sort of lead up to the Treasury Department, but when you have a Treasury Department which has its own Management

and Administrative Division, you tell them what you need, and if they approve they will say, "We will see the money is available."

If the Civil Service Commission says it is needed, they have not the authority to back it up.

MR. RUHL: We have had some work done for our group, and we found that outside management consultants could say something which people who were there permanently would not want to say.

MR. BURWELL (U.S. Fish and Wildlife Service, Minneapolis): I think several years ago under President Truman, we had an investigation into governmental operations along a number of lines, by the Chief Accounting Office.

The result of these investigations seemed to be pointed to the end result that the current administration wanted improvements along certain lines.

Recently we have been investigated further by the General Accounting Office, and perhaps we may cause the Government to take a different attack under the investigations that are made, as near as I can see, by the same people by whom we have been told, "These are the things that you would like to have at this time," and the fact is that this Old Line Committee did so, has not made much difference.

DOCTOR TAYLOR: I think there is a point to be made there. I think you have three choices - consultation by an external management group which comes in and makes a survey and then leaves, or a group in your government service which sticks around and is responsible for seeing that the recommendations work, or a combination of the two. You probably do not want to feel that your management surveys were done by people who just came in and made their investigation, but who were not responsible as to whether the recommendations lived, or died, or got well.

If they were responsible, and had to stick around, then if the recommendations did not work, the people would not pay much attention to them the next time.

MR. BURWELL: That is a very true statement. One of the investigating bodies several years ago made many recommendations, but so many of them were so wild and woolly, that the good ones got lost in the shuffle.

MR. RUHL: All of the administrative services had a "crack" at this and told us why it would not work, so the end result was nothing but confusion. Sometimes an outsider can see things which you are so used to, you just do not see.

THE PRESIDENT: Is there any further discussion on this paper?

MR. KABAT (Wisconsin): Doctor Taylor, you made the comment about the difference in some programs, and that the Congress passed an Act. Do you think there is any good in having a program from a general group, which would be more efficient in the long run?

In other words, would you always receive the support from the broader group? In the end, your program will be curtailed or handicapped, or is it expedient to go ahead and use something which can be used in this case? In the case you mentioned, they received the views of the price administrator.

DOCTOR TAYLOR: I am not quite sure I get the full import of your question. I was trying to illustrate the difference between Leon Henderson's problem in controlling prices and that of the administrator supporting prices.

MR. KABAT: I know what your point was, but I am asking the question if at times it is not gainful to use an authority for expediency, to gain some emergency end?

DOCTOR TAYLOR: Oh, yes, I agree. It seems to me the authority was made necessary, because the public was unorganized.

DOCTOR SCHNEBERGER (Wisconsin): Did I understand you to say that in the States, the Governor should always be a part of the Legislature, and that the Government would be more effective that way?

DOCTOR TAYLOR: It is not quite as simple as that.

If the Governor were a member of the Legislature, and could be forced to resign -- and this gets into a discussion of the whole British system -- then if the party does not support the executive, which includes all the heads of the departments who are also members of the Legislature, they are out, and it means a new election; or, as an alternative, the Opposition Party comes in, and the Leader of the Opposition becomes the Prime Minister, and his chief party leaders become the heads of the departments.

The difference in your country is that if you look at the heads of the departments under President Eisenhower, how many are political party leaders? The strength of our administration is that the man who outlines the program, is one of the leaders of the party, who has come to the top after long years of experience, and he goes out of office, if the party does not stick with him.

In that way you have responsible parties. In

that way the people know what they are voting for, but under your system, the power is so dispersed that sometimes you do not know whether you are voting for this or that.

MR. KABAT: The extreme is the French problem, in which there is no agreement at any time.

DOCTOR TAYLOR: Then the French leader is out. That is what I meant when I said they must have the power to call an election on the issue. If it looks as if some of the boys are getting out of line, the Prime Minister simply says, "Will you vote with me, or have an election?"

They know that an election will cost them money, and is an uncertain thing, and they may not be re-elected, so they vote, and that builds up the party's record.

The reason why President Roosevelt got his program through in the first one hundred days, was because he held up all patronage. The boys did not get any until they voted the right way. But even Roosevelt, with an overwhelming political majority in 1936, was faced the next year with a revolt in the Supreme Court and had to bring about a certain re-organization.

There are advantages in both systems, of course.

DOCTOR SCHNEBERGER: Do you have anybody checking on the Legislature?

DOCTOR TAYLOR: The Opposition always is checking it. They are always an alternative Government. That is, the Prime Minister and the public leaders know that sitting across from them is a government ready to take office, and the public needs only to swing about ten percent of the votes to put them in.

MR. KIMBALL: There are two parties, those who are in power, and the party which wants to get in, and sometimes the public is not satisfied with either one.

DOCTOR TAYLOR: Then they throw them both out, and bring in a new one, like they did in British Columbia.

We have four parties in Canada; two splinter parties are in control in two of the provinces. The American Political Science Association, which has studied this very carefully, has issued a report called, "Toward A More Responsible Two-Party System". That would probably be enough if you had closer harmony between the Administration and the elected officials, and the majority party in the Legislature.

MR. KIMBALL: Supposing the Department of Lands and Forests submitted a budget and asked for a certain appropriation, then does the party in power, the Prime Minister, and everyone, support that budget?

DOCTOR TAYLOR: After they have agreed to it, right to the last nickle. If the legislature cut the budget by five cents, the party would resign.

MR. KIMBALL: Well, I am "all for that". (Laughter).

DOCTOR TAYLOR: But the point is that your budget goes through a very careful checking process before it gets the Cabinet's support.

DOCTOR SCHNEBERGER: They must have a caucus behind closed doors.

MR. KIMBALL: They iron all these differences out before the public gets the budget at all?

