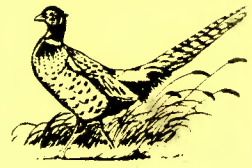


# PROCEEDINGS



## OF THE

32nd ANNUAL MEETING




WESTBURY HOTEL
July 27–29, 1965





# 1965 OFFICERS, DIRECTORS AND COMMITTEES OF THE ASSOCIATION OF MIDWEST FISH AND GAME COMMISSIONERS

President - C.H.D. Clarke, Chief, Fish and Wildlife Branch, Ontario.
Vice-President - George C. Moore, Director, Kansas Forestry, Fish & Game Commission
Secretary-Treasurer - D.N. Omand, Director, Recruitment and Research Branch, Ontario Department of Civil Service.

## DIRECTORS

COLORADO - Harry R. Woodward, Colorado Game, Fish and Parks Department, Denver.
ILLINOIS - William T. Lodge, Director, Illinois Dept. of Conservation, Springfield
INDIANA - Woodrow Fleming, Director, Division of Game, Indianapolis
IOWA - Everett B. Speaker, Director, Iowa State Conservation Commission, Des Moines
KANSAS - George C. Moore, Director, Kansas Forestry, Fish and Game Commission, Pratt
KENTUCKY - Minor E. Clark, Commissioner, Department of Fish and Wildlife Resources, Frankfort
MANITOBA - G.W. Malaher, Director, Game Branch, Department of Mines and Natural Resources, Winnipeg
B. Kooyman, Director, Fisheries Branch, Department of Mines and Natural Resources, Winnipeg
MICHIGAN - Ralph A. MacMullan, Director, Department of Conservation, Lansing.
MINNESOTA - Wayne H. Olson, Commissioner, Department of Conservation, St. Paul.
MISSOURI - William E. Towell, Director, State Conservation Commission, Jefferson City
NEBRASKA - Melvin O. Steen, Director, Game, Forestation and Park Commission, Lincoln
NORTH DAKOTA - Russell Stuart, Commissioner, State Game and Fish Department, Bismarck
OHIO - Fred E. Morr, Director, Department of Natural Resources, Columbus
ONTARIO - C.H.D. Clarke, Chief, Fish and Wildlife Branch, Department of Lands and Forests, Toronto
SOUTH DAKOTA - R.A. Hodgins, Director, Dept. of Game, Fish and Parks, Pierre.
WISCONSIN - L.P. Voigt, Director, Wisconsin Conservation Dept., Madison.

## COMMITTEE CHAIRMEN

PROGRAM: Thomas R. Evans (Illinois)
RESOLUTIONS: Wayne H. Olson (Minnesota)
AUDITING: Woodrow Fleming (Indiana)
NOMINATIONS: Woodrow Fleming (Indiana)
FEDERAL FARM PROGRAM: Walter J. Fillmore (South Dakota) (Resigned)
WETLANDS: Thomas R. Evans (Illinois)
FEDERAL-STATE RELATIONS: Woodrow Fleming (Indiana)
FEDERAL AID: H.D. Ruhl (Michigan)
LEGISLATION: Ralph A. MacMullan (Michigan)

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## NOTES CONCERNING THE 32nd ANNUAL MEETING

Held at the Westbury Hotel, Toronto, Ontario, July 27-29, 1965

The 32nd annual meeting of the Midwest Fish and Game Commissioners was highlighted by a number of social activities.

A field trip to Pioneer Village on the northern outskirts of Toronto was arranged for the afternoon of Tuesday, July 28. A box luncheon was provided and visitors were able to see a pioneer village of Upper Canada, featuring a Loyalist settlement and depicting the various phases of life at that time. Pioneer Village is a Metropolitan Toronto Conservation Authority project and their staff was in attendance.

That evening the Canadian National Sportsmen's Show sponsored a hospitality hour at the Westbury Hotel. We are grateful to their executive for this gesture. Afterwards the guests sought out a restaurant of their choice for dinner.

A bus tour of the city was arranged for Wednesday afternoon. Most of the ladies participated in this event. Notable among the sights that were seen were the new city hall, Casa Loma and the Bloor Street shopping district. Some of the ladies took advantage of their stay in Toronto to make a special trip to the Colonnade's 49 shops on Bloor Street.

The Association banquet was held on Wednesday evening and was preceded by a reception provided by the Ontario Department of Lands and Forests. Mr. F.A. MacDougall, the Deputy Minister of the Ontario Department of Lands and Forests, was the guest speaker at the banquet. During the course of the evening Mr. C.H. Howe of the Dow Rod and Gun Club, Toronto, presented some engraved silver mugs to the President and Vice President and to Mr. Stan Simons, a member of the Ontario Department of Lands and Forests staff who had been working with the Club on their hunter safety training program.

We are grateful to some of the business organizations in Toronto who provided us with a number of generous prizes. These were used as an incentive to delegates to appear on time for the meetings and also as door prizes on the occasion of the banquet. They provided some fun and were most acceptable gifts to the recipients.

The program of the meeting followed the agenda outlined by the Program Committe with only a few changes. These changes are indicated in the Report. A copy of the agenda appears on page iv.

It was indeed a pleasure for the Ontario Department to act as host to the Association of Midwest Fish and Game Commissioners on the occasion of its 32nd annual meeting, and we trust that our visitors had as good a time being here as we had having them here.

PROGRAM - 32nd ANNUAL MEETING OF THE ASSOCIATION OF MIDWEST FISH AND GAME COMMISSIONERS

MONDAY EVENING, JULY 26

7:00-9:30 p.m. Registration - Lobby, Westbury Hotel

(All Sessions in Maple Leaf Ballroom)

TUESDAY, JULY 27

Morning Session - General Chairman President C.H.D. Clarke

| | |
|---|---|
| 9:00 a.m. | Call to Order by Secretary-Treasurer Douglas N. Omand<br>Roll Call of Member States and Provinces<br>Announcements |
| 9:15 a.m. | Welcome - The Hon. A. Kelso Roberts, Minister of Lands & Forests |
| 9:30 a.m. | Report of Legislative Committee - Ralph MacMullan, Director, Michigan Department of Conservation. |
| 10:00 a.m. | Coffee Break |
| 10:30 a.m. | Federal Aid Committee Report - Harry Ruhl, Chief, Game Division, Michigan Department of Conservation.<br>Federal-State Relations Committee Report - Woodrow Fleming, Director, Division of Fish and Game, Department of Conservation, Indiana |
| 11:00 a.m. | Maintaining Water Quality - Clarence M. Tarzwell, Chief, Aquatic Biology Section, U.S. Department of Health, Education and Welfare |

Afternoon and Evening

| | |
|---|---|
| 11:30 a.m. | Field trip to Pioneer Village, under auspices of The Metropolitan Toronto and Region Conservation Authority.<br>Barbecue lunch at Pioneer Village |
| 4:30 p.m. | Return to Westbury Hotel |
| 6:00 p.m. | Hospitality Hour (Maple Leaf Ballroom)<br>Compliments of Canadian National Sportsmen's Show. |

WEDNESDAY, JULY 28

Morning Session - George C Moore, Director, Kansas Forestry, Fish & Game Commission Presiding

9:00 a.m. Federal Farm Program Committee Report -
Wetlands Committee Report - Thomas R. Evans, Supervisor, Division of Game Management, Illinois Department of Conservation

9:30 a.m. HOW DO WE GET RECREATION, FISH AND WILDLIFE VALUES INTO THE SMALL WATERSHED PROGRAM?
Thomas R. Evans - Moderator

1. An Analysis of Watershed Projects in the Midwest - Wade H. Hamor, Biologist, Soil Conservation Service, U.S. Dept. of Agriculture, Nebraska
2. The State Look at Watershed Projects - D. John O'Donnell, Co-ordinator, Watershed Programs, Wisconsin Dept. of Conservation
3. The Bureau Look at Watershed Projects - Warren H. Nord, Chief, Division of River Basin Studies, U.S. Bureau of Sport Fisheries and Wildlife, Minnesota.
4. Drainage and the Small Watershed Program - Russell Stuart, Commissioner, North Dakota Game & Fish Department

10:45 a.m. Coffee Break

11:00 a.m. The Economic Opportunity Act in Conservation and Recreation Programs - Patrick Healey, Director of Community Relations, Job Corps, Washington, D.C.

11:30 a.m. Commercial Fishery Research and Development Act - Russell T. Norris, Assistant to Director, U.S. Bureau of Commercial Fisheries, Fish and Wildlife Service, Washington, D.C.

12:00 noon Lunch

Afternoon Session - J.T. Shields, Director, Division of Game and Fish, Minnesota, Presiding

1:00 p.m. Panel Discussion - ZONING AND MANAGING STATE AND FEDERAL RESERVOIR LANDS AND WATERS - Larry R. Gale, Asst. Director, Missouri Conservation Commission - Moderator

1. Regulations and Boating - Kenneth E. Gruenewald, Boat Inspection Supervisor, Illinois Dept. of Conservation.
2. Maintenance of Littoral Zone for Fish and Game - Charles N. Lloyd, Superintendent, Division of Fish Management, Wisconsin Conservation Department
3. Management of Surrounding Lands - Laurence R. Jahn, Field Representative, Wildlife Management Institute, Horicon, Wisc.

3:00 p.m. Coffee Break - Movie - "Save Our Lakeshores"

3:15 p.m. Panel Discussion - MANAGING FISH POPULATIONS - J. Douglas Roseborough Supervisor, Fisheries Section, Fish and Wildlife Branch, Ontario Department of Lands and Forests - Moderator

1. Commercial-Sport Fishery Relationship - Jack Christie, Biologist Fisheries Research Station, Ontario.
2. Use of Selective Chemicals for Population and Plant Control - Robert E. Lennon, Chief, U.S. Bureau of Sport Fisheries and Wildlife, LaCrosse Fish Control Laboratory, Wisc.
3. Importance of Angling Regulations?
   - Clarence Clark, Asst. Supervisor, Fish Management Section, Division of Wildlife, Dept. of Natural Resources, Ohio
   - C.R. Burrows, Supervisor, Fisheries Research Unit, Minnesota Department of Conservation

4:45 p.m. - 5 p.m. Natural Areas Preservation in Conservation Programs - William T. Lodge, Director, Illinois Department of Conservation

6:00 p.m. Reception - Compliments of Ontario Department of Lands & Forests

7:00 p.m. Banquet - (Maple Leaf Ballroom) - Speaker: F.A. MacDougall, Deputy Minister of Ontario Dept. of Lands and Forests

THURSDAY, JULY 29

Morning Session - President C.H.D. Clarke, Chief, Fish and Wildlife Branch, Ontario Department of Lands and Forests.

9:00 a.m. The Status and Progress of Waterfowl Management in Canada - V.E.F. Solman, Canadian Wildlife Service, Dept of Northern Affairs and National Resources, Ottawa, Ontario.

9:30 a.m. Midwest Pheasant Council Report - Chairman
Midwest Technical Dove Committee Report - Chairman

10:00 a.m. - noon
Time and Place Committee Report
Resolutions Committee Report - Wayne H. Olson, Commissioner, Minnesota Department of Conservation
Auditing Committee Report - Woodrow Fleming
Old Business
New Business
Nominating Committee Report - Woodrow Fleming
Election
Unfinished Business
Adjournment

## REGISTRATION OF ATTENDANCE - DELEGATES AND GUESTS

32nd Annual Meeting

1. K. Acheson, Regional Director, Ontario Dept. of Lands and Forests, Sudbury.
2. P. Addison, Regional Forester, Ontario Dept. of Lands and Forests, Maple.
3. John B. Anderson, Commissioner, South Dakota Game, Fish and Parks Dept., Vale, S.D.
4. G.C. Armstrong, Supervisor, Game Fish and Hatcheries, Fisheries Section, Ontario Dept. of Lands and Forests, Maple.
5. David A. Arnold, Michigan Dept. of Conservation, 4555 Marlborough Rd., Okemos, Michigan.
6. * Mrs. D.A. Arnold, 4555 Marlborough Rd., Okemos, Michigan.
7. R.G. Bailey, Biologist, Ontario Dept. of Lands and Forests, North Bay.
8. Robert D. Balkovic, U.S. Bureau of Commercial Fisheries, Dept. of Interior, Washington, D.C.
9. Robert E. Beebe, Commissioner, Iowa State Conservation Commission, Sioux City, Iowa.
10. * Mrs. Robert E. Beebe, Sioux City, Iowa.
11. K.I. Beghin, Wisconsin Conservation Dept., P.O. Box 450, Madison, Wisconsin.
12. Wilbur Boldt, Deputy Commissioner, State Game and Fish Dept., Bismarck, N.D.
13. Dave Brooks, Biologist, Ontario Dept. of Lands and Forests, Aylmer, Ontario.
14. M.J. Brubacher, Fisheries Section, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, Maple, Ontario.
15. C.R. Burrows, Minnesota Conservation Dept., 2012 W. 68th St., Minneapolis, Minnesota.
16. * Mrs. C.R. Burrows, Minneapolis, Minnesota.
17. R.W. Burwell, U.S. Fish and Wildlife Service, 1006 W. Lake Street, Minneapolis, Minnesota.
18. Minor E. Clark, Commissioner, Dept. of Fish and Wildlife Resources, Frankfort, Ky.
19. William H. Charlton, Biologist, Ontario Dept. of Lands and Forests, Kenora, Ontario.
20. W.F. Cheshire, Biologist, Ontario Dept. of Lands and Forests, Tweed, Ontario.
21. W.J. Christie, Biologist, Ontario Dept. of Lands and Forests, Picton, Ontario.

* - Guest

22. C.H.D. Clarke, Chief, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, Toronto 5, Ontario.

23. *Mrs. C.H.D. Clarke, Agincourt, Ontario.

24, *Miss Mary Clarke, Agincourt, Ontario.

25. *Mr. R.G. Code, Surveyor-General, Surveys Branch, Ontario Dept. of Lands and Forests, Toronto 5.

26. Bill T. Crawford, Missouri Conservation Commission, 802 Edgewood, Columbia, Missouri.

27. *Mrs. Bill T. Crawford, Columbia, Missouri.

28. F.H. Davis, Bureau of Sport Fisheries and Wildlife, U.S. Dept. of the Interior, 1006 West Lake Street, Minneapolis, Minnesota.

29. J.B. Dawson, Biologist, Wildlife Section, Fish and Wildlife Branch, Ontario Department of Lands and Forests, Maple.

30. *Mrs. J.B. Dawson, Aurora, Ontario.

31. C.W. Douglas, Biologist, Ontario Dept. of Lands and Forests, Parry Sound.

32. Robert R. Elliott, Assistant Director, Management, Colorado Game, Fish and Parks Dept., 6060 North Broadway, Denver, Colorado.

33. Robert L. Evans, Colorado Game, Fish and Parks Dept., 708 Niblic Drive, Grand Junction, Colorado.

34. Thomas R. Evans, Supervisor, Division of Game Management, Illinois Dept. of Conservation, 25 Horseshoe Drive, Springfield, Illinois 62702.

35. Fred G. Evenden, The Wildlife Society, Suite S-176, 3900 Wisconsin Avenue, Washington, D.C. 20016.

36. Alex N. Fedoruk, Fisheries Branch, Department of Mines and Natural Resources, 433 Queenston Street, Winnipeg, Manitoba.

37. *G.H. Ferguson, Solicitor, Law Branch, Ontario Dept. of Lands and Forests, Toronto.

38. Louis Findeis, Commissioner, Game, Forestation and Park Commission, Pawnee City, Nebraska.

39. *Mrs. Louis Findeis, Pawnee City, Nebraska.

40. Woodrow Fleming, Director, Division of Fish and Game, Dept. of Conservation, 605 State Office Building, Indianapolis, Indiana.

41. Martin L. Gable, Commissioner, Game, Forestation and Park Commission, Soottsbluff, Nebraska.

42. *Mrs. Martin L. Gable, Scottebluff, Nebraska.

* - Guest

43. Larry R. Gale, Assistant Director, State Conservation Commission, 1204 Winston Drive, Jefferson City, Missouri.

44. Dave J. Gawley, Ontario Dept. of Lands and Forests, Gogama, Ontario.

45. A. Gene Gazlay, Michigan Dept. of Conservation, 1604 Peggy Place, Lansing, Michigan 48910.

46. Edwin H. Glaser, Missouri Conservation Commission, 521 Stadium, Jefferson City.

47. M. Gontier, Operations Branch, Ontario Dept. of Lands and Forests, Toronto.

48. *Duncan Grant, Gooderham and Worts Co., 15 Toronto St., Toronto.