DOCTOR TAYLOR: That is right, but they cannot hide behind that responsibility. They cannot say, "I was for, say, 170 aircraft groups, but the appropriation committee cut it to 150."

MR. KIMBALL: They can say that is the recommendation, and they have to stand behind it?

DOCTOR TAYLOR: Yes.

MR. KIMBALL: If the public did not like it --

DOCTOR TAYLOR: Then they can throw them out.

THE PRESIDENT: Thank you for your discussion, gentlemen. I think we all see the major points in this

discussion, that we have to deal with the public, and the public determines what sort of government we will have.

Thank you again, Doctor Taylor, for coming up here.

I have a few copies of the cirriculum of the school here, so that a copy can go to each of the States, and the Federal representatives, both of Canada and the United States.

If any of you wish copies, they are available. However, the number is limited.

I think at this time we will adjourn until this afternoon at one-thirty.

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---- Whereupon the further proceedings of this Conference adjourned until this afternoon at one-thirty o'clock.

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A F T E R N O O N  S E S S I O N

Dorset, Ontario,
Saturday, August 15, 1953,
1.30 o'clock p.m.

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The further proceedings of this Conference re-convened pursuant to adjournment.

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THE PRESIDENT: Gentlemen, shall we come to order? I think our audience will be a little sparse this afternoon, for which I must apologize. Aircraft trips, and so forth, are beginning to have their effect.

Mr. Willard, we are very glad to have you present with us today in this final discussion on "Administration". We are very sorry that Mr. Wilson found it impossible to be with us, but we are glad you were here to take his place, and to participate in the discussion, in Mr. Wilson's absence.

MR. E. V. WILLARD (Minnesota): Mr. Chairman and gentlemen: I am glad this agenda has emphasized my part as an "informal discussion", because mine will be decidedly informal.

I was aked to come here and take part in this panel discussion only about three days ago and I have had no opportunity to prepare a paper or an organized talk on this subject. Consequently, all I can do is to discuss the experiences we have had in Minnesota. I realize that following the able talk by Dr. Taylor that what I have to contribute will be decidedly an anti-climax.

This taking the part of someone else on short notice reminds me of a stock campaign story often told by Governor Olson. It seems that he was to make a campaign speech in a country school house on a certain evening. The boys in advance had selected the one who was to preside and introduce the speaker. At the last minute he called up to say that he could not come. There was a scurrying around to find one to take his place and finally one was drafted and told that he simply had to preside. The man who had been delegated to perform this task walked over to the table, flustered and embarrassed, and after stammering apologies for his shortcomings as chairman came through with something like this. "I have never done a thing like this in my life and I feel that I have already made a mess of it. I just am not qualified to do this sort of a thing. However, I take some comfort from the fact that I have been told that some of the most highly successful

businessmen never could make an appearance in public or make a speech while some of the most renowned orators have been no good at anything else. I now take pleasure in introducing to you the greatest orator in Hennepin County, Floyd B. Olson."

On looking over this gathering I am impressed by the fact that I am perhaps the only one here who was privileged to have a part in the organization of the Midwest Association of Game and Fish Commissioners in 1934. I do not know how many of those who attended this first organization meeting are still active in conservation. Ernie Swift, Director of Conservation of Wisconsin, I know is one. I am proud, however, to have had a hand in the organization of this association which has grown into such a splendid substantial group devoting its energies in promoting regional conservation and solving its problems.

As I have already indicated, I can only talk about our experiences in Minnesota. I should have liked to have had time to contact some of the departments of other states to learn of the results of their efforts to streamline, administratively, their departments and thus have been able to deal with it comparatively and on a broader basis.

We have spent some time in our department during the last year or two trying to devise and introduce methods to simplify and increase efficiency in operation. A background to our department is in order as it will help account for our particular administrative problems, many of which were inherited by the present organization at the time it was created in 1931, and which we have been trying to rectify and bring about a closer co-operative relationship between the several units which make up the department.

Prior to 1931, all of the so-called natural resources of Minnesota were administered by four separate departments. There was a department of game and fish and a department of forestry and fire prevention with jurisdiction over wildlife and forests respectively. A department of drainage and waters acted in an advisory capacity in matters relating to drainage of agricultural lands and in a very limited way over public waters. State lands and minerals were under the jurisdiction of the state auditor. Each of these departments had functioned for many years, each one under its own statutes under which they had operated independently of each other all of them for periods of from 30 to 40 years.

The legislature of 1931, created a department of

conservation to be under the general jurisdiction of a non-paid five man commission. The commission was to be responsible for general policies and was to elect a commissioner of conservation to have administrative charge of the department. The act abolished the departments of game and fish, firestry and fire prevention, drainage and waters, and transferred the duties of the state auditor as land commissioner to the department. In lieu of these departments the legislature created a division of game and fish, division of forestry, division of drainage and waters (now division of waters) and a division of lands and minerals. The legislature of 1935, added a division of state parks. The transition from independent departments to a new consolidated department of conservation with five divisions was brought about by the simple expedient of the act declaring that all acts, under which the old independent departments had functioned, "inconsistent herewith are superceded, modified, or amended so far as necessary to give full force and effect to the provisions of the act."

Keeping in mind that the old departments had operated, most of them, for 30 years or longer and the voluminous enactments and amendments to laws that had accumulated in each case, those who have experience in administration will readily understand the uncertainty as to what

provisions of these acts had become "superceded, modified or amended" by the reorganization act. This determination has been largely the task of administrative agencies. However, as each legislature has enacted legislation subsequent to the organization of the new department, attempts have been made to make laws conform with the pattern of actual operations of the department.