49. Kenneth E. Gruenewald, Illinois Dept. of Conservation, 30 Sullivan Drive, Decatur, Illinois.

50. C.R. Gutermuth, Wildlife Management Institute, 709 Wire Bldg., Washington, D.C.

51. George A. Hamilton, District Forester, Ontario Dept. of Lands and Forests, Sudbury.

52. Wade H. Hamor, Soil Conservation Service, U.S. Dept. of Agriculture, 134 South 12th Street, Lincoln, Nebraska.

53. Charles D. Harris, Deputy Director of Staff, Department of Conservation, 3415 Aragon Drive, Lansing, Michigan.

54. Patrick Healy, Director of Community Relations, Job Corps, Washington, D.C.

55. Gerald Hendry, Biologist, Ontario Dept. of Lands and Forests, 19 Byng Ave., Kapuskasing, Ontario.

56. W.R. Hendricks, Commissioner, Colorado Game, Fish and Parks Dept., 6060 North Broadway, Denver, 16, Colorado.

57. R.A. Hodgins, Assistant Director, South Dakota Dept. of Game, Fish and Parks, Pierre, South Dakota.

58. Ancil D. Holloway, Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service, 2509 Irving, Minneapolis, Minnesota 55405.

59. *C.H. Howe, Dow Rod and Gun Club, 276 Simcoe Street, Toronto.

60. K.K. Irizawa, Supervisor, Game Management, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, Toronto.

61.* Mrs. K.K. Irizawa, Don Mills, Ontario.

62. Larry R. Jahn, Wildlife Management Institute, 129 Juneau Street, Horicon, Wisc.

* - Guest

63. David H. Jenkins, Research and Development, Michigan Department of Conservation, Lansing, Michigan.

64. *Mrs. D.H. Jenkins, Lansing, Michigan.

65. *Miss Jenkins, Lansing, Michigan.

66. D.R. Johnston, Biologist, Ontario Department of Lands and Forests, Hespeler, Ontario.

67. Bud Kempton, Nebraska Game, Forestation and Parks Commission, Ravenna, Nebraska

68. *Mrs. Bud Kempton, Ravenna, Nebraska.

69. Frank H. King, Wisconsin Conservation Dept., Madison, Wisconsin.

70. Robert E. Lennon, Chief, LaCrosse Fish Control Laboratory, U.S. Fish and Wildlife Service, LaCrosse, Wisconsin.

71. C.A. Lewis, Biologist, Ontario Dept. of Lands and Forests, Sault Ste. Marie.

72. Charles N. Lloyd, Wisconsin Conservation Department, 470 Orchard Drive, Madison, Wisconsin.

73. J.W. Lockwood, Distriot Forester, Ontario Dept. of Lands and Forests, Aylmer.

74. William T. Lodge, Director, Dept. of Conservation, 102 State Office Bldg., Springfield, Illinois.

75. *Mrs. Wm. T. Lodge, Springfield, Illinois.

76. A.G. Loughrey, Canadian Wildlife Service, Dept. of Northern Affairs and National Resources, Ottawa, Ontario.

77. F.A. MacDougall, Deputy Minister, Dept. of Lands and Forests, Toronto, Ontario.

78. Ralph A. MacMullan, Director, Michigan Conservation Dept., 2205 Hopkins Ave., Lansing, Michigan.

79. *Mrs. R.A. MacMullan, Lansing, Michigan.

80. *Miss MacMullan, Lansing, Michigan.

81. M.A. Marston, Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service, 6802, Weaver Avenue, McLean, Virginia.

82. George C. Moore, Director, Kansas Forestry,Fish and and Game Commission, Box F, Pratt, Kansas.

83. Robert L. Morgan, North Dakota Game and Fish Dept., 1840 Griffin St., Bismarck, N.D.

84. W.N. (Nick) Neff, Commissioner, Nebraska Game, Forestation and Parks Commission, Fremont, Nebraska.

85. *Mrs. N. Neff, Fremont, Nebraska.

* - Guest

86. Warren H. Nord, Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service, 1006 W. Lake Street, Minneapolis, Minnesota.

87. *Mrs. Warren H. Nord, Minneapolis, Minnesota.

88. *Miss Nord, Minneapolis, Minnesota.

89. John O'Donnell, Wisoonsin Conservation Dept., 415 Virginia Terrace, Madison, Wisoonsin 53705.

90. *Mrs. John O'Donnell, 415 Virginia Terraoe, Madison, Wisoonsin 53705.

91. *Miss Susan O'Donnell, 415 Virginia Terraoe, Madison, Wisoonsin 53705.

92. Hayden W. Olds, Bureau of Outdoor Reoreation, U.S. Dept. of the Interior, 2119 Yorktown Drive, Ann Arbor, Miohigan.

93. *Mrs. Hayden W. Olds, Ann Arbor, Miohigan.

94. Wayne H. Olson, Commissioner, Minnesota Conservation Dept., Centennial Bldg., St. Paul, Minnesota.

95. D.N. Omand, Direotor, Reoruitment and Researoh Branoh, Dept. of Civil Servioe, Toronto, Ontario.

96. *Mrs. D.N. Omand, Don Mills, Ontario.

97. N.D. Patriok, Biologist, Ontario Dept. of Lands and Forests, Kemptville, Ontario.

98. Daniel A. Poole, Wildlife Management Institute, 709 Wire Building, Washington, D.C.

99.* Mrs. D.A. Poole, Washington, D.C.

100. *Miss Kathleen Poole, Washington, D.C.

101. Ernest D. Premetz, Bureau of Commeroial Fisheries, U.S. Fish and Wildlife Servioe, 5 Researoh Drive, Ann Arbor, Miohigan.

102. Odeen (Skee) Rasmussen, Commissioner, South Dakota Dept. of Game, Fish and Parks, Belvidere, S.D.

103. P.O. Rhynas, Chief, Operations Branoh, Ontario Dept. of Lands and Forests, Toronto, Ontario.

104. *J.K. Reynolds, Exeoutive Offioer, Prime Minister's Office, Ontario Government, Toronto, Ontario.

105. *Mrs. J.K. Reynolds, Agincourt, Ontario.

106. Mr. C.V. Rioh, Operations Branoh, Ontario Dept. of Lands and Forests, Toronto.

107. *Hon. A.K. Roberts, Minister, Ontario Dept. of Lands and Forests, Toronto.

108. Earl T. Rose, Chief of Fish and Game, Iowa State Conservation Commission, E. 7th & Court Ave., Des Moines 9, Iowa.

* - Guest.

109. J.D. Roseborough, Supervisor, Fisheries Section, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, Toronto.

110. *Mrs. J.D. Roseborough, Toronto, Ontario.

111. H.D. Ruhl, Chief of Game, Dept. of Conservation, Mason Bldg., Lansing, Michigan.

112. *Mrs. Harry Ruhl, Lansing, Michigan.

113. Edw. Sohneberger, Research and Planning, Wisconsin Conservation Dept., Madison, Wisconsin.

114. Walter E. Scott, Wisconsin Conservation Dept., 1721 Hickory Drive, Madison, Wisconsin 53701.

115. James T. (Ted) Shields, Director, Division of Game and Fish, Dept. of Conservation, 3124 - 115th Ave. N.W., Coon Rapids, Minnesota.

116. Vern E. Sievert, Missouri Conservation Commission, Jefferson City, Missouri.

117. Victor E.F. Solman, Canadian Wildlife Service, Dept. of Northern Affairs and National Resources, Ottawa, Ontario.

118. E.B. Speaker, Iowa State Conservation Commission, 1800 - 47th Street, Des Moines, Iowa.

119. M.O. Steen, Director, Nebraska Game, Forestation and Park Commission, State House, Lincoln, Nebraska.

120. *Mrs. M.O. Steen, Lincoln, Nebraska.

121. A.H. Story, Commissioner, Nebraska Game, Forestation and Park Commission, Plainview, Nebraska.

122. *Mrs. A.H. Story, Plainview, Nebraska.

123. R. Rex Stotts, Commissioner, Nebraska Game, Forestation and Park Commission, Cody, Nebraska.

124. *Mrs. R. Rex Stotts, Cody, Nebraska.

125. Russell W. Stuart, Commissioner, State Game and Fish Dept., Bismarck, N.D.

126. *Mrs. Russell W. Stuart, Bismarck, N.D.

127. H.A. Svenson, U.S. Forest Service, Dept. of Agriculture, 710 North 6th, Milwaukee, Wisconsin.

128. Percy W. Swanson, Fish and Wildlife Supervisor, Ontario Dept. of Lands and Forests, Lindsay, Ontario.

129. Clarence M. Tarzwell, National Marine Water Quality Laboratory, University of Rhode Island, U.S. Public Health Service, Kingston, Rhode Island.

* - Guest.

130. C.W. Threinen, Wisconsin Conservation Dept., 2121 Gateway Street, Middleton, Wisconsin.

131. * Mrs. C.W. Threinen, Middleton, Wisconsin (and four children).

132. Harold V. Terrill, Missouri Conservation Commission, Conservation Commission Office, Jefferson City, Missouri.

133. Wayne H. Tody, Michigan Department of Conservation, Lansing, Michigan.

134. William E. Towell, Director, State Conservation Commission, Farm Bureau Bldg., Jefferson City, Missouri.

135. F.A. Walden, Supervisor, Wildlife Section, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, Toronto, Ontario.

136. * Mrs. F.A. Walden, Aurora, Ontario.

137. D.A. Waldriff, Fish and Wildlife Supervisor, Ontario Dept. of Lands and Forests, Swastika, Ontario.

138. Gaylord A. Walker, Michigan Conservation Dept., 2005 Lagoon Drive, Okemos, Mich.

139. * Mrs. Gaylord A. Walker, Okemos, Michigan.

140. Alan Wainio, Biologist, Ontario Dept. of Lands and Forests, Maple.

141. W.H.R. Werner, Supervisor, Commercial Fisheries, Fisheries Section, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, Maple, Ontario.

142. J.C. Weir, Biologist, Fisheries Section, Fish and Wildlife Branch, Maple.

143. * J.M. Whalen, Chief, Forest Protection, Ont. Dept. of Lands and Forests, Toronto.

144. Mike Zack, Commissioner, Iowa Conservation Commission, 852 - 6th St. S.E., Mason City, Iowa.

* - Guest.

The above list comprises 102 registered delegates and 42 guests.

## LANDS AND FORESTS STAFF IN ATTENDANCE

145. Ted Ackert, Ontario Dept. of Lands and Forests, Moffat, Ontario.

146. Miss Carol Burn, Ontario Dept. of Lands and Forests, Toronto, Ontario.

147. Mrs. Margaret Damp, Ontario Dept. of Lands and Forests, Toronto, Ontario.

148. Wm. Hutchison, Ontario Dept. of Lands and Forests, Tweed, Ontario.

149. Miss Agnes Klassen, Ontario Dept. of Lands and Forests, Toronto, Ontario.

150. Mr. George Love, Ontario Dept. of Lands and Forests, Maple, Ontario.

151. Miss Beatrice Shawanda, Ont. Dept. of Lands and Forests, Toronto, Ontario.

152. Stan Simons, Ontario Dept. of Lands and Forests, Toronto, Ontario.

153. Harry Tuvi, Ontario Dept. of Lands and Forests, Toronto, Ontario.

154. A.B. Young, Ontario Dept. of Lands and Forests, Toronto, Ontario.

## Summary

### Number from Each State and Province

| State or Province | Number |
|---|---|
| Colorado | 3 |
| District of Columbia | 7 |
| Illinois | 4 |
| Indiana | 1 |
| Iowa | 5 |
| Kansas | 1 |
| Kentucky | 1 |
| Manitoba | 1 |
| Michigan | 18 |
| Minnesota | 10 |
| Missouri | 7 |
| Nebraska | 15 |
| North Dakota | 4 |
| Ontario | 59 |
| South Dakota | 3 |
| Rhode Island | 1 |
| Virginia | 1 |
| Wisconsin | 13 |

PROCEEDINGS OF

32nd ANNUAL MEETING

ASSOCIAION OF MIDWEST FISH AND GAME COMMISSIONERS

Westbury Hotel, Toronto

July 27-29, 1965

Tuesday Morning Session, July 27

PRESIDENT CLARKE: I declare this 32nd meeting of the Midwest Fish and Game Commissioners open. We will now call upon the Secretary-Treasurer, Doug Omand, to call the roll of member states and provinces.

SECRETARY OMAND: I will call out the name of the state or province, and if one individual representing that state or province will identify himself by name this will constitute our roll call.

COLORADO - Robert R. Elliott, Assistant Director, Management, Colorado Game, Fish and Parks Dept.
ILLINOIS - William T. Lodge, Director, Illinois Dept. of Conservation.
INDIANA - Woodrow Fleming, Director, Indiana Dept. of Conservation.
IOWA - Everett Speaker, Director, Iowa State Conservation Commission.
KANSAS - George Moore, Director, Kansas Forestry, Fish and Game Commission.
KENTUCKY - Minor Clark, Commissioner, Department of Fish and Wildlife Resources.
MANITOBA - Alex Federok, Fisheries Branch, Department of Mines and Natural Resources.
MICHIGAN - Ralph A. MacMullan, Director, Department of Conservation.
MINNESOTA - Wayne H. Olson, Commissioner, Department of Conservation.
MISSOURI - William Towell, Director, State Conservation Commission.
NEBRASKA - Melvin O. Steen, Director, Nebraska Game, Forestation and Park Commission.
NORTH DAKOTA - Russell W. Stuart, Commissioner, State Game and Fish Dept.
OHIO - (George Moore advised that Frank Morr had called him on the telephone to express regrets of non-representation of Ohio).
ONTARIO - C.H.D. Clarke, Chief, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests.
SOUTH DAKOTA - R.A. Hodgins, Assistant Director, South Dakota Dept. of Game, Fish and Parks.
WISCONSIN - Edw. Schneberger, Acting Chief, Research and Planning, Wisconsin Conservation Department.

Thank you, gentlemen, that completes the roll call. I should mention that there are representatives of the U.S. Fish and Wildlife Service here as well as representatives of the Canadian Wildlife Service, the two federal jurisdictions. Thank you.

PRESIDENT CLARKE: Ladies and gentlemen. It gives me the very greatest pleasure to call on the Minister of Lands and Forests, the Honourable A. Kelso Roberts, to welcome you to Ontario.

HON. A.K. ROBERTS (Minister of Lands and Forests): Mr. Chairman, and ladies and gentlemen. Dr. Clarke has just got back from some months in Africa. I was just a little uncertain when he started his field work that he would find

the situation at home here as he left it. This is the first time I have had an opportunity of speaking to him since he got back but I can assure him that he's still as he was before and I am still here as I was before. It is a pleasure to greet you today from these various states and our own province of Ontario. I noted that in this very fine gathering here we in our own province of Ontario are pretty well outnumbered by representatives from south of the border, and we do appreciate the fact that you are meeting here in Ontario on this occasion. I understand that this is one of some four regional groups which combine working in their own regions to form an international body of fish and game commissioners and technicians who work in that field. I regret that I am not going to be able to be with you at your formal banquet later in the week, but you will be interested to know that I will be at that time in northwestern Ontario, and I think while you are banqueting here we may be having an outdoor fish fry in the centre of Quetico Park, where we will be meeting with representatives of the President's Superior Forest group and the Quetico group dealing particularly with Minnesota's northern boundary and Ontario's southern boundary waters and game preserves and park areas, so that we will both be bent on somewhat similar conservation subjects, although separated by some considerable distance. I would like to say to you gentlemen who are here from the United States, and I guess you know a good deal about our province, but it is is a very large province - 415,000 square miles - a great deal of that, eighty percent of it, lies north of our southern Ontario, but the northern part contains by far the greatest volume - northwestern Ontario almost half. Our population, of course, is concentrated in the south but just a few weeks ago under the auspices of the Department of Lands and Forests a northern air tour was undertaken for members of the Legislature and certain others, including the Chairman of the Ontario Water Resources Commission, and we met our plane - our Lands and Forests plane - of which we have some 44, small single-engine planes, all of them except one, but very capable planes, very well-piloted, used chiefly for forest protection work and for work within the Department and with other departments of government here. It is quite a flight, and on this occasion the operation was to transport some 70-odd people from the Lakehead in a semi-circle around the northern reaches of our province, settling down some 15 times with 12 aircraft, and meeting with Indian chiefs and at Indian settlements and at remote mining and other areas, including some of our most remote lands and forest locations. All of this, of course, is in keeping with the Department's work and is in keeping with the work that you gentlemen are doing and are gathered here, and I thought it would interest you to know that that cirouit was made in a week covering about 3,000 miles by air, and fortunately without any mishap it went off entirely as planned - even including planning for weather, which is no easy thing to do when you are dealing with single-engine planes without the modern method of radar, that you get in our trans-Atlantic and so forth airways. We are still bush-flying but we proved that we could do it. The pilots proved that they could do it with the best of the people in that respect. I understand too that the Midwest Pheasant Council, which is a branch of this organization met earlier this year in south-western Ontario and visited our famous Pelee Island area which at certain times of the year is infiltrated by many hundreds of hunters for the pheasant season.

I will watch your work with interest and I hope that Dr. Clarke and Mr. Omand will see that I am briefed on what you think so that I will have the benefit of your latest views. It is a great pleasure for me to be here this morning for a few minutes to welcome you to Ontario, and I am sure that

you will receive here at the hands of the members of Lands and Forests and of the Federal group who always cooperate, the type of hospitality which you from the States are very much entitled to because it is reciprocal. Thank you very much.

PRESIDENT CLARKE: Thank you very much,Mr. Roberts, and before you get away and in anticipation of your question, because the Minister is quite right when he said that I hadn't had a chance to talk to him (still haven't), and I hadn't seen him until a few minutes ago since coming back from Africa, I can say to him and to any of you, because I am getting the same question from all sides, I had a very fine time there and I would like to assure him also that we will carry on this meeting in the wonderful tradition of informality which the Department of Lands and Forests has always managed to maintain for such gatherings. We are very delighted to have you. We'll see you again. (To Mr. Roberts).

Before going on with the program, there are some things that I would like to say. We do have an informal tradition here. We don't go in for head tables and big shows. We, however, will try to maintain all the amenities that have been maintained in previous meetings. The last one we had in Ontario, as some of you will remember - most of you maybe will - was at the Dorset Ranger School. We can't be quite as informal here as we were there. We were willing to organize something of the same sort but as I recall the membership was against it. In looking around, I see that it is approximately the same membership as in 1953, but all of them are just that much older, shall we say. Anyone is welcome to intervene at any stage in the program, but in so doing, would you please speak loudly and clearly and especially give your name and state for the benefit of the record. There was a day when I myself knew everybody at these meetings, but since I passed tha age of 50 some time ago and my eyesight isn't what it used to be, I find that I am no longer able to say that. I can't read these things at a glance and the consequence of that is that, although I should know all of you by name immediately, if you don't announce yourselves, no matter who you are, there is just an odd chance that your statements may be anonymous in the record. Another thing, we have this morning a comparatively short session. We have some very important committee reports and one very important paper, and after that we are going to have a break and go out and visit an area that is maintained by what's known here as a conservation authority - I hope perhaps that they will be able to explain just exactly what that is - and we will have lunch out there. In order to get started, we will try to keep things moving here, and especially I would ask you not to overdo the coffee break. In so far as the sessions that are to follow are concerned, I have been told that the origin of the word tip came from a little dish that was placed in some pub in England many long years ago, and it had on it "to insure promptness", and the initials later became the familiar word that we use. Well, now, in order to insure promptness at sessions later on, a number of dealers and manufacturers, especially of sporting goods around Toronto, have provided us with quite a substantial number of excellent door prizes. Tickets will be handed out at the door and the handout will cease immediately on the minute when the meeting is supposed to come to order. The latecomers will get no tickets. Those who are in their places will be in on the draw. We hope that this will help.

Now, also, we have cars and drivers here for anyone who wants to go any place, and any who have anything they want to find out or any help that they need in any respect whatsoever, any of the uniformed people will be able to help

them, but those who are on the desk or on official duty especially will be able to help. There is a list out on the desk of a substantial number of possible tours which can be arranged with the assistance of drivers who are here and I would like to add to this also that if anyone wants to go out to our research station and wildlife management office - the actual working center - which is at a place called Maple, about 23 or 24 miles away from here, somebody will be there during the working hours available to answer questions and show people around, and transportation can be arranged. I am asked also to announce that there is a bus tour which will come up. You can find out all about it at the desk. This is for tomorrow afternoon and any of those, especially the ladies, who wish to take this tour should leave their names at the desk before noon today.

I may say I am very, very grateful to my associates - as everyone now knows I have been away most of the time in which I should have officially been acting as President, but for a Canadian president in this organization there really isn't anything very onerous because any politicking that has to be done in the United States is done by the Vice-President, and I just conferred with him and found that he didn't have too rough a ride, but there were a couple of important things that came up which will undoubtedly be announced. There have been some very active committees - some excellent committees - and I would name first Tom Evans in the Program Committee. I think they have done very well. We shall now hear the report of the Legislative Committee - Ralph MacMullan, Director of the Michigan Department of Conservation. Mac.

DR. MACMULLAN: Thank you, Doug. I think we missed you almost as much as Mr. Roberts, and this is the first time I have been Chairman of a Committee in effect without a President of the organization or association. But in some ways, you know, that makes it a little easier to operate, too. Because nobody is quite sure what we did this past year. First off, I have a committee report which is being passed out. It lists 17 items, I believe, which we think are of importance and in the interest of time and to earn the tip that we will get for promptness I would like not to read this report but would ask you to follow through with me, with this in mind at the end of the report. When we are all done I would like to make a motion that this report be accepted, but before I do that I would entertain new suggestions from anyone in the audience who takes exception to the committee's recommendation and ask that this particular item might be pulled out and voted on separately. I want to introduce Gene Gazlay in the back of the room whom I think most of you know. He has been our federal aid co-ordinator, he's just recently been promoted to administrative aide to me and he is chiefly responsible for this report, but I would like to point out also for your interest that one of his prime duties is to keep track of federal legislation for us as well as state legislation, and he's done an excellent job and established excellent contacts with Washington. If you ever have any use for him, please don't hesitate to ask. Please don't hesitate to call him and ask for any help he might be able to give you. Do we have enough reports, Gene, to go all the way around? If we do, let's go through them hurriedly. A couple of them need a little discussion. I think the first is one of them. (The Legislative Committee Report appears as Appendix I in these Proceedings)*.

1. Federal Firearms Act. Briefly, so that you don't have to read all that stuff, here's what we did. During the year we did a survey and by telephone

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poll we prepared testimony in Michigan testifying against these more or less undue restrictions. Later, this testimony was combined with testimony by Glassen from the International. In effect we represented, also by telephone poll, this Association in Washington in registering our opposition. Dave Arnold went down to Washington representing me and just last week came back. We have in here, you will notice on page 2, our recommendation which was that the proposed amendments of the Dodd Bill would make it more acceptable. I would like to have Dave spend about two minutes explaining a change in philosophy that we've made on that. We think that perhaps this is not right now and I would like the indulgence of my committee, all of whom I haven't talked to, to perhaps change this language a little bit. Dave could you spend a minute or two on that? Dave is a great turkey hunter. He comes from Pennsylvania.

MR. ARNOLD (Michigan Department of Conservation): Well, we are going to have a turkey season. Wish you would all apply.

In spite of the fact that the recommendation states that this legislation is slightly more palatable with the amendments, I am firmly convinced that this Association should probably oppose legislation of the type of the Dodd Bill, which is S1592, and the companion legislation in the House, on the basis of its philosophy. The basic philosophy behind the Dodd Bill is that we will make guns unavailable to everyone and then we will give them back to the people who we have determined are fit to have them. I think this philosophy should be opposed right down the line, and perhaps we should seek legislation of the type of the King-Hickenlooper Bill, which essentially is that guns will continue to be made available and that those who are proven unfit will not be allowed to have them - mentally incompetent, juveniles, felons and so forth. I think there are two basic philosophies. The Dodd Bill assumes everyone is guilty until he has been proven innocent. The King-Hickinlooper type of proposal assumes that everyone is innocent until proven guilty and I feel that this Association should accept the latter type of philosophy.

DR. MacMULLAN: We'll change the language then and our recommendation will be, "Oppose the Dodd Bill and recommend endorsement of the King-Hickenlooper Bill".

2. Rare and Endangered Species Bill. I think everyone is more or less agreed to this aspect of the question about the prerogative of the federal government to rule on indigenous species within a State. Some amelioration has been suggested in the form of resolutions whereby the state would have and should have equal power over a species which is completely resident within the state, and I understand that Representative Dingell, who is a great conservationist, feels strongly about this but has softened a little bit.

3. Food and Agricultural Act of 1965, which we think is in effect good. We strongly support it. Frank King from Wisconsin mentioned to me this morning that he acts as representing another committee and this is about the only item they had of importance, and I believe he has some later amendments than we have here. Bud, would you like to say a word on that?

MR. KING (Wisconsin Conservation Dept.): Thank you, Mac. This proposal here actually is a major part of any Farm Program Committee Report that may be given later. It is pertinent at this time. Actually these two amendments

are proposed by Wisconsin Senator Nelson, primarily as a result of some suggestions of this past Farm Program Committee and the Midwest Pheasant Council, which this group sponsors, and the Wildlife Management Institute has very strongly supported it, and worked with the legislatures also.

Briefly, the two amendments here, and Senator Nelson's report here, within the last 10 days, says that there is going to be an amendment to No. S 399, introduced in the Senate on July 9, which was last Friday. The second one has no number on it.

This first one,briefly, could be labelled a wildlife incentive payment. The proposal here is that in addition to the other payments for land retirement and opening land for public hunting the Act allot funds to be given to the state agencies for administration. This money would then be used to pay farmers for carrying out certain land wildlife management practices. Each State having different requirements would develop their own practices for their own region and they would supervise this and screen the farmers who would be eligible and carry it out. This would follow things we have been recommending for many years. It states here that we should not finance reversion retirement of private land without insisting on development of wildlife habitat and avoidance of practices that are detrimental to birds, animals and fish. He made quite a report to the committee showing that the retirement of farm land is not enough. We went through that experience with the last group retirement program. So, that's the first amendment which we would recommend that you support.

The second one/calls here the development of an Advisory Committee to the Secretary of Agriculture. At present, as I understand it, the Secretary of Agriculture has no specific advisory committee on wildlife. The Nelson proposal here would be to set up a committee outside of the regular civil service, of 12 persons chosen from members of wildlife organizations, farm organizations, state farm and game agencies and the general public. It would be a permanent advisory committee to make recommendations annually on wildlife matters. Apparently, there is considerable interest in wildlife and farm programs at this time, and we think this is probably the time to approach these things which we have promoted for some years. I think the addition of these two amendments would strengthen the Act, and I would like to recommend that these be incorporated into the recommendations of the Legislative Committee.

DR. MacMULLAN: Thank you, Frank, we will do that.

4. Federal Water Project Recreation Act. I think most of you are familiar with that. It is a problem that has been with us for a long time. Our recommendations are on page 4, second paragraph. We think it's a good bill, but we take exception to the notion that fish and wildlife projects are less in the public interest than flood control and navigational projects, and we would like to go on record to that effect.

5. The Water Quality Act of 1965 is again something that I think most of you are familiar with. There has been some question about the use of standards and then for the States to comply, and we believe that this proposed compromise on standards of quality of water would be satisfactory, and we think at this stage that this is something that we should push. I believe that there is still

some question about, or some philosophy or cloakroom diplomacy here, on what's going to come out, but we feel that we should be on record as supporting this, certainly in principle, and as quite probable in its present form.

6. Conservation of Predatory Animals - which we again don't need to dwell on. We all know what that is about and I think it should find general agreement and that we should support that.

7. Anadromous Fishery Program. Again, a good item. We prefer 3927, but Dingell has intervened for us here and added the Great Lakes as an eligible area which we think of course is proper, so we are recommending that 3927 with its water coverage including the Great Lakes is preferred. I think we should go on record to that effect.

8. Construction of Garrison Diversion Unit. We didn't put in a specific recommendation there until we had a chance to talk with the States who are more directly affected than most of us, but for the sake of argument right this morning we would like to insert there a recommendation in favour of this with some reluctance again on costs of fish and wildlife projects, but we would like to recommend being in favour of this. If there are any States directly involved who have any contrary opinion we would certainly like to hear it. Would you like to discuss that now? Russ?

MR. STUART (Commissioner, North Dakota Game and Fish Dept.): We are very much in favour of that.

DR. MacMULLAN: Thank you, Russ. We will leave that in as a recommendation in favour of it, even though it has passed both Houses.

9. The Navigable Water Pollution Control Act of 1965. (No record).

10. Natural Beauty Program. Out of the 10 natural beauty programs these were the four recommendations that the President put out at the conclusion of the White House Conference on Natural Beuty, and again they have had so much publicity in newspapers I think you know what all four are. One is control of outdoor advertising; one on junk yards; one requires that 3% of federated highway funds be used for the preservation and enhancement of natural beauty where now it's only permissive;and requiring that a portion of federal funds required for secondary roads be used for the actual construction of scenic recreational roads. We approve this.

11. The Establishment of a Wild River System. To begin, we heartily endorse this Bill without specifics as to the particular rivers. I believe none of them directly affect us. At least not very much.

12. The Effect of Pesticides on Fish and Wildlife. We have a recommendation that further pesticide control research is needed. This sounds, on the surface, rather innocuous, but on the other hand it is difficult to be specific about legislation in this area. We feel we should again, as we do each year, endorse this program of control and research.

13. Preservation of Shoreline Areas. A bill which has two areas involved - the Huron Mountains in Michigan and Pigeon Point in Minnesota. This is a sharing program of the federal government with the States to acquire these

areas. They are areas, I gather, which are of lesser importance than the shoreline areas like Sleeping Bear and Indiana Dunes. We, of course, feel very strongly, being a little biased in Michigan with our 3500 miles of shoreline, that this is an important thing to do.

14. Procedure for the Disposal of National Wildlife Refuges. Our recommendation that we agree to endorses that lands proposed for disposal should be cleared with the Migratory Bird Conservation Commission. The question whether the payment of fair market value is always warranted. We raise that question.

15. Establishment of Sleeping Bear National Lakeshore in Michigan. Again, from a subjective and very personal standpoint but trying to be objective, I think this is very urgent and I think it is a somewhat precarious project at the moment. It hasn't gotten all the enthusiastic enthusiasm that it should have and we in Michigan perhaps were somewhat negligent. We would certainly urge this to be supported as much as you can. I think it is a tremendously important and unique area. And, it is one of those areas where we are on the fringe, if we don't get it now we are likely to lose it. Besides that, the Michigan State Chamber of Commerce pays my expenses here. They don't really.

16. Establishment of Indiana Dunes National Lakeshore - which is similar to Sleeping Bear and I must confess perhaps even more important because there is much more interest in it being close to Chicago and it has much more potential for recreation in industrial areas.

I have one last recommendation which you don't have on your sheet that our Committee talked about last night.

17. Donation of surplus property to States for park or recreational purposes (H.R. 924)

A. Purpose: This bill would amend the Surplus Property Act to provide that certain federal surplus property may be donated for park or recreational purposes.

B. Status: This bill was referred to the House Committee on Government Operations in early January. Similar bills in previous sessions of the Congress were not approved by this committee. With the greatly increased emphasis now being given to outdoor recreational programs, perhaps this legislation will now receive more consideration.

C. Recommendation: For several years, this Association has strongly endorsed legislation which would make federal surplus property available to the States. With the new thrust being given to programs designed to provide outdoor recreational resources, we urge the Congress to expand the functions which are eligible to receive surplus property to include fish and game activities.

This is a perennial and it's gotten to the point where you feel kind of frustrated. I guess that's why we kind of left it out this year but we figured that we should still go on record that surplus properties should be available for parks and recreational uses, including fish, game and all the things that we represent here. There is apparently a powerful lobby which has resisted this for many years, and as Bill Towell says, he's dulled his teeth

on this for many, many years. Nothing has ever been done and it looks like a kind of hopeless job. It may require waiting sometime until we really get together as a profession and make a whopping big push. Maybe something can be done. Nevertheless, we strongly urge that the Association still go on record again so that there is no doubt in anyone's mind that we are still interested in it.

Now, I would entertain - informally, I would be willing to withdraw, on behalf of this Committee, any of these items which any State feels should not be endorsed by the Association as we have so indicated. If there are any of these, we can pull them out and vote on them separately. Do we have any such offers for withdrawal? If not, I would respectfully submit, Mr. President, that this Report from the Legislative Committee - I would move that it be accepted by the Association.

MR. SPEAKER (Director, Iowa Conservation Commission): I second that motion.

DR. MACMULLAN: Dan, did you have a comment?