Another factor which tended to delay the coordination of all of the divisions of which the department is composed was the manner in which funds had been appropriated for the corresponding independent departments during the early years. The cleavage between departments and their functioning was reflected by a tendency of the legislature to continue the same independent status of the divisions, by appropriating funds, not to the department of conservation, but to each individual division of operation. This tendency still prevails in a limited way. The commissioner of conservation, however, with the approval of the commissioner of administration may now transfer funds and personnel from one division to another and thus aid him in developing his own pattern.

At this point I perhaps should explain the lines of authority under which the government of the state of Minnesota functions. As in all other states, the governor

heads all activities. Under him is a department of administration which acts as the business agent for the whole state. That department is headed by a commissioner who functions under laws which virtually puts him in charge of all budgeting, purchasing and general activities of the state government, subject to the approval of the governor. No transfers may be made of funds from one division to another in a department and no purchases of material, award of contracts, or execution of leases or agreements may be entered into without the approval of the commissioner of administration. This, of course, does not apply to the department of conservation alone but to every other department of state government.

I have mounted on this board before you a series of charts which outline the plan of organization on which we are working at the present time. Some of it is in its formative stage. Considerable time has been spent on developing what we hope is going to be the pattern of administration which will eventually be approved and adopted for our department. It is perhaps difficult for you to see these charts from where you sit. I have a few extra copies of the charts which I will be glad to pass out as long as they last.

On top is a chart showing top level authorities and their relationship to the governor and the commissioner of administration. Below are charts showing the proposed organization of the several divisions of the department of conservation. The bureau of information which is shown on one of the charts is not legally a division in the same sense as the others, but it is hoped to have it made a division with the same standing as the others. We are convinced that this bureau will eventually be developed into one of the most important ones in our department. This is the unit that has charge of all of the educational work such as filming and showing of movies, lecturing before schools and civic groups, promoting a state-wide safety program and publishing the department's official magazine the "Conservation Volunteer". This graph (indicating) shows the manner in which the administration of the department ties up with the various divisions through the commissioner. It is divided into six blocks representing the divisions of administration, information, forestry, game and fish, lands and minerals, state parks, and waters arranged in order. The block off to one side of the commissioner's block shows the contact the department has with the attorney general through a legal bureau. While the salaries of the assistant attorney general

assigned to the department of conservation and his staff are paid out of the department of conservation funds, the assistant attorney general is a member of and under the direction and control of the attorney general. The charts which follow show how each division is organized and how they attach to their respeative blocks shown on chart 1. In other words these series of charts show the proposed plan for the reorganization of the department when consummated. For instanoe, the division of administration shown on Chart 1 divides lower levels into sections dealing with management research, management control, plant and equipment, accounting and personnel with the plant and equipment section further divided into units of building supervision and equipment supervision. This division of administration is the most interesting one and we believe will prove most important as on its successful functioning will depend much of the efficiency and control of the department's plant. This is one section which cannot be fully organized under present limitations in the law. We expect, however, to ask the next legislature for authority which does not now exist for completing this section.

The other divisions' charts which follow similarly show lines of authority to the lower levels and are self

explanatory. They show in graph form the break-up of the divisions into units to function in their own particular field. Time will not permit me to discuss each of the charts and the basic thoughts which prompted us to break them down to function in the manner shown. It is believed, however, that the charts themselves will reflect largely what we are trying to accomplish.

The object for which we are constantly striving is simplicity of operation. We in charge of administration and you too who are operating in this field have discovered that over the years it is easy for department machinery to become more and more involved as more and more duties are being delegated to it and as old laws are being amended and new ones passed and as time goes on, many provisions become obsolete and confusing, and details pile up to absorb time without adding to efficiency. The net result is that operation becomes complicated unless efforts are constantly made to reduce the control procedures and keep them in understandable form. Units within a department, if they are efficient, constantly strive to make progress but in so doing often may become unconsciously involved in procedures that produce an overburden of details. To avoid this requires a constant reappraisal of the rules and procedures to keep them in the simplest form. Progress inevitably

disturbs things that are and should not be criticized on this account. A unit that does not become involved in difficulties in operations somewhere along the line is not on the job.

Needless to say, these charts or any other set of organization charts do not mean a great deal unless the pattern they suggest embraces to the fullest extent the field in which the department operates and that qualified personnel and equipment are assigned to the work. While an organization outline is highly desirable, it must be made sufficiently flexible so that the experience of yearly and even monthly operations of the department can be reflected by changes as need for them develops, having constantly in mind the importance of adhering to and achieving long-time objectives. In the final analysis the success of any plan will of course depend on how successful the administrators are in picking men, each qualified for his job and inspire them to function in a manner and under conditions in which they are happy and enthusiastic in performing the work assigned them.

We in Minnesota do not think that centralization is necessarily a thing for which we should strive. We do have and need centralization of authority up to a certain point. We believe, however, that a plan under which each

unit is made responsible and is given credit for the success of its operations and with an appreciation of the importance of coordinating its work with other units, is a plan which stimulates individual initiative.

There is perhaps altogether too much "paper work" required of administrators in the upper levels. Some of this work in our department is being delegated but too much of it is still sent to the commissioner's and deputy commissioner's desks for approval and signature. The idea that the commissioner or deputy commissioner by signing or initialing a document thereby assumes responsibility for its contents or correctness, is of course absurd. In our department thousands of leases, orders, land sale certificates, personnel forms and other documents are executed annually. The commissioner has delegated authority to those in the lower levels with whom documents originate to approve many forms and documents in his own name or by those with delegated powers. More such delegations of authority can still be made and thus intercept much work before it reaches the commissioner.

We still have a little left of the cleavage between the divisions which originally were independent departments and which were made divisions in the department at the time it was created. Much of it has been erased

and we feel that if the reorganization we now contemplate goes into effect, this problem will no longer be a problem.