MR. POOLE (Wildlife Management Institute): No. 4 is now public law.

DR. MACMULLAN: This should be withdrawn then.

DR. TOWELL (Director, Missouri Conservation Commission): I would like to offer an amendment to the motion, if I may, that instead of the Report being accepted that it be approved or endorsed to have the same weight as Resolutions.

PRESIDENT CLARKE: I think that's acceptable to the seconder. Everett?

MR. SPEAKER: Agreed.

PRESIDENT CLARKE: Is there anyone who has a further comment?

MR. ROSE (Iowa State Conservation Commission): I have one question on No. 9, and that is whether perhaps inadvertently you interjected the word "certain" following the word "and" in the first paragraph there. "And certain other waters", are those waters ..... ?

DR. MACMULLAN: Yes, that "certain" was my word. It slipped in there.

MR. ROSE: I wonder if other navigable waters would cover the Mississippi, the Missouri and other major navigable waterways?

DR. MACMULLAN: Gene, do you know what the jurisdiction of that is?

MR. GAZLAY (Michigan Conservation Department): (No record).

DR. MACMULLAN: It is in all navigable waters.

MR. ROSE: I am wondering if perhaps the Mississippi and Missouri not being included there is justifiable.

DR. MACMULLAN: Do you know whether that would be covered, Gene?

MR. GAZLAY: I think not.

DR. MacMULLAN: Could we have some time to check on that, and let's say, that if the Mississippi is not covered that it would be the understanding that we insert language that would cover the Mississippi, and this would be our recommendation that it cover the Mississippi also. If it does already, why, we will leave it as it stands.

PRESIDENT CLARKE: Are there any further comments? If not, gentlemen, those in favour of the motion will signify by saying "Aye". Contrary (none). Carried.

I have only one request to make and that is when this reaches the hands of Mr. Olson and the Resolutions Committee that some guidance be given to us as to just precisely to what chairman or to whom these things should be forwarded, because it will fall upon the still active executive to forward these resolutions to the appropriate bodies and it will help us. I would like also to say this is a most remarkable, very civilized legislative program. Some of the pronouncements which you people have had given to you - the President's inaugural address and statements on natural beauty and so on - penetrated to the most remote corners of the world including some where I was. I think you can only say that they are inspiring to all thinking people, and I am quite sure that the resolutions that come out of this will be of some use to all of us. Perhaps, the Canadian Wildlife Service people will be able to pass them on to our federal people on some similar occasion, and I am wondering if we may not even be faced with a firearms bill in which it might be helpful to know exactly what a body such as this has said.

Well, now, we come to the coffee break. We will have a few minutes of freedom here. May I ask if when you are satisfied you would just come back to your seats, so that we can start the meeting on time.

COFFEEBREAK

PRESIDENT CLARKE: Wayne Olson has requested that anyone who has any proposal for a resolution should submit it to him today, if possible. I should also like anyone who requires projection equipment or wants to show slides to let us know as soon as possible so that arrangements can be made in advance. We have already found that there are some unexpected requests for projection equipment.

We will now proceed to the Report of the Federal Aid Committee - Harry Ruhl, Chief of the Game Division, Michigan Department of Conservation. We have done very well by calling on these Michigan people to work on committees.

MR. RUHL (Michigan Department of Conservation): Thank you. That may be a little optomistic, Doug. I hope you Canadians will be patient with us when we air our problems and I'll try to go over it rather quickly. Some of the material under Federal Aid was covered by Legislation and some of the problems are really State-Federal relationship problems, too.

There are about twenty programs that I know of that have federal aid and have an impact upon this association's responsibilities, and which can

be utilized in the management of natural resources. Long-standing programs such as Clarke-McNary, Pittman-Robertson and Dingell-Johnson furnish experience which is useful in relation to congressional actions as well as the limitations and the administrative procedures developed under them.

New P-R and D-J Manual - The Federal Aid Committee enthusiastically endorses the joint efforts of the Grant-in-Aid Committee of the International Association of Fish, Game and Conservation Commissioners and the Bureau personnel toward simplification of P-R and D-J procedures. The new manual, while not going as far as many of the state people would have preferred, will simplify the administration of the two programs. The proposed annual financial plan, which is an improvement on the documentation format used by the U.S. Forest Service that replaces the plans, specifications and estimates document, should result in a more meaningful organization of project activities and will save hours of clerical work.

We appreciate the philosophy embodied in the new manual whereby project requirements are relaxed as a state as able to demonstrate that its system of accounting, procurement, and employee selection are in conformity with Federal standards. A next logical step in this effort toward simplification would be to work toward the standardization of grant-in-aid procedures among all of the various Federal agencies--particularly with respect to programs administered by the Bureau of Sport Fisheries and Wildlife, the Bureau of Commercial Fisheries, and the Bureau of Outdoor Recreation. Every effort should be made to consolidate the audit function among the various Department of Interior grant-in-aid programs. It would appear reasonable that the audit procedure should be standardized such that one auditor could review all programs while visiting a particular state.

Concern has been expressed that land acquisition costs in excess of the appraised value of the land will not be reimbursed by federal aid. In the latest draft of the new manual the portion on land acquisition is identical with the wording in the previous manual. Under past regulations, the state has been reimbursed for costs in excess of appraisal if they were administratively justified. The new manual does not change this.

The Dingell-Johnson and Pittman-Robertson programs have been very useful in placing the management of fish and game resources on a sound basis. It is recommended that this Association reaffirm its support of the continuation of those Federal excise taxes even though the administration has indicated the same attitude.

The Land and Water Conservation Fund Act - The acquisition and development of lands for fish and wildlife purposes is clearly eligible under the provisions of the Land and Water Conservation Fund Act. It is extremely important that the various states make certain that fish and wildlife needs are given adequate recognition in the preparation of the state comprehensive outdoor recreation plan. The emphasis given to wildlife restoration in this plan will largely determine the future eligibility of fish and game projects. It should be emphasized that the overall assignment of state priorities under this program will be by state action and will not, to any significant degree, be dictated by the Bureau of Outdoor Recreation.

This Association should attempt to persuade the Bureau of Outdoor Recreation to pattern policy and procedure after P-R and D-J in respect to compliance, records, auditing and state responsibility. Much might be gained from experience acquired over the years from these two federal programs.

The Association should take an active part in reminding Congress that future appropriations for Land and Water Conservation Fund programs include consideration for the Fish and Wildlife Service and for preservation of threatened species of fish and wildlife.

We should recommend additional money and revision of matching requirements for the Housing and Home Finance Agency's Open Space Act in order that it could adequately cover urban recreation facilities and free up more Land and Water Fund money for outdoor recreation. At a recent meeting in Chicago where Housing and Home Finance Agency people were present, it was indicated that there may be some possibility of this sort of program. At present there is no clear line of division between Land and Water program, Open Space, and 701. There is hope this may be clarified in a spirit of "dynamic compromise".

One of the problems will be the division of the allotment of money between state and local units of government. While this is primarily the function of each state based on determination of needs and their priorities and understandably varies from state to state, some general understanding and agreements in principles might make it easier for each state to administer that part of the program. It seems to be general agreement that this allocation should not be determined by the Legislatures or that specific ear-marking of state total allotment between various levels of local government and the state is not desirable. Perhaps some discussion here and in the International would be useful.

The Land and Water Conservation Fund should not, and apparently does not, exclude fish and game projects. However, it would be equally shortsighted to disregard or minimize other recreational needs and opportunities. It seems reasonable that the overall multiple-use approach on many projects is likely to be the most effective use of funds available and to have the greater support.

Not all conservation departments, as such, have a broad base, and they might not be the one designated to administer the program in their state. Conservation agencies should, however, take a very important and active part in the planning and development of adequate programs at all levels of government in their state, even though they have not been designated as the administrative agency.

H.R. 9141 Assistance in Training State and Local Law Enforcement Officers - This proposed legislation offers an opportunity for needed on-the-job officer training.

Two approaches appear applicable to conservation enforcement personnel.

1) Establishment of a region-wide (9-state) research and training station to be associated with a university centrally located. State personnel could be assigned to such a research and training base for training periods of two weeks to one month.

2) Training aid by state-based police training departments, the training section of a State Civil service Department or Attorney General's Department.

Federal Aid through ACP Cost Sharing Assistance to Landowners -

Cost Sharing funds for forestry practices are available under the Agricultural Conservation Program. These practices can provide significant and enduring benefits to land and water conservation and the production of fish and wildlife.

A relatively small percentage of the total ACP budget is spent on these practices. In Michigan the soil and water conservation needs inventory shows the area of forest and woodlands in need of practice treatment to be greater than that of all other classes of lands. Five percent of the annual ACP budget is currently spent on forestry practices.

There are two principle deterrents to achieving major increase in forestry practices:

1) Allotments to counties are inversely proportional to area of forest land. Greater emphasis on long-term practices should tend to increase allotments to forested counties.

2) Transfer of funds for technical assistance is inadequate to provide the service required. Distribution of 1% of allocation on a state-wide rather than county basis would help to correct this problem.

Commercial Fishery Act of 1964 - The Federal Aid Committee is concerned about the disproportionately low share of grant-in-aid funds apportioned to Great Lakes States under the Commercial Fisheries Act of 1964. Based on the commercial fishing potential in the Great Lakes and the urgent need for programs that will result in the development of this important fishery, it is suggested that the Bureau of Commercial Fisheries review its apportionment formula in order that a more equitable distribution of funds may be made.

Economic Opportunity of 1964 - This Act provides excellent opportunities to obtain manpower to accomplish needed fish and wildlife work. Both Michigan and Minnesota have received substantial grants to conduct work training programs as provided in Title I, Part B of the Act. For example, Michigan's approved program during the current year amounts to $2,370,000 with over $2,000,000 to be reimbursed by the Federal Government. It is expected that more than 1,700 young men and women will be employed in the various functional programs of the Michigan Department of Conservation. Examples of work to be done by the work training enrollees include the maintenance of public fishing sites, habitat development work on state game areas, equipment maintenance, sign construction, undertaking deer range improvement work, state park maintenance, and a host of other activities.

Title V of the Food and Agriculture Act of 1965 (H.R. 7097) amends the Soil Bank Act of 1956. As amended, the proposal would authorize the Secretary of Agriculture to enter into contracts with farmers and ranchers during the period 1965-1970 for the retirement of lands from crop production. Although not detailed in the bill, publicity indicates a desire to retire 40 million acres from crop production if this act is passed. The contracts cannot extend beyond December 31, 1979.

No rules and regulations are available at this time, but it appears that this title will, in general, extend and to some extent liberalize the original Soil Bank Act. Two new subsections have been added which are of special interest to fish and Game and Conservation Departments. These two subsections are as follows:

> Section 118 (b) "For the purpose of obtaining an increase in the permanent retirement of cropland to noncrop uses the Secretary may, notwithstanding any other provision of law, transfer funds appropriated for carrying out this title to any other Federal agency or to States or local governmental agencies for use in acquiring cropland for the preservation of open spaces, natural beauty, the development of wildlife and recreational facilities, and the prevention of air and water pollution."
>
> Section 118 (c) "The Secretary also is authorized to share the cost with state and local governmental agencies in the establishment of practices and uses which will establish, protect and conserve open spaces, natural beauty, wildlife and recreational resources, and prevent air and water pollution."

Under subsection (b) it appears that grants to the states or local governmental agencies to acquire crop lands for conservation and public recreational uses will be possible. Subsection (c) provides a source of funds on a cost-sharing basis for the improvement of public lands for conservation, or recreational purposes. If these subsections are interpreted to favour liberal use of federal funds for these purposes, they could provide very significant increases in funds available for conservation and recreation at the state and local levels.

S. 1229 and H.R. 5269 - An analysis of this program will be included in the legislative report.

The Intergovernmental Act of 1965 (S. 561, H.R. 6118) - This bill apparently was initiated by the Budget Bureau and attempts to streamline and clarify procedures.

Title I deals with grants-in-aid to the states.

Title II provides for congressional review of programs. Section 202 of Title II provides any current or subsequent act of Congress for grants-in-aid not bearing an expiration date to expire within 5 years of the effective date. Presumably, this would not affect P-R and D-J programs enacted previously unless it would come under the provision because they do not have the specific expiration date. But perhaps the annual appropriation of funds, valid for 2 years, might take care of the P-R program.

Title III provides for federal service to units of local government. Section 302, Title III provides that such services are to be paid by the requesting unit of government. We doubt that it was intended that incidental services such as pesticide analysis of a specimen by Patuxent would require repayment.

Title IV deals with grants for urban development. This title represents a fairly elaborate statement of policy for urban assistance. It calls for wise use of natural resources (including wildlife) and consideration for a number

of other undeniably desirable ends: The wording is so general that it suggests Utopia. It specifically favours and gives review authority to units of general local government over specialized units of local government, and exempts a higher unit of government from the requirement of having approval of a local unit of government before applying for aid for projects within a metropolitan area. We find nothing particularly objectionable in it from the association's point of view.

Title V deals with urban land utilization and seems to be reasonable. The only question as to whether these statements are so vague would be difficult to implement.

We urge that the association should keep close touch with this bill and see that undesirable or unnecessary restrictions are not inadvertently introduced.

H.D. Ruhl, Chairman,
Lansing, Michigan.

Russell Stuart, Bismarck, N.D.

Minor E. Clark, Frankfort, Kentucky.

Woodrow Fleming, Indianapolis, Indiana.

George E. Sprecher, Madison, Wisconsin.

PRESIDENT CLARKE: Any discussion? (None). In that case, Harry, I guess you're scot-free.

MR. RUHL: I move that the Report be accepted.

MR. STEEN (Director, Nebraska Game, Forestation and Park Commission): I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). Carried.

The next Committee Report is the Federal-State Relations Committee - Chairman Woodrow Fleming of Indiana.

MR. FLEMING (Director, Indiana Division of Fish and Game): The Federal-State Relations Committee Report is a little bit difficult to follow, as some of you would know, on the Federal Aid Committee.

Many of us who have served on the Federal Aid Committee or the Federal-State Relations Committee have at times found it difficult to separate the responsibilities of the two committees. There is no real line of separation. Almost invariably one or the other finds itself simply in a "me, too" position. I know last year I was on the Federal Aid Committee and we seemed to have the same overlap in this situation.

The members of the Federal-State Relations Committee are interested in every topic covered earlier by the Federal Aid Committee. We are also interested in the Dodd Bill on firearms. We are interested in the Hruska Bill to make possible the spending of U.S. duck stamp money in Canada -

not to force a program on our good neighbours but in the spirit of assistance and cooperation with the Canadian provinces for a common good. We are interested in legislation that would make possible the use of duck stamp money by the states for purchases of duck production habitat only. However, these interests are not truly in the field of Federal-State relations and should not and are not a part of our committee report as such.

It has been pointed out that with the rapid increase in available federal aid programs that within a short period of time that it will be possible for almost the entire budget of a state's fish and game department to be spent as a part of various federal aid programs. This, of course, means that the states will operate their projects pretty much under federal rules of procedure. Under these circumstances it appears logical that there will arise problems and differences of philosophy, aims and goals, program purposes and responsibilities to those who pay the taxes that make such programs possible. With this in mind, the members of the Federal-State Relations Committee do strongly recommend that this committee be continued and that henceforth its membership be made up of equal numbers of federal agency representatives and state fish and game representatives. The Committee thus composed would serve as a clearing house for federal-state problems other than those covered by the Federal Aid Committee. Special Federal-State related problems could be assigned to this Committee by the officers of the Association.

We in our Association must strive to keep the federal-aid programs as state programs administered by the state and kept as simple to administer as possible.

Briefly, our recommendation is that the emphasis henceforth in the Federal-State Relations Committee be that of composing the Committee equally or somewhere equally represented by Federal and State agency employees and that this Committee be a place of opportunity for discussing and working out problems that may arise in the programs of Federal-State group programs, (Federal-Aid) if you want to call it that, and not so much in actual dollars involved but in the philosophy, as I have said, and in the answers and in the problems that may arise from time to time that this could be a real opportunity to discuss these mutual problems by the federal and state agencies. Thank you.

PRESIDENT CLARKE: Thank you very much, Mr. Fleming. Are there any comments? Or is there any discussion on this report? Do you wish to move its adoption?

MR. FLEMING: Yes, I so move.

MR. SCOTT (Wisconsin Conservation Dept.): I second the motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

I am sure the Vice-President or the President-to-be will welcome such a concrete proposal from a committee chairman as to how the work of this particular committee can be made more effective. I certainly would have been very happy for guidance of this sort myself a few months ago. Now, we have finished with our Committee reports for this morning.