I have told my story in a very sketchy manner. It is not as complete as I would like to have given and could have told it if I would have had some more time in which to prepare for this discussion. Incidentally, and before I sit down, I wonder how many of you receive or have copies of the Royal Bank of Canada's monthly letters. If you have not you should by all means get them as they contain some of the most lucid and interesting discussions of different phases of business management that I have seen anywhere. In the July issue there is an article entitled "Make Work Better and Easier." It is written by a man who apparently understands work, what it is and what it should be. It is most interesting and holds ones attention from beginning to end. If you have not already read it, I suggest you get a copy as it is a splendid contribution to the subject of this discussion.

Before I left St. Paul, I had a brief discussion with Commissioner Wilson about my part on this program. Undoubtedly realizing that I had had little time to devote to my subject and my shortcomings as an extemporaneous speaker, he gave me a statement which I am going to read into this discussion. I think it is a splended summary

of what we are talking about.

" 'Streamlining' department organization means not only setting up an effective organization plan, but taking all steps that will help get work done speedily, economically, and with maximum results.

At least 90% of the working efficiency of any organization depends on able management and competent help.

'Where there is a will there is a way.' Good management and good help can almost always work out the quickest, cheapest and best methods of doing work, even though the organization plan may not be entirely scientific. On the other hand, the most scientific organization plan that can be devised will not get results without good management and good help.

However, in order to promote maximum efficiency, a sound organization plan is desirable. A common tendency that should be guarded against in framing such a plan is over-centralization. In the minds of some people centralization is synonomous with efficiency. This is a grave misconception. To a large extent successful progress depends upon the initiative and resourcefulness of subordinate units or individual members of any organization. Over-centralization may retard progress by stifling initiative and resourcefulness. In many cases decentral-

ization rather than centralization is needed to promote true efficiency.

The cardinal rule should be that unity of control should be limited to the actual need for coordination.

An effective supervision or check-up system is essential in any organization, especially in public service. Personnel should be made to feel that such a system is not set up for the purpose of snooping, but to assist all members of the organization in giving better service.

Basically every member of the organization should be his own inspector, continually seeking ways to improve the service, and making suggestions for improvements to his superiors whenever he has any good ideas. In addition there should be a complete inspection system, with established procedure for supervisory personnel at each level to check up on operations and projects at stated times and report successively to those higher up. This function should be assumed by the regular management personnel so far as means for providing special inspection service are lacking.

Above all it is important to inspire in all members of the organization from top to bottom a sense of pride in their work, loyalty to the organization, and

determination to work together as a team to accomplish their common objectives."

If you have any questions to ask I shall be glad to try to answer them if I can. (Applause)

MR. KIMBALL: What is your attitude concerning the advantages of a commissioner, over a commission?

MR. WILLARD: I was a commissioner of conservation for four years during the time the five man commission functioned in Minnesota. The set-up has its good points as well as its bad ones. A commission made up of men who know something about conservation and who are motivated by a desire to do their best for conservation can be of wonderful assistance to a commissioner in helping him to formulate policies. Such a commission acts as a buffer between the public and the commissioner and thus helps to share and level off criticism often directed at the commissioner. Such a commission, relieved of the burdens of administration, can do much to create and guide public opinion and help to build up and sustain favorable public relations. Members can develop into emmissaries of good will and by filling speaking engagements before sportsmen and conservation groups and other public gatherings, help promote conservation education and in these and other fields can be a real aid to the commissioner.

On the other hand a commission made up of men who have selfish interests to promote, who are politically ambitious on their own or someone else's behalf or who themselves are potential commissioners of conservation, are not only of little aid but are a source of constant worry to the commissioner. Such a commission can be a source of disunity instead of harmony and a "brake" on any conservation program of concern to the commissioner.

What about a single commissioner? He has a touch job when he is all alone to bear burdens and responsibilities but he knows for what he is responsible. He realizes that he must take the heat for his mistakes and for what people disapprove, but he also can claim credit for his successful accomplishments. He misses the advice and counsel of a high class commission when tough problems come up for decision but he is also relieved of worries about what a self seeking commission might have in the making. As already stated a commission composed of men who are really conservationists at heart and see and understand the job ahead and who take off their coats to do a job, is a precious addition to a department of conservation. The trouble is that a commission made of such men usually is short-lived because of turn-over in membership at changes in administrations and for other reasons, and as a result

does not stay in office long enough to be of much aid in long time planning.

MR. DAMBACH (Ohio): You spoke about latitude in the use of funds as being desirable? There was this thought, that there should be appropriated to the department just the one sum of money, but the commissioner has the authority to spend that for forests, parks, wildlife, or any other way he sees fit?

MR. WILLARD: That is not quite the case. The legislature has been unwilling thus far to go all the way and appropriate all funds to the commissioner to be allocated by him between the divisions and units. As already indicated, the commissioner of conservation may with the approval of the commissioner of administration, transfer funds from one division to another on a showing that there is need therefore.

MR. DAMBACH: You would not transfer funds appropriated for forestry purposes over to lands or water?

MR. WILLARD: Yes, under the limitations sited in my last answer. There is a close relationship between all of the divisions which makes their administration much of a common problem. It is clear, for instance, that preventing or suppressing forest fires has a vital roll to play in the promotion and protection of wildlife. Similarly

the successful administration of wildlife resources cannot be accomplished without recognizing their dependence upon both forests and water. This inter-relationship is such that it is not too difficult to secure approval of the transfer of funds from one division to another in cases of emergencies or otherwise when a showing is made that there is a genuine need of it. We are not ready, however, to ask the legislature to give the commissioner all of the money necessary to operate the entire department without some restrictions or indications of how it should be spent. That would be expecting too much.

MR. RUHL (Michigan): The tendency is more the other way?

MR. WILLARD: As already indicated, we are trying to live down a tradition which has come down from the days when the departments were independent units of government prior to the creation of the present department and when each was given an appropriation with which to operate independent of the others. Although this cleavage has not been entirely wiped out, progress has been made and if our present plan of reorganization is adopted, we believe more progress along these lines will be made in the future.