DR. GUTERMUTH (Wildlife Management Institute): Before we leave these three important committees, I would like to call the attention of the group here to an extremely important piece of legislation that has now been introduced in the Congress, which is probably more far-reaching in its scope .....

DR. CLARKE: This sounds very important and we should have it on record. Would you come up here and speak before the microphone, please.

DR. GUTERMUTH: I was in hopes that the thing would have reached you people so that it would have been incorporated in one of the reports that you have had reported this morning. What I am referring to is a piece of legislation that has now been introduced in the Senate which is probably one of the most far-reaching proposals that has been introduced in the Congress dealing with natural resources in a good many years. The number I believe is S 2291. It was introduced by Senator Muskie of Maine. It has a lot of our good friends on the Bill as co-authors - something in the neighbourhood of possibly - I didn't count them - ten senators. This bill calls for the complete abolishment of the U.S. Fish and Wildlife Service as such and establishes an entirely new department in government which deals with marine and atmospheric resources. It mentions and goes into detail with the Great Lakes. It goes into detail with all the management of our fish and wildlife resources, while it completely abolishes those departments and takes fish and wildlife and parks pretty much out of Interior. In abolishing these activities in the Department of Interior, it would establish a separate bureau back in Interior which would deal with inland resources. Another and separate bureau would deal with wildlife resources, and then you would find the Great Lakes and all of these other inter-related resources and all the marine resources over in this other new department.

Now, this thing is tremendously important. As I say, it has ten senators on it already. What's going to happen I don't know. Of course, hearings haven't even been scheduled on it. I don't know whether they will get anywhere in this session of Congress, probably not. It may be that you will find now, as a result of this, a whole string of companion bills introduced in the House of Representatives. I got a copy of this Bill a couple of days ago from Senator John McClelland, the Chairman of the Senate Committee which is handling this Bill. I have talked with a number of people in the U.S. Fish and Wildlife Service and some of the people in the National Forestry Institute in Washington and tried to get their ideas on this thing. There is a lot of talk in favour of certain aspects of this, particularly by the marine people. They feel that there are certain advantages here in a proposal of this kind, but where it's going to go, I don't know. And, all I've got to say is that if there ever was anything that is going to be of direct interest to all of you, this is it.

DR. CLARKE: Thank you, Pink. I am sure that everyone will follow this with a great deal of interest. I now call on Dr. Clarence Tarzwell. Dr. Tarzwell is Chief of the Aquatic Biology Section of the U.S. Department of Health, Education and Welfare, and he will speak to us on the subject of Maintaining Water Quality.

DR. C.M. TARZWELL (Chief, Aquatic Biology Section, U.S. Department of Health, Education and Welfare, National Marine Water Quality Laboratory, Kingston, Rhode Island):

MAINTAINING WATER QUALITY

It is a great pleasure to be able to discuss with you a subject which has been very dear to my heart for a number of years. I am also pleased to come back to Ontario because I feel quite at home here since both sides of my family migrated to Michigan from Ontario and I still have many relatives here.

I am sure that all of you, as conservationists, are well aware of the problems of water resources which are facing us today. This problem is real. It is with us now. It is urgent. A great deal depends upon it. Our future well-being and the very existence of our present civilization. We must recognize the importance of our water resources. Water is not just a luxury or something that we can take for granted. It doesn't just come from the tap, maybe as some people feel, or as some children think that milk comes from a bottle. We must consider its source and its origin and its adequacy and its permanence. In the long run water is whatever we have to pay to get it. It is worth its weight in gold, or if you are thirsty enough you would give all your worldly possessions for just one swallow of water. This is how important it is. It is basic to all life. It is basic to our economy. It is essential for industry. It is essential for the growth and expansion of our industry - water of the right quality and quantity. It is essential for our agriculture, for irrigation, for stock watering. It is the basis for our fishing - both commercial and recreational. Most of our recreation is water-based - picnicking, just going out for a little relaxation, swimming, boating, water skiing and, last but not least, are the aesthetic values entailed in our water resources and our water areas.

To insure our present and future supply we must consider two things - quantity and quality. Now, sustained, useable stream flow is about one-third or even less than the total flow. We have had floods where the water rushes off and we can depend only on the sustained flow. This has come about in part due to deforestation, overgrazing, fire, drainage, unwise agricultural practices, the lowering of the water table through the mining of the ground water, mining operations, road building, and a host of other activities that man has engaged in. There has been a great deal of erosion and silting. Now, therefore, the quantity of the water that we have for use is dependent in large part upon the management of the land. We are not using as much as we could. We are going to need more. We are going to have good land management in order to make more of the fresh water available. Also, we feel that we are going, perhaps in some areas, to need more water than is in existence there. In other words, we are going to have to increase the supply in some way. We have at present no economically feasible method for increasing the supply beyond that which comes as rainfall, and this in some areas is not enough, so we must come to re-use the water that we have. We must re-use this water over and over. If we treat it well, we can't wear it out. We can use it just as long as it is suitable for use.

This brings us to the other important consideration - water quality, and this is what I would like to discuss today. For effective re-use of water each user must return that water to its source or to another body of water in such a condition that it does not destroy the use or the value of that water for another use. This is basic to all water use. This has not been done. It is not being done now. You are all acquainted with the pollution of many of our streams. Some of them have been converted into open sewers. A whole host of materials are being added to our waters which render them unfit for desired uses. Not only our rivers but our lakes are suffering. You can see what has happened in the small lakes. Not too long ago many felt that the Great Lakes were somewhat immune, that there was no evidence, it was stated, that man's activities were having any effect on the open waters of the lake. I think subsequent developments have shown that we just were not acute enough to notice these harmful effects. They have now piled up and we find conditions becoming critically bad in some of the Great Lakes, Lake Erie, for instance, where through organic enrichment we have brought about eutrophication that is reducing or eliminating some of the desired uses. Pollution is a national problem. It is a worldwide problem. We must have the use of these fresh waters because we depend on them. Now, you say, what about the sea water? Well, if you lived near the ocean it is true that you can de-salinate the ocean's water and supply the needs. However, for inland use this is rather impractical because of the cost of transportation. What about using the water we now have? What are we going to do? Turn all the rivers around to make them flow upstream? I think you see that this is not really feasible. Furthermore, the sea water contains a great deal more dissolved solids than even our most polluted fresh water, and, therefore, it would seem economically feasible and desirable to treat these fresh waters at their source for re-use because they have less of the materials dissolved in them, and, secondly, they are there. You do not have the cost of transportation. How are we going to do this? This is the problem.

Now, in discussing this I would like to define the terms - at least give you my definition of these terms. I know that these terms have been loosely used, and they mean different things to different people. But, in order that you will not misunderstand me, I would like to give you my definitions. The first is pollution. This means a great many things to different people. To me, of course, when I speak of pollution I think principally of man-caused pollution. There is some pollution that is due to the natural situation, but we are not going to change that very readily. The thing that we can change or control is pollution due to man's use. Therefore, with that qualification I would like to say that in my opinion water pollution is the addition of any material or any change in quality or character of the water which interfers with, lessens or destroys a desired use. Therefore, it is tied to use. Without a detrimental effect on some use there is no pollution, and what might be pollution for one use can very readily not be pollution for another. If you have a trout stream that is not rich, the addition of a little bit of sewage is going to improve production. If your objective is the production of fish, this is fertilization and not pollution. It is desired. If it is just for navigation, you do not care much. However, if the water is for drinking purposes, then human sewage does constitute a pollutant because it interfers with the use of these waters.

If we put too much organic material into our streams you deplete the oxygen and pollute them even for fish production. Therefore, what we are interested in is the amount of materials. The shortest definition for pollution is simply just "too much of most anything". We hear the term "clean water". What is a clean water? Hard to define! Everyone seems to have a different definition and it becomes very involved. I think the straightforward approach is the best. Clean water is a water which is suitable for a desired use. Water quality - I think we have heard a lot of talk about water quality and I am afraid many of the people when they speak of water quality do not have the same definition for it that I do. If we did, perhaps there would be less talk about it. But to me, water quality is simply the specifications for water for a certain use. It is the specifications needed for that water. It is the quality, or the things it must meet, in order to be suitable for that use. Another term that we have used is toxicity. We have heard it said, "Nothing toxic shall be added to the water." You know with these laws on the books we haven't been very successful in abating pollution. Toxicity, too, is a quantitative term. It is only when you have too much or exceed certain concentrations that the material becomes toxic. Many of these materials are not harmful. Many are necessities of life, which we must have for good growth and good production. You often hear - well, your table salt proved to be toxic to babies when it was substituted for sugar, although it is needed for life. Selenium - outstandingly toxic, but it is one of the trace elements needed for life. It is only when these materials exceed certain concentrations that they become toxic and undesirable. Therefore, instead of saying, "Nothing toxic shall be added", let's be more sensible and say, "Look, Judge, we're reasonable people. We are asking you not to put anything in. We are just asking that this concentration not be exceeded". I think we'll be on firmer ground.

Now, we come to water quality criteria. What is the need for this? Well, if we are going to re-use our water efficiently and effectively, as we have said, each user must return it to its source in such condition that it does not damage that water for other desired uses. In order to do this efficiently, he must know the quality of water required for that use. If he doesn't know it, how is it going to meet the requirements? We are in a bad position - you who have tried to abate pollution and seen cases in court know this. What's your trouble?

Your basic trouble is that you do not know what constitutes pollution. When is the water polluted? What constitutes pollution? What concentrations make it polluted? We do not know. We know some of the quality required for various water uses, but we do not know enough about it to really meet the complex problems the way we should. We are in a bad position when we do not know what really constitutes pollution. This is where we are. If we believe this, let me ask you a few questions. Can you tell me the concentrations of the pesticides which are not harmful in our drinking water under conditions of continuous use? I will go even further. Can you tell me the concentrations of the heavy metals? I would like for someone to tell me because I don't know.

We have a great deal to learn. We do know some things, but without this knowledge, how can we really detect pollution? We have been missing the boat in some cases. Look at the Great Lakes. How can we show that a water is polluted? How can we evaluate pollution, and, above all, how are we going to set down standards for waste treatments - ~~the treatment~~ of our own waste? Up to now it has been largely guesswork. A certain person in charge of water pollution will say, "Now, you must treat this way", and he's taking it probably mostly off the top of his head and gets another man to say, you should do this. No wonder industry feels a little bit concerned and confused. We really do not know our objectives in waste treatment until we know the quality of water required for each use, because we must treat it so it is suitable for that use, and without that knowledge, how are we going to do it?

Therefore, we do have need for water quality, but in this water quality, water quality criteria, must be based on the knowledge of the water quality requirements for that use. This we do not have. Therefore, we must have a research program that will tell us these requirements and this is quite a bit in the future. We know some things. We can set tentative criteria, but we can't give all the answers now, and I doubt if we ever will be able to do this.

For this reason I think that we must carry on research. We must use the knowledge we now have. We must use our common sense and set tentative criteria on some things. In all, I would be afraid to go down the whole list, with the idea that these will be used until our advancing knowledge shows that they should be modified or changed.

In summary, we are agreed that our water resources have deteriorated. We are also agreed that they must be restored and maintained if we are to pursue our present way of life. Water is the necessity of life. Let's not use our God-given intelligence by destroying it and then trying to restore it. Let's go back to the source. It's going to cost a great deal. We must stop this business of paying for mismanagement due to greed or the desire to make a fast buck, and the very grave effects that it has on the uninformed public, and in changing attitude among many of us.

We don't have very much responsibility for sewers. I know that you as good citizens wouldn't foul water directly. We must feel responsibility for these waters. I have listed the main uses of water, and have not included the disposal of waste. It is part of all these other uses. The putting in of other wastes is not a use but a misuse of that water.

The chief problems we have to face are quality and quantity. For quality we need better land management and we need to develop methods of treating these complex wastes so that the used water can be returned to the stream in a way that does not pollute it. We must have a knowledge of quality required for each use, based on research which defines the quality for each use.

If we did do these things! - define pollution and define the needs in waste treatment - we could take action. The general public is very often mislead. We would like to set water quality criteria, to establish water

pollution control boards - this would make the general public a more efficient and effective force in the abatement of pollution.

Industry is getting to the point where it must take into consideration treatment of waters.

What is toxic? What's harmful and what's significantly harmful? Nothing is clearly defined. If we had these water quality criteria we wouldn't hesitate. The question would be, "Are you or are you not meeting these requirements?" We could win most of our cases. We could win those in which we had re-use of water, which is our only hope for fresh water of the quality we need for those organisms which we want to restore and maintain. A research program is essential for both aspects of these water quality criteria.

The water resource is essential. It is necessary for us in our existence. We should pool our best efforts for its preservation, being guided by the past. I think that we will be able to maintain these water resources which are so essential to us now and in the future.

PRESIDENT CLARKE: Thank you, Dr. Tarzwell. Any questions or discussion?

I have only one comment to make. How lucky we are to live in an area where there is an adequate water supply for an industrial community. This, I say after coming back from Africa.

Tomorrow, George Moore will be in the chair.

ADJOURNED AT 11:15 a.m.

11:30 a.m. - Field trip to Pioneer Village, under the auspices of the Metropolitan Toronto and Regional Conservation Authority, and barbecue lunch at Pioneer Village.

Wednesday Morning Session, July 28.

MR. MOORE, Chairman (Kansas): Well, we might as well get started but before we do I hope this machine over here doesn't give us any problem - with my accent. It's kind of like the man who was walking down the street and met his doctor, and the doctor said, "You don't look so good." "Well, doc, I don't feel so good either". So he told him what to do and about three months later he ran into John again and the doc said, "John you are looking good." He said, "Well, I feel good." "What are you doing with that redhead on your arm?" He said, "Well, doc, that's what you told me to do", and the doc said that he didn't say any such thing. He said, "What did I tell you to do?" He said, "Get a hot momma and be cheerful". The doc said, "I didn't say any such thing. I said you had a heart murmer and be careful." So if you have any trouble, it's just my brogue. We might as well get started here, and the first thing on the program is committee reports. Yesterday, Frank King talked about the federal farm program in such a meeting, and I believe he has a few more remarks to make this morning. Frank.

MR. KING (Wisconsin): I have told your chairman that the Federal Farm Program Committee will not have a formal report for your adoption this year. You may recall during the last several years the committee has been having some trouble with the chairman leaving or being inactive for several reasons, so actually last year we had a rather "pick-up" report, and this year we have been unable to assemble anything, although the contacts I have made with the committee members and one is here today, Robert Morgan of North Dakota, and contacts with others interested in this subject, it seemed this year that the only major interest was in this omnibus farm bill which we discussed yesterday. Actually, in your support of the Legislative Committee and again in the resolutions coming up, you will take action on the topics that the Committee has been interested in, concerning the farm bill. There might be a question as to whether a federal farm program committee has a place here, or if there has been a need for one and yet thinking of a topic of this nature, it seemed without doubt that there certainly should be continued action here. If this farm program goes into effect, and I certainly hope that some type of program will, I believe that this group will want to follow the results of that and report on it again, especially if there is an advisory committee set up to the Secretary of Agriculture. I am sure you will want to send in your recommendations. I think you will want to follow the results of this new program in the various states. For those two actions I assume that the committee may wish to continue. I think also you would wish that this be not limited to the Federal Farm Program Committee. Certainly the topic is wider than that and many state actions should be brought in. So probably all types of farm programs should be considered here. Also, with your Pheasant Council there has been some overlapping of interest. Through the Pheasant Council many of these subjects are covered and reported on, through the reports of the chairman, and the reports should be forwarded through this Farm Program Committee, so we should get together in advance a little bit more than we have in the past. I think those are the only comments I would have and any action on the Committee of course would be up to the State officials, and you will consider our recommendations when you deal with the Legislative Farm Program.

MR. MOORE: I don't believe there is any need to take any action, but I was wondering if there would be any comments from the floor. Any discussion? Now would be a good time to express your opinion. We are considering the recommendations and, certainly, if the advisory group is considered we would make our recommendations either through this organization or probably

through the International, because I am sure that is where they would look for it. Still no questions? No one has any question they would like to make?

Alright then, we will hurry on and go to the next topic. I know all of you know Tom Evans. Tom has been active in this Wetlands Committee for many years, and I guess he's probably done more work than anyone else on it and probably knows more about it than anyone else. Tom Evans is going to give the Committee Report on Wetlands.