MR. DAMBACH (Ohio): We are just going through the throes of that in Ohio. You apparently went through

it some years ago. Do you generally get adequate support from the Legislature for meeting the operating costs of co-ordinating the activities of all these divisions, or is it a question of taking a little from here and a little from there, to take care of the administrative costs?

MR. WILLARD: It may be of interest to report on how the department of conservation in Minnesota is being financed. The department receives its support from state sources from two funds, the general revenue fund and the game and fish fund. The cost of administration of the entire department is divided 65% to the division of game and fish funds and 35% to the general revenue fund. This proportion is arrived at by comparing the total amount appropriated for the operations of the division of game and fish with the total made available for the operation of the entire department. For instance, for the fiscal year 1954, the total amount appropriated from all sources for the operation of the department is approximately seven and one-quarter million dollars. Of this amount approximately four and one-half million dollars represents funds made available to the division of game and fish or approximately 63% of the total. On this basis the legislature appropriated 65%

for the cost of administration against the division of game and fish and 35% against the general revenue fund.

This method of prorating costs of administration between game and fish revenues and the general revenue fund has met with very little opposition and is accepted by sportsmen and the public generally.

Some of the divisions are also financed in part by division of game and fish funds varying in percentages depending on how their operations reflect benefits to the promotion of wildlife. The bureau of information for instance, is financed in part by the division of game and fish funds on the theory that its educational program is of value to the promotion of wildlife as well as other resources. The legal bureau where perhaps 90% of its work is represented by litigation in law enforcement and in the drafting of orders and other functions which abound in that division is likewise financed mostly from game and fish funds. $50,000 annually has been appropriated from game and fish funds to the division of forestry to aid in fire prevention and suppression. These allotments from game and fish funds to other divisions are justified in each instance because of the promotion of wildlife by its operations.

MR. DAMBACH: Does that follow through in your public relations activities?

MR. WILLARD: The bureau of information which handles all the educational and public relation work was given 24% of its expenditures from the general revenue fund and 76% from the division of game and fish by the last legislature. This is due to an increase in the portion of costs of this bureau over that allotted at previous sessions, due to charging a greater portion of the costs of publishing the "Conservation Volunteer", the department's official magazine, to game and fish funds.

MR. KIMBALL (Colorado): That is fair enough.

MR. WILLARD: Generally speaking, we cannot complain too much of the treatment the department of conservation has received at the hands of the legislature in recent years. During the many years I have been in public service, and all of them in some phase of conservation, I have of course seen some bad sessions and some good ones. Swinging of the pendulum of public opinion from extreme to extreme is democracy in action. Some people think that the last legislature was a little bit rough but when it is recognized that it was a year of prunning of public expenditures not only in Minnesota but elsewhere in order to effect economies all the way

down the line wherever possible, I do not think we fared too badly. The director of the division of game and fish, if he were here, would probably take violent exception to this statement. The legislature did curtail the activities of this division by an unexplainable reduction of funds in face of a large accummulated surplus. The story of this is too long to recite here.

MR. KIMBALL: Why would the legislature consider an economic move to cut the funds which would be spent for only one purpose, anyway?

MR. WILLARD: I cannot answer that question here.

MR. RUHL: The same thing happened to us. They felt the boys working for the game and fish should be curtailed.

MR. KIMBALL: The same thing happened to us. There is still no logic to it. If the money goes into a reserve fund, and can be spent only for game and fish, you have more demand on your resources, and therefore you need more money to meet that demand. It looks silly to me.

MR. RUHL: We had dissipated our surpluses. They were taken for other purposes.

MR. KIMBALL: We did not, and they cannot use it for any other purpose, unless they change the law.

MR. WILLARD: Again I am sorry Mr. Wilson is not here, as he would have given you a much more interesting explanation of what takes place in conservation in Minnesota.

MR. STEEN (Missouri): Does the monthly letter of which you spoke have the details?

MR. WILLARD: This monthly letter is from the Royal Bank of Canada. This (indicating) is the July issue.

MR. STEEN: That is published in Montreal?

MR. WILLARD: At the head office, Montreal. I think they take subscriptions. We get it in the office. There are really some good articles in it.

THE PRESIDENT: Is there any further discussion on Mr. Willard's paper?

We are very much in favour of decentralization, insofar as it brings the administration much closer to the people. I look forward to the Utopia when we will have complete decentralization, and my office will be a social centre, and we will then look forward to pleasant trips throughout the country, to see how things are going.

MR. WILLARD: And see how the men who do the work are getting along?

THE PRESIDENT: Yes. These two papers have been very interesting, and there is a great deal of thought which can be given to them.

Unless there is any other subject that anyone would like to bring up, we will proceed with the Business Session. Every person is welcome to stay, and we invite you to stay, and participate in the discussions, as far as you wish.

However, voting will only be by respresentatives from each state -- one only.

The first item on the business agenda is "Old Business".

DOCTOR CLARK (Ontario): I have no record of any business which has not already been dealt with. There was nothing carried over from the meeting last year which will not be handled by the incoming executive.

THE PRESIDENT: Is there any new business? Have you anything further to say in regard to printing the transcript? We have a motion which has been moved, seconded and carried, that Ontario will print or mimeograph copies of all the last three years proceedings, including this year, in the amount of five copies for each state.

DOCTOR CLARKE (Ontario): Now, some people want more.

MR. KIMBALL (Colorado): I think, Mr. President, that perhaps we had better amend that, or have another motion to the effect that in the event the dues do not cover the printing of the 75 copies, the funds will be raised from amongst the states.

DOCTOR CLARKE (Ontario): That would require an amendment to the by-laws to be introduced at the next meeting.

MR. BODE (Missouri): May I muddy the waters a bit more? How much have we in the treasury now?

DOCTOR CLARKE (Ontario):

"Received from outgoing Treasurer
L. F. Faber $683.68

Dues from 15 member states and provinces 300.00

Total $983.68

EXPENDITURES:

| | | |
|---|---|---|
| Exchange on U.S. Funds | $16.48 | |
| Bank Charges | 3.50 | |
| Excise stamp on cheque (not required after Jan. 1/53) | .06 | |
| | $20.04 | $ 20.04 |
| BALANCE August 7th - | | $963.64 " |

MR. BODE (Missouri): My reason for asking that question was this; bringing ourselves up to date on the back proceedings is more of a special thing. I think the

proceedings of this meeting should be paid for regularly out of current funds now in the treasury.

As far as we are concerned, it would be so much easier to buy so many copies for so much per copy, rather than send a bill to the Association.

I was wondering why if we could not print the number we need at so much per copy, and each state pay for what they want, at so much per copy, so that the one who gets the most, pays the most, and then pay for the number of copies we want to print or mimeograph of these proceedings, out of the treasury.

I will make that as a motion.

MR. KIMBALL ( Colorado): I will second that motion.

THE PRESIDENT: You have heard the motion duly made and seconded. What is your pleasure?

(Motion agreed to)

DOCTOR CLARKE (Ontario); That will nullify the previous action.

THE PRESIDENT: Is there any further new business?

(No response) If not, we will proceed to the item "Reports of Committees". We have three Committees to report. What about the Auditing Committee? I will ask Mr. Dambach to present their report.

MR. DAMBACH (Ohio): We examined the books, and we can find no erasures, no false entries, and the books were in excellent order. I move that the report be accepted. Our examination went back to four years ago, to be explicit.

DOCTOR CLARKE (Ontario): So the next year's Auditor can take over from this list we have drawn up, and include the expenses incurred in this connection.

MR. BODE (Missouri): I second the motion that the report be adopted.

THE PRESIDENT: You have heard the motion, duly made and seconded. What is your pleasure?

(Motion agreed to)

THE PRESIDENT: Now, we will have the reports of the Committees. May we first have the report of the Nominating Committee, by Mr. Stiles.

MR. STILES (Iowa): Mr. President, the Nominating Committee wishes to place in nomination the following slate:

"For President, Mr. I. T. Bode, Missouri.

Vice-President, Mr. Thomas L. Kimball, Colorado.

Secretary-Treasurer, Mr. M. O. Steen, Missouri.

"For Board of Directors, we nominate the following:

| | |
|---|---|
| ILLINOIS | Glen Palmer |
| INDIANA | H. G. Hook |
| IOWA | Bruce F. Stiles |
| KANSAS | Dave Leahy |
| MANITOBA | G. W. Malaher |
| MICHIGAN | Dr. A. S. Hazzard |
| MINNESOTA | Chester S. Wilson |
| MISSOURI | I. T. Bode |
| NEBRASKA | Paul Gilbert |
| NORTH DAKOTA | H. R. Morgan |
| OHIO | Charles Dambach |
| ONTARIO | Dr. W. J. K. Harkness |
| SOUTH DAKOTA | N. E. McEachron |
| WISCONSIN | Ernest Swift " |

Mr. President, I move the adoption of the report.

MR. H. G. HOOK (Indiana): I second that motion.

THE PRESIDENT: Gentlemen, we have a motion to adopt the report of the Nominating Committee. What is your pleasure?

(Motion agreed to)

MR. STILES (Iowa): I move inasmuch as the slate has been accepted, that the Secretary be instructed to cast a unanimous vote for the slate.

MR. WILLARD (Minnesota): I second the motion.

THE PRESIDENT: You have heard the motion, duly made and seconded. What is your pleasure?

(Motion agreed to)

THE PRESIDENT: Now, the report from the Resolutions Committee, Mr. Lutz.

MR. LUTZ (Kansas): Mr. Chairman, the Resolutions Committee endeavoured to get in all of the resolutions. The members were a little slow in bringing them in, so if the wording of these resolutions is not just up to par, the matter can be brought up again.

RESOLUTION No. 1:

"BE IT RESOLVED That the Association of Midwest Fish and Game Commissioners expressed it's hearty appreciation to Hon. Welland S. Gemmell, Minister of Lands and Forests; Dr. W. J. K. Harkness, Dr. C. H. D. Clarke, and all other personnel of the Ontario Department of Lands and Forests, who have contributed to the outstanding success and enjoyment of this, the 20th Annual Meeting.

BE IT FURTHER RESOLVED That Dr. W. J. K. Harkness be respectfully requested to convey to all those having had a part in the planning and conduct of this meeting, the Association's expressions of gratitude and commendation."

I move the adoption of the Resolution.

MR. KIMBALL (Colorado): I second that motion.

THE PRESIDENT: You have heard the motion duly made and seconded. What is your pleasure?

(Motion agreed to)

MR. LUTZ (Kansas): RESOLUTION No. 2:

"WHEREAS the Bill to apportion the accumulated surplus of the PITTMAN-ROBERTSON fund for additional allotment to the States failed of passage at the last Congress; therefore be it

RESOLVED That the Association of Midwest Fish and Game Commissioners renew its approval of the plan and recommends that, if re-introduction of the Bill is necessary, such measure be re-introducted in such form as may be approved by the International Association of Fish, Game and Conservation Commissioners."

Mr. President, I move the adoption of this Resolution.

MR. BODE (Missouri): I second the motion.

MR. RUHL (Michigan): I may say, Mr. President, that this was brought up in the International, and Senator Robertson thought that they should have a strong

Republican sponsor for the Bill, and he selected Senator Ferguson of Michigan.

When they got together, they decided to "lay off" because excise taxes were very unpopular in Washington at that time.