MR. EVANS (Illinois Department of Conservation): Thank you, George. I think in the interest of time and since a panel follows immediately, I thought we would get the group up here to get the panel set up. The Wetlands Committee report is along the same general lines as in the past, although it is considerably shorter.

WETLANDS COMMITTEE REPORT

The 1965 report of the Wetlands Committee will, in addition to re-iterating previous recommendations, attempt to present a complete picture of wetlands preservation programs by the federal governments and the Association's member states and provinces.

Undoubtedly, the most significant new development in this field is the recent recommendation to the Canadian Cabinet that a wetlands acquisition progam be started by the Canadian Wildlife Service in 1967. This is a program which sportsmen and conservationists in both countries have hoped for for several years. As you will recall it was preceded by a two-year pilot program in Manitoba and Saskatchewan to determine the best approaches to the problem. Since Vic Solman will cover this in more detail it will not be treated fully here. The News Release, dated May 21, 1965, reads as follows:

> "Results of trial waterfowl wetlands leasing projects in Canada's Prairie Province have justified a recommendation to the Canadian Cabinet that a large-scale program to maintain irreplaceable areas should be started in 1967. Disclosure of the recommendation was made recently by Arthur Laing, Canadian Minister of Northern Affairs and National Resources, a department that includes the Canadian Wildlife Service.
>
> "Like the U.S., Canadian wetlands, which are important to ducks, are being drained for agricultural use and industrial or residential construction. For the last two years the Service has made pilot contracts with a number of farmers to maintain their wetlands in a natural condition, and various techniques and administrative procedures have been evaluated. Farmers also have been encouraged to adopt methods which have been developed to reduce the damage ducks can cause to grain crops.
>
> "Canada's Prairie Provinces are important to waterfowl because about 70% of the ducks most popular with sportsmen are raised each year in the potholes and marshes of Manitoba, Saskatchewan and Alberta. 'Although the maintenance of our prairie pothole "duck factory" is of primary importance,' Minister Laing said, 'the program which I hope

to get under way will also include the purchase or long-term lease of large wetlands in the rest of Canada as well.'"

It is to be hoped sincerely that Minister Laing's recommendations will be adopted and a large scale program initiated in Canada.

The Bureau of Sport Fisheries and Wildlife's acquisition continued to pick up momentum although it is still far behind the authorized schedule. Total appropriations for the first five years of the seven-year program total only $32,500,000. The authorization provided for $15,000,000 per year, or $75,000,000 the first five years. Thus, less than half the authorized amount has been appropriated.

Despite initial difficulties in getting the program rolling, the Bureau has utilized all appropriated funds. Through June 30, 1965, fee and easement acquisition totaled 521,141 acres. There is a back log of Migratory Bird Conservation Commission approvals totalling $26,000,000. In the pothole production area the Bureau has acquired in fee or has purchase agreements on 97,154 acres. In addition, easements prohibiting destruction of wetlands have been secured on 268,995 acres. In fiscal year 1965 easements were taken on 177,796 acres; nearly double the previous accomplishments. Total costs in Region 3 through June 30, 1965, are $15,500,000.

During this same five-year period there has been available to the Bureau an estimated $21,337,500 from Duck Stamp sales which is also used for wetlands and refuge land purchases. The total of 521,141 acres acquired through May 31, 1965 includes acquisition with Duck Stamp sales funds.

Average cost of lands acquired in fee is $44.39/acre and for those acquired under easement the average is $10.95/acre. The increase in program costs is striking when compared to the 1963 figures. Through June 30, 1963, the respective costs for fee and easement acquisition were $27.45/acre and $6.41/acre. This represents per acre increases of 62 percent and 70 percent.

The member states and provinces have also been carrying on wetlands acquisition programs for many years. These programs and accomplishments are summarized in the attached Table.

What could be done with adequate funds is illustrated by a statement from Minnesota to the effect that the Department has some 170,000 acres of wildlife lands, mostly wetlands, approved for purchase. The state could use $7,000,000 immediately to acquire these lands; plus three times that amount for additional wetlands acquisition. Would this not be a very appropriate use of some of the authorized but unappropriated monies from the loan fund. Undoubtedly, other states have similar situations.

Several other items are worthy of mention and are presented in the form of recommendations for action by the Association:

1. Support H.R. 8432--PROCEDURE FOR DISPOSAL OF NATIONAL WILDLIFE REFUGES,
   Mr. John D. Dingell (Michigan). Amends the Migratory Bird Conservation Act with respect to the disposal of land and interests in land acquired pursuant to such act. Provides

that any land or interest in land approved for acquisition or use by the Migratory Bird Conservation Commission shall not be sold, terminated, transferred for any other use, or otherwise disposed of without the approval of the Commission. This is the same as S.1816 (Report No. 19, page 187), introduced by Senator Lee Metcalf (Montana), a member of the Commission, who protests the Bureau of the Budget policy of disposing of certain wildlife refuges. Referred 5/25/65 to the House Committee on Merchant Marine and Fisheries.

2. Seek modification of ACP practices C-9, C-10, and C-11 to prevent use of subsidy funds to drain wetlands. The present bill, "Food and Agriculture Act of 1965", establishing the 1965-'66 farm program continues the present prohibition of payment of subsidies for drainage of Class III, IV and V wetlands. However, when less permanent areas go dry temporarily due to drought or partial drainage by shallow furrows or ditches, a crop history develops and the use of subsidies becomes legal.

3. Work for authorization of a portion of the $105,000,000 fund for:

   a. Expenditure of any or all the funds in Canada if and when it is determined that a joint international effort in the prairie provinces is necessary and desired.

4. Work to have funds over and above the $105,000,000 loan fund made available for:

   a. Grants to states for wetlands acquisition, lease or easement taking programs on a non-matching basis.

   b. Development of existing or potential wetlands safe from exploitation, to raise their production capacity.

   c. Incentive payments to landowners, as supplements to USDA subsidy payments, to retain, restore or create water areas which do or would have value for waterfowl production.

Respectfully submitted,

WETLANDS COMMITTEE MEMBERS

Thomas R. Evans, Chairman
W.A. Benson
G.W. Malaher
David B. Vesall
Earl T. Rose.

(See attached Table).

I move acceptance of this report.

MR. GALE (Missouri Conservation Commission): I second that motion.

MR. MOORE: All in favour. Opposed (None). Carried.

# STATE - PROVINCIAL WETLANDS ACQUISITION

JULY 1965

| STATE or PROVINCE | WETLANDS ACQUISITION PROGRAM | PRIMARY USE | HOW LONG IN EFFECT YEARS | AV. ANNUAL APPROPRIATION | AVERAGE ANNUAL ACREAGE | | TOTAL ACQUISITION PAST 15 YEARS | | FAVOR GRANTS IN AID TO STATES | FAVOR USE OF LOAN FUND IN CANADA |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Land | Water | Land | Water | | |
| No. Dakota | Yes | P - P.H. | 10+ | $12-$18,000 | 600 - 1,000 | | 18,000+ | | Yes | Yes |
| So. Dakota | Yes | P - P.H. | 10+ | $246,200 | 6,945<br>40% | 60% | 59,038<br>40% | 60% | Yes | Yes |
| Nebraska | Yes | P.H. - P-M | 1-5 | None | - | - | 1/<br>2,111 | 2,628 | Yes | Yes<br>Limited |
| Kansas | Yes | All | 10+ | Varies | Varies | | 30,100 | | ? | Yes |
| Colorado | Yes | P - P.H. | 10+ | 2/<br>- | 1,487 | 165 | 22,297 | 2,477 | Yes | Yes |
| Missouri | Yes | M - P.H. | 10+ | $85,000 | 670 | 400 | 12,554 | 7,592 | Qualified Yes | Yes |
| Iowa | Yes | P-M-W-P-H | 10+ | $250,000 + - | 5,000 | | 80,000 | | Yes | Yes |
| Minnesota | Yes | P | 10+ | $500,000 -$600,000 | | | 142,775 | | Yes | States First |
| Wisconsin | Yes | P.H. | 10+ | $500,000 | 20,000 | | 225,000 | | Yes | Yes |
| Illinois | Yes | M - P.H. | 10+ | $250,000 total acq. | No average | | 3/<br>8,900 | | Yes | Yes |
| Indiana | Yes | M - W - P.H. | 10+ | $32,000 | 2,860 | 247 | 42,892 | 3,707 | Yes | Yes |
| Kentucky | Yes | W - P.H. | 10+ | $100,000 | 1,500 | 30 | 11,200 | 300 | Yes | Yes |
| Ohio | Yes | P - M | 5-10 | Varies | 200 | 100 | 3,000 | 2,000 | No | ? |
| Michigan | Yes | P - P.H. | 10+(1939) | $392,840 | 11,260<br>2-5% Water | | 168,950<br>2-5% Water | | Yes | Yes |
| Ontario | Yes | P.H. | 1-5 | $100,000 | 2,000 | | (Unknown) | | Applicable to Canada? | Yes, emphatically. |
| Manitoba | | | | No Data | | | | | | |

SYMBOLS: P - Production
M - Migration
W - Wintering
P.H. - Public Hunting

1/ For 4-year period only.

2/ Received $15,000 gift from American Game Protective Association for this purpose.

3/ Also received 1163 acres as gift for waterfowl management.

h

CHAIRMAN MOORE: We are going to continue and maybe we will get more discussion here. I think it is a very timely and very important question. We are going to continue with this wetlands topic and Tom is going to moderate the discussion on how do we get more fish and wildlife recreation through your small watershed program. It is not the wetland in the true sense that Tom has just been discussing, but it includes water. I am sure some wetlands are included in the discussion in any case. Tom, will you introduce your panel either now or as they start speaking - either way, as you see fit.

HOW DO WE GET RECREATION, FISH AND WILDLIFE VALUES INTO THE SMALL WATERSHED PROGRAM:

MR. EVANS: Thank you, George. I think you can all read the program and I think you know most of them, so I think I will save time and introduce them as we come to them.

This may be a little usurpation of a job here in that the Program Committee Chairman took it upon himself to moderate one of the panels. I couldn't resist doing so, having spent so much time working on the whole problem of watershed programs and the problems involved in trying to get fish and wildlife recreational benefits included in projects. This, coupled with the fact that I have made a practice of taking in the National Watershed Congress. As many of you know, we have been raising a considerable amount of cain over the failure of many states to participate in that Congress, and it was after attending the last Congress in Sioux City, Iowa, that I felt strongly that I wanted to take part in this myself. The thing about the 12th Watershed Congress which was held in Sioux City was that there was a reversion back to the basic premise on which the watershed program was established. Primary attention was given to the need for emphasizing application of land treatment measures. The foundation of this emphasis was laid by Milton Fricke, the watershed man of the year from Nebraska, who stated in the opening session that we had been relying too much on the use of impoundment structures, but that now we were going back to land treatment at this Congress. Jack Wetzel of the Soil Conservation Service had some very cogent comments to make along these same lines. He stated that the objective is to get land treatment measures on the same schedule as the structural treatment; that land treatment measures are the only ones that can have a real and lasting effect on siltation; structures cannot do a comparable job. He went on to say that land treatment measures have other benefits to fish and wildlife, particularly with some modifications and that recreational income potential increases annually. I think it was most regrettable that at a Congress such as this one, State game and fish agencies were so poorly represented. I don't recall the exact figure, but I believe there were only ten or eleven states who were represented - no, seven states - by either biologists or foresters at this last Watershed Congress. I might point out that I believe at the meeting of this Association last year we adopted a resolution, which was subsequently adopted by the International, that as many states as possible make every effort to attend this Congress and get in our plug right there to increase fish, wildlife and recreational benefits. There was such an

unusual aura of agreement as to the course watershed development should take that there was little cause for argument this year. It is to be hoped that the policies expressed will receive wide application in the field, the only place where their effect can really be felt. With that as a preliminary, we will proceed here with the panel. The one thing that I wanted to try and bring out in such a panel was a good analysis of just what has been accomplished in the watershed projects and programs of benefit to fish, wildlife and recreation, and to do that I could think of no one better than Wade Hamor, who is the biologist for the midwest area of the Soil Conservation Service of Lincoln, Nebraska. Wade.

MR. WADE HAMOR (Biologist, Soil Conservation Service, U.S. Dept. of Agriculture, Lincoln, Nebraska): Thank you, Tom. I have changed the title of this paper just slightly to make it agree with what was said in the paper. This says,-

AN ANALYSIS OF FISH AND WILDLIFE AND RECREATIONAL DEVELOPMENTS IN WATERSHED PROJECTS IN THE MIDWEST

This paper presents an analysis of the small watershed program with special reference to the use of measures that favor fish and wildlife and recreation. It gives data on the kinds and amounts of these measures being planned and applied under the program. The information applies only to the eleven states designated as the Midwest Region by the Soil Conservation Service. Those states are: North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan and Indiana.

The small watershed program, also called the PL-566 watershed program, came into being under the Watershed Protection and Flood Prevention Act (Public Law 566, 83d Congress, 1954). It is a watershed approach to soil, water, and related resource conservation problems. The program is administered by the Soil Conservation Service. Individual watershed projects are locally initiated, directed, and maintained by an organization of watershed sponsors. The sponsors are assisted, technically and/or financially, by the Soil Conservation Service, the State Conservation Departments, the Fish and Wildlife Service, and by other agencies and organizations.

An amendment to the Act in 1956 created the multiple purpose concept of watershed development. The amendments of 1958 and 1962 added fish and wildlife and recreation to the multiple purposes of the program, and made these purposes eligible for cost-sharing with PL-566 funds. However, the amendments limit the use of measures applied to satisfy these purposes to an undertaking for the conservation, development, utilization or disposal of water. In other words, measures applied specifically for fish and wildlife and recreation must be water related.

Today, the small watershed program may combine flood prevention or agricultural water management (including irrigation and drainage) with one or a combination of the following: Recreation, fish and wildlife, municipal and industrial water supply, and pollution abatement. Single purpose developments for fish and wildlife or recreation are ineligible measures. They must be tied to flood prevention or agricultural water management. The extent and kind of a project planned for a watershed depends, to a large degree, upon the needs and desires of the people living within the watershed.

A watershed project is composed of two parts: (1) The land treatment phase, and (2) the structural phase. The completed work plan for a project outlines the problems, needs, and planned solution to those problems and needs through the installation of structural and land treatment measures.

The land treatment phase is of major importance in conserving moisture, reducing erosion, and enhancing the habitat of fish and wildlife. PL-566 funds are made available for accelerated technical assistance to landowners for land treatment. They are not usually available for cost-sharing on the conservation practices needed for proper land treatment. However, cost-sharing money is available for this purpose through the Agricultural Conservation Program.

Under the structural phase there are three kinds of developments or improvements related to fish and wildlife and recreation that are eligible for cost-sharing with PL-566 funds. They are:

1. A Public Fish and Wildlife Development. By definition, this category includes the creation or improvement of habitat or facilities primarily for the preservation, production, or harvest of fish and wildlife. This may include the creation or improvement of habitat solely for the preservation of fish and wildlife.

2. A Public Recreational Development. This category includes the creation or improvement of an area for the enjoyment of any or all forms of outdoor recreation that are based on use of or proximity to water in reservoirs, lakes, or streams. Fishing and hunting may be among the uses planned for a Public Recreational Development. NOTE: Where the primary use of a development will be fishing or hunting, it may be considered either a Public Recreational Development or a Public Fish and Wildlife Development in accordance with the desires of the sponsoring local organization.

3. A Water Resource Improvement. This may be a reservoir; a lake level control structure; stream or channel rectification or stabilization; or a similar improvement for water-based recreational or fish and wildlife purposes where provisions are made for public access or use.

The number of Public Fish and Wildlife Developments and Public Recreational Developments is limited by the acreage in any one watershed project. A project having up to 75,000 acres is eligible for one such development. It may be either a recreational development or a fish and wildlife development. A project having from 75,000 to 150,000 acres can have two developments, one of each kind or two alike. Those projects of over 150,000 acres are eligible for three developments. The number of Water Resource Improvements is not limited in any one project when Federal cost-sharing is not provided for land rights or minimum basic facilities. In other words, if cost-sharing is for construction costs alone, their numbers, per project, are not limited, except by fund restrictions and a clearly demonstrated need for the improvements. The term "minimum basic facilities" is defined as those facilities needed for public health and safety, access to, and use of the recreational or fish and wildlife facility.

Where damages to fish and wildlife habitat would occur as a result of the watershed project, mitigation with the use of Public Law 566 funds can be used for (1) modification of the offending measure, (2) modification of other measures applied within the project area to create or improve the kind of habitat damaged, or (3) applying a measure solely for the purpose of creating or improving the kind of habitat damaged. Such measures are intended to replace the damaged habitat or significantly lessen the damages to that habitat, but not to enhance it. Enhancement is provided for in the categories previously discussed.

Presented in the following tables is an analysis of Public Fish and Wildlife Developments and Public Recreational Developments in the small watershed projects in the Midwest. Because there were so few Water Resource Improvements applied or planned, and because they serve fish and wildlife and recreation in the same capacity as the Developments, their numbers are included with the Developments. The information is segmented into three categories or stages of planning and applying project work plans.

The three categories are: (1) Completed projects; that is, those projects on which all structural and land treatment measures as outlined in the work plan are now on the land; (2) projects in the operations stage or authorized for operations. In this category, the work plan is completed and construction and accelerated land treatment are now being applied or are ready to be applied; and (3) projects currently being planned or authorized to be planned. The preliminary investigation work is completed and the project is considered feasible. The work plan is being prepared or will be prepared.

A fourth category could be added but would have little meaning for us here today. That category is watershed projects for which applications have been submitted by the local people, but on which little or no work has been done. They may be considered, at least in part, as the backlog of work that needs to be done. They are not a part of the information given in the tables.

Table 1 PL-566 Projects Completed

| | |
|---|---|
| Number | 21 |
| Total acres | 305,147 |
| **Structural Phase** | |
| Number of new impoundments | 47 |
| Acres of new water | 524 |
| Number of Public Fish and Wildlife Developments | None |
| Acres of Land | None |
| Acres of Water | None |
| Number of Public Recreational Developments | None |
| Acres of Land | None |
| Acres of Water | None |
| **Land Treatment Phase** | |
| Acres of new wildlife habitat development | 512 |

Table 1 shows no Developments for fish and wildlife or recreation because the projects were completed prior to the time amendments to the Act authorized such Developments, or because the sponsors, for one reason or another, did not or could not include them through work plan amendments. The reasons may have included lack of finances, lack of interest, or other.

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Table 2 PL-566 Projects Authorized for Operations

| | |
|---|---|
| Number | 133 |
| Total acres | 7,307,004 |
| **Structural Phase** | |
| Number of impoundments | 841 |
| Acres of new water | 29,342 |
| Number of Public Fish and Wildlife Developments | 10 |
| Acres of Land | 829 |
| Acres of Water | 1,221 |
| Number of Public Recreational Developments | 13 |
| Acres of Land | 3,513 |
| Acres of Water | 2,078 |
| **Land Treatment Phase** | |
| Acres of new wildlife habitat development | 15,110 |

Table 3 PL-566 Projects Authorized for Planning

| | |
|---|---|
| Number | 78 |
| Total acres | 3,089,975 |

Structural Phase

| | |
|---|---|
| Number of impoundments | 270 |
| Acres of new water | 12,959 |
| Number of Public Fish and Wildlife Developments | 2 |
| Acres of Land | 711 |
| Acres of Water | 1,967 |
| Number of Public Recreational Developments | 17 |
| Acres of Land | 5,632 |
| Acres of Water | 5,605 |

Land Treatment Phase

| | |
|---|---|
| Acres of new wildlife habitat development | 3,921 |

We expect many of the project work plans now in this category to be amended to include Developments for fish and wildlife and recreation before they are approved for operations. It is estimated that by that time these projects will include larger numbers of Developments than given in Table3.

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Table 4 Totals for PL-566 Watershed Projects Completed, Authorized for Operations and Authorized for Planning

| | |
|---|---|
| Number | 232 |
| Total acres | 10,702,121 |

Structural Phase

| | |
|---|---|
| Number of impoundments | 1,158 |
| Acres of water | 42,825 |
| Number of Public Fish and Wildlife Developments | 12 |
| Acres of land | 1,540 |
| Acres of water | 3,188 |
| Number of Public Recreational Developments | 30 |
| Acres of land | 9,145 |
| Acres of water | 7,683 |

Land Treatment Phase

| | |
|---|---|
| Acres of new wildlife habitat development | 19,543 |

Table 5 Averages for PL-566 Watershed Projects
Authorized for Operations and Authorized for Planning

| | |
|---|---|
| Acres per project | 49,275 |
| **Structural Phase** | |
| Number of impoundments per project | 5 |
| Acres of water per impoundment | 38 |
| Number of Public Fish and Wildlife Developments per Project | 0.06 |
| Acres of land per Development | 128 |
| Acres of water per Development | 266 |
| Number of Public Recreational Developments per Project | 0.14 |
| Acres of land per Development | 305 |
| Acres of water per Development | 256 |
| **Land Treatment Phase** | |
| Acres of new wildlife habitat development per Project | 90 |

Table 5 shows that there is one Public Fish and Wildlife Development for every 17 watershed projects, that there is one Public Recreational Development for every 7 watershed projects, and that one in five watershed projects has either a Public Fish and Wildlife Development or a Public Recreational Development. You will remember that it was stated earlier that at the option of the local sponsors, a Development, if used primarily for fishing and hunting, may be shown either as a Public Fish and Wildlife Development or a Public Recreational Development.

There are 298 applications for watershed projects on which little or no work has been done. The land area involved amounts to slightly more than 27,000,000 acres. This, as mentioned before, is a part of the backlog of work to be done.

In closing I want to emphasize that interest in developments for fish and wildlife and for recreation is growing rapidly. The local people involved in watershed planning are today much more aware of the recreational as well as the economic values inherent in the development of these resources than they were only a few years ago. Improved arrangements for financing the desired developments have also been made. In general, it appears that within the small watershed program, fish and wildlife and recreation based on fish and wildlife will, for many years to come, enjoy increasing public attention. Thank you.

MR. EVANS: Thank you, Wade. I now call on D. John O'Donnell, Co-ordinator of Watershed Programs, of the Wisconsin Conservation Department to speak to us on "The State Look at Watershed Projects". John.

MR. D. JOHN O'DONNELL (Wisconsin Conservation Department):

THE STATE LOOK AT WATERSHED PROJECTS

The states are being caught in the crossfire, between the Federal programs, with funds, and the local "Grass Roots", with hope of a better economy.

The state responsibilities for the land, water and people resources are usually subjugated by these programs with funds, personnel, a broadened authority and the almost annual creation of additional, large-scale programs.

Whether this trend is by some special design or by sheer coincidence is not really important. The fact is, this condition exists.

Most states cannot compete with funds and personnel but can compete by asserting their responsibilities, cooperating with the local people resource, and actively participating in planning and implementation of "Local Programs". Herein lies the opportunity for fish and game and recreational values.

Kentucky, for example, since 1960, has provided $68,000 a year to the Soil Conservation Service for an additional watershed planning party. To 1963, some 140 applications were certified to SCS and 18 approved final work plans had been put under construction. They have a one-million dollar fund for the "chain of lakes" program utilizing highway fills. The program is under the Department of Natural Resources, Highways, Parks, and Fish and Wildlife Resources. Nineteen lakes of 5 to 800 acres are complete, thus far, with 2,485 acres of water.

Twenty-four states are now financing watershed planning, with California and Oklahoma the most active with approximately three-hundred-thousand dollars each year, per fiscal year.

California has a full watershed planning party and is assigned projects to plan completely. The SCS is assigned additional projects.

Other states assist in variable amounts.

Wisconsin assists with $265,000 each two years for multiple use pools.

Illinois, Indiana, Iowa, Kansas, Minnesota, and Nebraska assist for investigations, planning, and works of improvement.

Ten states, including Indiana, Kansas and Nebraska, appropriate 72 percent of the state funds available nationally for watershed planning.

These states have submitted 35 percent of all applications.

Thirty-seven percent of these applications have been approved for planning, and 39 percent approved for operations.

These states have received 53 percent of the watershed construction funds and 77 percent of the floodwater retarding structures completed nationally.

It is apparent that the states must cooperate or lose position.

The success of any small watershed project depends on land treatment and land use adjustments.

These measures form the foundation, for it is on the uplands that the watershed problems originate.

A project is not a group of structures spread out across the landscape.

Structures cannot be fully effective unless the land measures are applied not merely planned.

The goal must be 100 percent applied, not 50 percent planned or applied.

Too many projects are considered "completed" which fall far short on sound land use and treatment.

In fact, too often the land treatment in a watershed project is a side issue with a low priority.

The 50 percent minimum of land measures applied or planned is used as a maximum goal.

The ideal Watershed Total Resources Work Plan would consider all problems and all resources. All interests and all agencies would be represented.

The plan would be phased for the first 5 years of effort to be on intensive land treatment measures application, including, not only the cropland but forestry, fish and game habitat, small detentions (farm pond size), gully checks, and other measures, as well.

Then a 5-year structural program would follow, with fish and game habitat and recreation being incorporated and developed.

What is the Wisconsin approach to watershed development?

Wisconsin technicians have advocated a Total Resource planning and development approach on a Watershed Basis since 1947.

In 1950 - The Wisconsin Conservation Commission approved a Watershed Management program and provided a budget.

A paper was presented to the American Fisheries Society on "Watershed Management and Fish".

In 1951 - A full issue of the Wisconsin Conservation Bulletin was concerned with "A Report to the People on Watershed Problems."

In 1953 - A statement of watershed cooperation (4-Agency Agreement) was signed by the Soil Conservation Service, Wisconsin Conservation Department, University of Wisconsin Agriculture Extension and State Soil Conservation Committee.

In 1954 - On August 4, the President approved the Watershed Protection and Flood Prevention Act - Public Law 566.

In 1955 - The Wisconsin Conservation Commission adopted the "Policy on Watershed Management".

In 1956 - The first Department "Liaison Coordinator" was appointed on a watershed project.

In 1959 (May) - The Conservation Commmission approved the revised "Statement of Watershed Development Cooperation". This new Six-Agency Agreement replaced the Four-Agency Agreement.

In 1961 - The Wisconsin Legislature passed the 50-million dollar Outdoor Recreation Act which included cost sharing with local sponsors on developing recreational lakes under PL-566.

In 1962 - The Agricultural Act of 1962 brought recreation into the watershed program.

In 1963 - The local Forester was designated the Department Liaison on each watershed. He is also responsible for locally coordinating the overall Department program on the PL-566 watersheds to which assigned.

In 1964 (February) - A staff member of the Research and Planning Division was assigned as "Coordinator of Watershed Programs". He is responsible for coordination of all Department watershed planning and development activities. Also, he is the official Department state level representative with all other agencies and groups.

(March) - A Procedural Guide for Interagency Cooperation was issued. It covers responsibilities and lines of communication in PL-566 watershed projects and other programs.

In 1965 - The Procedural Guide was modified for Department use to assign definite responsibilities to various divisions.

There was established a Watershed Analysis Group (WAG), composed of Division Chiefs or representatives, reponsible for analyzing applications, reports, work plans, construction plans and other items, and to develop a unified recommendation for Department position.

The Wisconsin approach, then, is one of maintaining close contact and cooperation with all agencies and groups with a planned procedure. Also, to continually stress Total Resource Planning and Development. Thank you.

MR. EVANS: Thank you, John. I now call on Mr. Warren Nord, Supervisor, Branch of River Basin Studies, Bureau of Sport Fisheries and Wildlife, U.S. Department of the Interior, stationed in Minnesota, to speak to us on the Bureau Look at Watershed Projects. Warren.

## THE BUREAU LOOK AT WATERSHED PROJECTS

MR. WARREN NORD, (Supervisor, Branch of River Basin Studies, Bureau of Sport Fisheries and Wildlife, U.S. Dept. of the Interior, Minnesota):

Thank you, Tom. Yesterday, Woody Fleming in his report on Federal-State Relations expressed the need for a closer working relationship between the States and equal numbers of people on these committees. This goes right down the line. You have to get the people involved in a particular problem to get together and really get at the meat of it.

A brief informational pamphlet[1/] prepared by the Watershed Planning Division in May 1959 opens with the statement, "Wherever you live, you are within a watershed. Your farm, ranch, home on a town lot, or your business in the city are all within the natural boundaries of some watershed. All the lands and waters of the nation are bounded by natural drainage divides."

Think of that for a moment. It means that every acre of wildlife habitat in the Nation is within a watershed and therefore potentially a part of a Small Watershed project. Is it any wonder that projects under PL-566 are important from the standpoint of fish and wildlife and recreation? The need for ways and means to get recreation and fish and wildlife values into the Small Watershed Program is self-evident.

Let's review some of the basic considerations of the program very briefly.

Several laws relate to the inclusion of fish and wildlife measures in watershed projects. Public Law 85-624 amends both the Fish and Wildlife Coordination Act and the Watershed Protection and Flood Prevention Act (P.L. 566). To the latter it adds Section 12 authorizing the Fish and Wildlife Service to prepare reports and recommendations concerning the conservation and development of fish and wildlife resources in the watershed projects.

Public Law 85-865 amends Section 4(2)(A) of the Watershed Protection and Flood Prevention Act by authorizing technical and financial assistance

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1/ Small Watershed Projects Under the Watershed Protection and Flood Prevention Act, (PA-392). SCS-U.S.D.A. May, 1959.

for fish and wildlife development (enhancement) in connection with PL-566 projects. Watersheds Memorandum SCS-40 further explains this amendment.

There appears to be no dearth of sources of technical and financial assistance for the program. A few of these include the Soil Conservation Service; Cooperative Federal-State Extension Service: Agricultural Conservation Program cost sharing; credit from the Farmers Home Administration; assistance in fish and wildlife development from the Fish and Wildlife Service and State fish and game agencies; technical cost sharing, and credit assistance from the U.S. Department of Agriculture authorized by the Agricultural Act of 1962 for income-producing recreation developments on rural land; the Cropland Retirement Program; Resource Conservation and Development projects; and the Rural Renewal Program among the many.

In 1960 the Bureau of Sport Fisheries and Wildlife published a pamphlet describing ways of developing better hunting and fishing on Small Watershed projects.[2/] More recently the Bureau of Outdoor Recreation of the Department of the Interior published a booklet titled, "Federal Assistance in Outdoor Recreation"[3/] listing sources of assistance not only from Interior but from state and other Federal agencies as well.

The United States Department of Agriculture in turn has published numerous pamphlets and brochures on this subject. 4/ 5/ 6/ 7/ And these are * but a few of the many available on the subject. Too, the Watershed Protection Handbook of the Soil Conservation Service treats in great detail the policies, procedures and instructions relating to the 566 Program.

In line with these guidelines each State conservation department either follows general basic procedures to conform with the Soil Conservation Service programs and schedules or has developed variations to meet their specific needs. Some states, for example, Illinois, Wisconsin and Minnesota, have developed rather elaborate methods of coordination with the Soil Conservation Service and the local sponsors, as well as with our Bureau. This is commendable but it sometimes results in problems, not so much in the State-SCS relationship but in the relationship of these agencies with our Bureau. This is not intended to be critical, as we are well aware of the amount of effort that has gone into the development of such procedures. However, standardization of project investigations and reporting is desirable if it can be attained.

With all of the aforementioned machinery at our disposal, the solution to getting fish and wildlife recreation built into the Small Watershed Program should be as easy as "falling off a log". Perhaps it would be if we could

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2/ Circular 100, Better Hunting and Fishing in Small Watershed Projects. Bureau of Sport Fisheries and Wildlife, U.S.D.I. 1960.

3/ Federal Assistance in Outdoor Recreation, Bureau of Outdoor Recreation, U.S.D.I. 1964.

* (References appear on next page.)

work more effectively with those who have stewardship of the land--and we should not forget that Small Watershed projects are governed locally and mostly involve private lands, even though Federal money pays most of the cost.

Irving K. Fox of Resources for the Future[8/] states that, "technical economic progress has surpassed that on the administrative side." He suggests "new organizational arrangements for deciding and implementing governmental policy for water resources." The formation of a Joint SCS-FWS Committee on Watershed Development in Washington, D.C. in 1964 was a step in this direction. In part, its function is to resolve differences cropping up from time to time in the SCS-FWS approach to watershed planning. Problems considered by this group extend beyond the Federal aspects. State and local problems also are considered. In Small Watershed projects, recommendations by conservation interests for specific fish and wildlife measures must be adopted by both the local sponsors and the Secretary of Agriculture prior to their incorporation in work plans.

Let's face it--the problem is one of producing and maintaining a public resource on private lands. If the sponsoring group is recreation or wildlife-oriented, conservation and recreation programs can be "in like Flynn". If not, there is nothing to insure acceptance of our proposals in the Small Watershed "package"--regardless of the merits of our case.