The Bill was introduced through the effort of Mr. Carl Shoemaker, and I question if this is the proper time to act upon it.

MR. STEEN (Missouri): We took that into consideration.

MR. BODE (Missouri): Gentlemen, I understand this Resolution simply puts this body on the record as endorsing it, if the International decides it is the thing to do. I do not think there is any danger in that.

MR. LUTZ (Kansas): By the way, we tried to work it out. In other words, I think most of the states here approved the idea of the perpetuation of the fund. If the International approves it, we think it should be forwarded, so they will know they have our backing.

MR. RUHL (Michigan): They like to get the money. The question is how?

THE PRESIDENT: You have heard the motion, duly made and seconded. What is your pleasure?

(Motion agreed to)

MR. LUTZ: RESOLUTION No. 3:

"WHEREAS, drainage has been recognized as the number one destructive force which has, is, and will continue to destroy wildlife habitat for aquatic life as long as conservation agencies are unable to present substitute programs; therefore be it

RESOLVED That the Association of Midwest Fish and Game Commissioners initiate an aggressive program to arouse public interest against drainage of aquatic areas that are valuable in production of waterfowl and reccmmends that the member states accurately inventory the drained; the potentially drainable, and non-drainable wildlife producing resources of their states and seek to develop substitute programs which can save these areas for wildlife."

I move the adoption of Resolution No. 3.

MR. HOOK (Indiana): I second that motion.

THE PRESIDENT: You have heard the motion, duly made and seconded; what is your pleasure?

(Motion agreed to)

MR. LUTZ: RESOLUTION No. 4:

"WHEREAS various proposals by various agencies are being made to evaluate Federal conservation programs, it is apparent that such jobs should be undertaken by those groups that are most involved. Evaluation of such programs by unqualified groups may result in the curtailment of valuable programs, or the initiation of unwise programs; therefore be it

RESOLVED that the Association of Midwest Fish and Game Commissioners recommends that the International Association of Game, Fish and Conservation Commissioners initiate a study and evaluation of Federal conservation programs and either oppose or endorse such programs on the basis of their findings."

I move the adoption of Resolution No. 4.

MR. DAMBACH (Ohio): I will second it, so we can discuss it.

MR. KIMBALL (Colorado): What does that mean? Does that mean, for instance, if some conservation agency in the Federal government is curtailed in the way of expenditures, that we meddle into the business, to see where that curtailment should be, and to recommend it.

MR. LUTZ: This was brought in just before noon by Mr. Sprecher, and two other gentlemen. As I understand it, they felt there were some groups --

MR. STEEN (Missouri): It is evaluating the conservation program.

MR. KIMBALL (Colorado): What is the basis for this investigation? Is it for curtailment purposes?

MR. STEEN (Missouri): No, it places us on record as to what we think would be good measures in the interests of conservation.

MR. BURWELL (Ottawa, Ontario): I do not know what Mr. Kabat (Wisconsin), and the other gentlemen were speaking about, but the idea seemed to be a foregone conclusion that there would be some curtailment in the activities of the Federal government along conservation lines this coming year. It would be wise, if there was going to be that curtailment, for the Midwest Association to take it upon itself to scrutinize the program and assure itself that the cuts to be made in this activity are those which they feel are not going to interfere with the program too much. This, they think would not be a good thing. They consider this program to be most important.

MR. KIMBALL (Colorado): Would the Federal agency then have any say about that?

For instance, I assume that if this over-all program was to be curtailed, the Fish and Wildlife Commission would be consolidated?

MR. BURWELL (Ottawa, Ontario): I do not know; it might.

MR. STILES (Iowa): Would you read that part which named the agencies?

MR. LUTZ (reading):

"RESOLVED that the Association of Midwest Fish and Game Commissioners recommends that the International Association of Game, Fish and Conservation Commissioners initiate a study and evaluation of Federal conservation programs and either oppose or endorse such programs on the basis of their findings."

Would it not be better to name the Federal program which affects conservation? I am thinking of the P.M.A., which is not a conservation measure, but it very definitely affects conservation. They call it "The Protection Market Agency".

MR. BODE (Missouri): I am in favour. If you get into that, you are getting into the real problem, and you recommend the International study it themselves.

MR. STEEN (Missouri): If it is attainable, it should be done by the International, and not by the Midwest.

MR. STILES (Iowa): I think we might leave out the names of the agencies, and just say they are interested in our activities, and not really define them.

MR. BODE (Missouri): My thought is this. We should not tie the hands of the International in our recommendation, but leave it broad enough so that they can cover the field.

MR. DAMBACH (Ohio): It is not good strategy to handicap any group in their efforts to make any investigation. I see some advantage in the International making some investigation, and I hope these reasons will not imply the elimination of investigations, by any other group. Is that implied in that resolution?

MR. LUTZ: It is up to you, gentlemen.

THE PRESIDENT: Well, you have heard the motion duly made and seconded; what is your pleasure?

(Motion agreed to)

THE PRESIDENT: I have a proxy from Wisconsin which supports the Resolution.

In fact, I have a proxy from Mr. Sprecher covering several items. It is as follows:

"Dr. W. J. K. Harkness:

Please register the vote of Wisconsin in favor of Resolutions Nos. 1, 2 and 3, also 4, 5 and 6, submitted by the Resolutions Committee.

G. E. Sprecher

Also -

Please register the vote of Wisconsin in favor of the motion to publish the transactions of the three previous meetings and charge the states as necessary.

G. E. Sprecher

Also -

Please register the vote of Wisconsin in favor of the recommendations of the Nominations Committee to elect the following new officers:

President - I. T. Bode

Secretary-Treasurer - M. Steen

Vice-President - T. Kimball

Mr. Palmer - Director to replace Schwartz

Mr. Hook - Director to replace Cottingham.

(Signed) G. E. Sprecher."

MR. LUTZ: RESOLUTION NO. 5:

"WHEREAS there is reported to be sustained pressure and effort to open the Sacramento National Wildlife Refuge to public shooting, and

WHEREAS this area is the principal wintering ground of the Ross Goose, and the only inviolate sanctuary in the heart of the wintering ground, and the extent of sanctuary available for this species is so exceedingly limited, and

WHEREAS this species is difficult to identify from the abundant lesser Snow Goose, and is even now in grave danger of extermination; therefore be it

RESOLVED that the Midwest Association of Fish and Game Commissioners do oppose the proposed opening and call upon, and urge, the International Association of Game, Fish and Conservation Commissioners; The U. S. Fish and Wildlife Service, and all federal officials concerned to oppose and deny the proposed opening, and to maintain the Sacramento National Wildlife Refuge as an inviolate sanctuary."

Mr. President, I move the adoption of Resolution No. 5.

MR. KIMBALL (Colorado): Is that the Refuge, of 25 per cent?

MR. STILES (Iowa): That is the whole thing.

MR. KIMBALL (Colorado): That is important in the federal regulations.

THE PRESIDENT: Is there a seconder for the motion to adopt Resolution No. 5?

MR. BODE (Missouri): I will second that motion.

THE PRESIDENT: You have heard the motion duly made and seconded; what is your pleasure?

(Motion agreed to)

MR. LUTZ: Now, RESOLUTION NO. 6:

"WHEREAS the sportsmen and conservationists of the Nation have defeated the passage of HR-1023 in the last session of Congress, which was designed to give vested rights to only one user of the U.S. National Forests, and

WHEREAS, another compromise bill has been introduced into Congress, which would allow grazing permittees on the U.S. National Forests to appeal administrative decisions to a board of arbitration and to a U. S. Court, and

" WHEREAS such other users of National Forests lands such as timber, water, recreation, and wildlife, have no such appeal from administrative decisions; now therefore be it

RESOLVED that the Association of Midwest Fish and Game Commissioners go on record as opposing any change in the current administration of our national forests."

Mr. President, I move the adoption of Resolution No. 6.

MR. KIMBALL (Colorado): I second that motion.

THE PRESIDENT: You have heard the motion duly made and seconded; what is your pleasure?

(Motion agreed to.)

THE PRESIDENT: Thank you very much, Mr. Lutz.

Are there any further resolutions to be presented from the floor? (No response)

The next item on the agenda is the Election of Officers. I think perhaps we slipped up on that and this may be a little out of order.

The next item is the Adjournment.

MR. RUHL (Michigan): What about the time and place?

THE PRESIDENT: Could we have a report from Mr. Bode on the time and place?

MR. BODE (Missouri): Yes, sir, you may have a report. I do not know.

As far as the time goes, I suppose somewhere about the same time next year. That seems to be the best. We will have to do some jockeying. I would not want to have you come down to our State during State Fair week. I do not know of anything else which might interfere, and I presume that it might be about the same time of year.

As to the place; I would like to have some expressions of opinion on the question of "place" from the standpoint of getting the business done and securing a good attendance at the meeting.

We have nothing to offer that is as good as this. We could probably make arrangements to hold our meetings somewhere in our area, or to hold them some place like St. Louis, where there is something going on. If the group would like to express itself, we will conduct ourselves accordingly.

MR. RUHL (Michigan): How hot will it be, Mr. Bode?

MR. BODE (Missouri): If it is as hot as it was last summer, it will be very hot. We have no open areas where we can guarantee cool air or water. Even our lakes get hot down there.

The air-cooled hotel is about the only place where it will not be hot.

MR. DAMBACH (Ohio): Whatever the suggestion, it seems to me we gain a great deal by meeting in the facilities of any state, because it gives us the opportunity of seeing what they are doing. I admit there are communication difficulties, but I think the other outweighs them.

MR. KIMBALL (Colorado): I agree. I think an informal meeting, away from things, so to speak, such as wine, women and song, and all that rot, tends to have us accomplish more.

THE PRESIDENT: Is there any further expression of opinion?

MR. RUHL (Mishigan): I think we can leave it up to the Committee.

THE PRESIDENT: Gentlemen, this has been such a pleasant meeting, and in such pleasant company that I hate to bring it to a conclusion, but I guess there is nothing else to do, unless some of you gentlemen have

something more you would care to say. Is there anything further, Mr. Secretary?

DOCTOR CLARKE (Ontario): No, I do not think so.

THE PRESIDENT: I want to express my appreciation to our Secretary-Treasurer, who did all the work. I did not turn a hand, from the time I left the meeting in Iowa, until I had the privilege of acting as the Chairman of this meeting.

I enjoyed being the Chairman, because it did not matter how I conducted it, you fellows kept rolling along anyway, and that is the kind of meeting I enjoy.

I want to thank all of you who went to the extra trouble of finding your way here. We certainly enjoyed having you with us. I was a little sorry that we did not have a few more of our own men, such as our Regional and District Foresters, but as you gathered from Mr. Ward's remarks, we have an imminent fire season. The situation was not bad yesterday, but it may be tomorrow, and the boys are pretty well held down to their field offices during this time of the year.

As far as we are concerned, the meeting has been very enjoyable, and we have profited, as our Deputy

Minister has pointed out, tremendously by having you here in Dorset.

I thank you very much, gentlemen, for making the meeting a success, and a motion for adjournment is in order.

MR. BODE (Missouri): I so move, Mr. President.

MR. WILLARD (Minnesota): I second the motion.

THE PRESIDENT: You have heard the motion, duly made and seconded; what is your pleasure?

(Motion agreed to)

THE PRESIDENT: The meeting stands adjourned.

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---- Whereupon the further proceedings of this Conference adjourned sine die.

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