From the standpoint of recreation and fish and wildlife, two factors appear to be of major concern in the accomplishment of successful watershed planning. First is the need to consider primary agricultural objectives in the light of conflicting needs. By and large, conservation interests recognized in the watershed program the potential for benefits to wildlife. Such benefits, however, must be related to a balanced program of land and water management designed to improve the farmer's lot while imposing the minimum of adverse effects on the land itself. In fact, many PL-566 practices are designed to "improve on nature", especially in the area of erosion control and water utilization. If I am not mistaken, these were among the tenets on which the Soil Conservation Service was first organized.

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4/ Outdoor Recreation in Small Watershed Projects. SCS, U.S.D.A. May 1962.

5/ Watershed Work on the Farm.ASCS, U.S.D.A. May, 1962.

6/ Agriculture Information Bulletin #175, More Wildlife Through Soil and Water Conservation, SCS, U.S.D.A. 1958.

7/ Watershed Program Aids Everyone, How Are Watersheds Planned? U.S.D.A. April, 1962.

8/ Irving K. Fox, New Horizons in Water Resources Administration. Resources For the Future Inc. Reprint #51, April, 1965.

Many cases of benefit to wildlife and conservation can be illustrated. However, these accomplishments should not be used as a smoke screen for practices that never have and never will be compatible with good conservation practices for either soil or wildlife. One of the greatest offenders is drainage. Since Mr. Stuart is covering this phase of the program in more detail, I will confine my remarks to a few simple observations.

We in the Bureau of Sport Fisheries and Wildlife have repeatedly made public expression of our acceptance of certain types of drainage as having a place in the agricultural program. Improving the drainage of agricultural lands having a long crop history need have little adverse effect on the existing status of wildlife. Do not misconstrue this statement as a weakness in our approach to this problem. Instead, let me restate and re-emphasize that our Bureau is flatly opposed to much of the current program for farm drainage, whether it be in the prairie pothole states or in the hardwood bottomlands of the South-east. Thus, when drainage is a major factor in a project where Federal technical or financial assistance is involved, it follows that we will press for compensation of any significant losses to wildlife resulting from this practice. We will also recommend improvement of conditions for wildlife in project plans where feasible.

Secondly, there must be greater recognition on the part of project sponsors regarding their responsibility to bear part of the financial burden for compensatory measures for damages incurred to fish and wildlife because of project construction. Improved communication is needed in this area. It is generally easy to sell the primary features of a project. It is more difficult to convince project sponsors of their obligation to include compensation measures for project-occasioned losses to wildlife.

If agricultural, wildlife and recreational interests are to play the same game in the same park, they must abide by the same rules. On occasion, these rules will require an umpire's decision--and we now have the machinery for such decisions in the Joint SCS-FWS Committee mentioned earlier. This Committee has met on several occasions to consider changes in policies and procedures to better meet the objectives of both groups.

Perhaps it is time for all participants in watershed development to explore new methods of communication to insure greater understanding of the multi-purpose approach. This will help instill a desire on the part of project sponsors to assume their just share of responsibility in project planning, construction, and operation. As a start, let me suggest more personal contact with the individual project sponsors. This may be asking the impossible, in view of the limitations in numbers of planning personnel and the rapidity of growth of the Small Watersheds Program. Regardless, there is no substitute for communications through personal contact in attaining better understanding of the responsibilities as well as the benefits available through watershed planning. When program participants recognize the responsibility-benefit relationship the possibility for inclusion of recreation and fish and wildlife developments in the Small Watershed Program will be materially enhanced.

The Soil Conservation Service is in many cases attempting to do its part by insisting on sponsor compliance with certain recommendations for fish and wildlife and recreation as a pre-condition to reaping project benefits. In at least one watershed in Minnesota the sponsors have been requested to protect existing marshes through easement as a pre-requisite to channel improvements.

One of the first assignments I had in the conservation field was that of a biologist and liaison officer for the Corps of Engineers. My job was to effect improved relationships between the Corps and fish and wildlife interests. I was one of the first biologists ever to work for the Corps--indicating a realization on their part that they needed someone who could speak the language of fish and wildlife people--an interpretor, so to speak, who could discuss areas of conflict in water development projects without the brick bats usually associated with such discussions. The Corps now has a number of biologists in its employ. The Soil Conservation Service also has numerous biologists functioning in a similar manner. Many of these men have done yeoman service in developing policies and procedures of recognized value to fish and wildlife.

Gentlemen, it is up to us as conservationists, regardless of employment affiliations, to unite in furthering really comprehensive planning in this Small Watershed Program. It is a going concern. The single-purpose approach has got to go. It will not be possible for each of us with our more or less specialized problems to obtain 100 per cent compliance in our recommendations. It is incumbent on each and every one of us to unite in a common effort to effect a solution to improved communication with the man in the driver's seat--the custodian of the land. With the support of these people the Watershed Program can become one of the major sources of benefits to wildlife and recreation in the field of water management. Thank you.

MR. EVANS: Thank you, Warren. Your opening statement, that every acre of the United States and everyone of our resources is potentially under the control of a local governing body raises a question. Can we afford not to help and guide these local governing bodies? One of the problems has been draining of potholes and marshes under the watershed projects. North Dakota is primarily concerned with this program, so I'd like to call on Russell Stuart to discuss this problem. Russell.

MR. RUSSELL W. STUART (Commissioner, North Dakota Game and Fish Department, Bismarck, N.D.): Thank you, Tom. I appeared on the program of the National Wildlife Federation a year ago on P1-566. I have mellowed some towards it. The cooperation of the Soil Conservation Service and game and fish departments has been considerably improved. In many of the watersheds we have several detention drains. Some of these could be developed into good fishing areas. Public access should be provided to all of these detention drains.

## DRAINAGE AND THE SMALL WATERSHED PROGRAM

Small watershed projects under Public Law 566 will have more impact on our fish and wildlife resources than any other water program because of the large number and total acreage involved.

As of March 1, 1965, a total of 2,247 applications for projects had been received in the Washington office. These projects would affect 159,924,500 acres, an area roughly four times that of North Dakota, and of course the majority of this land is in private ownership. Of the 2,247 applications received, 1,065 involving 75,502,000 acres have been authorized. With the exception of Alaska, every state has projects submitted, but the majority of the projects and the large acreages are located in the central United States.

With proper coordination between state and federal agencies, these watershed projects could be a definite asset to fish and wildlife production. Many of the controversies could be handled on a state or local level, and other problems could be handled by minor amendments to Public Law 566.

This discussion will deal primarily with drainage problems that have arisen in projects located in the small wetlands areas of Minnesota, South Dakota and North Dakota. These areas are important for waterfowl production. Most of the problems arise in projects lying in or adjacent to the Red River Valley in western Minnesota, northeastern South Dakota and eastern North Dakota. Portions of these watersheds have a high gradient until they reach the valley floor, where the gradient becomes very low--thus causing water to spread and drain very slowly from these lands. In order to accelerate the removal of this excess water, a considerable amount of channel straightening and / deepening is incorporated in the projects.

This channelization not only drains the excess water from the low-lying agricultural lands, but also enables the private landowner to drain natural wetlands by providing an outlet that heretofore did not exist. This on-the-farm drainage has occurred either with federal cost-sharing or by the landowner's assuming all the costs. In either case, wildlife becomes the loser. Incidentally, these small wetlands are valuable to upland game species and whitetailed deer as well as waterfowl.

(Series of 5 slides showing drainage in the Wild Rice Creek watershed).

In North Dakota, cooperation between the watershed planning party and the Game and Fish Department has improved considerably in the last year and a half. This has been brought about by the holding of joint meetings (between the planning party and Game and Fish personnel) once a month, to discuss the watershed plans. These meetings have resulted in modifications of several watershed plans by removing or modifying of features that are particularly detrimental to wildlife.

The watershed planning party often has problems in its attempt to mitigate wildlife losses because of the indifference or antagonism of some Soil Conservation Service field personnel toward wildlife values. This is also true with respect to many of the landowners involved. There is a definite reason for this, and that is the fact that drainage has been popular with the landowners and thus is a practice that the work unit man could easily sell to his cooperators. The fish and wildlife interests were instrumental in stopping or slowing down this practice, and a natural resentment toward fish and wildlife people has developed on the local level.

As mentioned earlier in the report, many of these problems can only be solved by amendments to Public Law 566. Listed below are suggested amendments that would strengthen the law and give wildlife values more consideration:

1) Allow federal monies to be used for the development of water areas.

2) Bring the cost-sharing percentage for wildlife mitigation and enhancement up to the same percentage as that allowed for flood control purposes.

3) Prohibit all federal cost-sharing for drainage of natural wetlands. This would include technical assistance.

4) Make it prohibitive for an individual landowner to run lateral drains into channel structures provided by the project.

Wildlife people could improve the program by:

1) Setting up guidelines for the watershed planning party to enable them to differentiate between a natural wetland and lowlands that may have periodic flooding problems. This is necessary especially in areas of erratic rainfall, because periods of drouth will eliminate many natural water areas. Guidelines were established in North Dakota in 1948 and should be improved.

2) Exhibiting more interest in the watershed program by attendance and participation at the National Watershed Congress as well as state soil conservation meetings. Fish and wildlife entirely depend on land usage. Should work with agriculture departments.

3) Capitalizing on the fact that it is becoming more difficult to get a farm program through Congress by pointing out to agriculturists that the fish and wildlife interests can be a potent ally in getting the desired farm legislation and appropriations through Congress. Individual land owner would have to pay for Soil Conservation Service work. Work with agriculturists in designing programs that would be of benfit to both. The ecologist should be a member of the planning party.

MR. EVANS: Thank you, Russ. Progress is quite notable. Rather than being only critical, they all are now striving to find the answer to these knotty problems. This was essentially the theme of the last Watershed Congress. Has anyone any questions?

MR. CHARLES LLOYD, (Wisconsin): We have heard more comments about channelization. The question is why is it so necessary to channelize all of these waters?

MR. HAMOR: It isn't always necessary to channel. It is possible to get structures. The sportsmen have other ideas. Frequently it is too late to get structures. We want structures if we can get them.

MR. LLOYD: I would like to ask Mr. Stuart a question. In your meetings with the Soil Conservation Service have you had them (channelization) removed, or what other changes were made?

MR. STUART: We may have had the channel changed a little bit. If you can modify the route which it's taking, we can do that. We are losing some very fine white-tailed deer land worth $200 an acre from an agricultural standpoint. We are insisting that these oxbows be retained. The landowners are bucking, but the State Soil Conservation Service agency is standing firm on it.

MR. EVANS: We are taking the same approach. One project has 50 miles of this channelization. We are saving these oxbows to maintain the habitat that is there.

MR. TED SHIELDS (Minnesota): We were informed for the first time at a regional meeting of the Soil Conservation Service policy. Regardless of the cost, they would spend five times as much to put in small structures rather than channel changes.

MR. HAMOR: We are still on a cost-benefit situation. We can't buck that part. You could put the structures in the upper part of the watershed as long as the cost-benefit is right.

MR. SHIELDS: If the cost-benefit ratio is too high where you have a physical capacity, would you then have the authority to channel?

MR. HAMOR: I suggest that you talk to Herb Fleck, State Conservationist.

MR. EVANS: It appears then that the policy is that so long as the cost-benefit ratio is right it is to go to the higher cost work if it is less damaging to wildlife.

MR. LLOYD: Are the wildlife values considered in the cost-benefit ratios?

MR. HAMOR: It is included in some instances.

MR. STUART: When it is flood control, it's 100 percent federal. When it comes to wildlife environment, the best you can do is 50 percent.

DR. GUTERMUTH:

If I might have a minute to make a speech. One of the main reasons I decided to come to this meeting was because I was delighted to see that you had put this very important topic on the program. I should like to see PL-566 looked into to get the greatest potential benefit that would come from a program of this kind. I am of the opinion that the National Watershed Congress was formed to go to work immediately to get this program effected, to get these great benefits from the program. For five or six years I served as Chairman of this Congress. Dan Poole has worked very hard on this program, throwing the doors open to fish and wildlife. We got a few amendments to the law. We have another Watershed Congress coming up. Poole says nobody is interested in it anyway. He gave up the chairmanship, but is still on the committee. Seven States were represented at Sioux City, because only a few fish and game people happened to be near. We maintained these field trips. We have been trying to get Wade Hamor to see what is happening. I spoke to Tom Evans who has come every year. We get nowhere. The next meeting is scheduled for May in Oklahoma City. I hope to see you at the National Watershed Congress there.

CHAIRMAN MOORE: Thank you, Pink.

We now have a coffee break, and after that we shall hear from Patrick Healy, of the Job Corps, in Washington.

COFFEE BREAK.

CHAIRMAN MOORE: The next item on the program is a paper by Mr. Patrick Healy. Mr. Healy, Director, Community Relations, of the Job Corps is responsible for choosing sites near communities which wish to have a close relationship with Job Corpsmen and the Job Corps centers, and for developing strong and continuing relations between Job Corps centers and the communities near them. Mr. Healy has been with the Job Corps program since the organization of the President's Task Force on the War Against Poverty, and was, until recently, in charge of planning and administering the Job Corps Conservation Centers located on Federal lands.

He was born in Chicago, Illinois, and received his A.B. degree (1949) and M.B.A. (1951) from Harvard. Prior to joining Government service he was Director of Media Relations and Planning for Young & Rubicam, Inc. in San Francisco.

Mr. Healy is going to speak to us this morning on "The Economic Opportunity Act in Conservation and Recreation Programs".

MR. PATRICK HEALY (Director of Community Relations, Job Corps, Washington, D.C.):

As a newcomer to the world of conservation, the Job Corps is honored, as I am, to have been asked to tell such a distinguished group of conservation and recreation experts about its program.

In a sense the Job Corps Conservation Center program is a bridge between conservation and recreation; it can be, too, the bridge between the conservation of human and natural resources.

Some have said that conservation as an idea and a cause has suffered between the days of the CCC and the Job Corps. After all, they say, at least the word conservation was in the name of the program then. At least, then, almost all the effort of almost all the young people was directed toward the conservation of natural resources. In the Job Corps only part of the program is concerned with conservation. And, yet, I suggest to you that it is the Job Corps which can have the greatest effect on conservation of the two programs; that it is the Job Corps that has the potential for preparing both rural and urban communities for the world of the future when neither natural nor human resources may be able to survive without each being used to develop the other.

In the days of the CCC the United States was a predominately rural society. The young men of those days needed a job and needed to acquire some self-respect as young men do today, but a much smaller percentage of them, then, needed to see the outdoors and to acquire a feeling for the importance of wildlife and natural beauty. A great many of them knew about these things because they had grown up among them.

Today's young people have a different relationship with the land and the water. Many of them live in congested urban areas, others in isolated rural areas where transportation of any kind is a luxury, and where the people are poor because the land is poor.

How do the problems of these endemic poor concern you? They concern you because one of the many happy results of the Job Corps and the War on Poverty will be to open up to poor young peole, their parents, and their children the potential for the good life; and, most assuredly, for seeing and using our nation's public lands and recreational areas. To effect this introduction of the Negro, the Puerto Rican, the Appalachian White to the natural resources of America will be a major problem and rewarding challenge to all of you in the years to come.

I mentioned earlier that the Job Corps could be the bridge between conservation and recreation and between the development of human resources and natural resources. Of course, the bridge already exists and you have helped to build it. In recent years, more public lands are evaluated by those who manage them for their many potential uses. They know that as the unslaked thirst for recreation increases, intelligent planning for more recreation, for more integration of conservation and recreation, must also increase at the same rate.

The significant point here is that almost all the work effort of the Job Corps Conservation Center Program which, by law, must be no less than 40 percent of the total Job Corps, is directed towards building recreational facilities in places chosen by the Federal Conservation Agencies.

In order to give you some idea of the kind of work that is currently being planned for the Conservation Centers, let's take a look at the two Centers that have been activated in one state - Illinois - Golconda and Crab Orchard. Golconda Job Corps Conservation Center is located in the Shawnee National Forest, in Pope County, with the program being administered with us by the Department of Agriculture. This Center is located 8 miles from the town of Golconda on the Ohio River.

The initial plans call for development of the Indian Flat Recreation Area along the Grand Pierre Creek and Ohio River in Pope County. This work will consist of construction of a boat access tc the Ohio River, roads, trails, parking areas and approximately 35 camp and family picnic units.

The Job corpsmen will undertake two educational and historical projects in this area. The first is the restoration of Illinois Iron Furnace in Hardin County. The Furnace, which is visited by thousands of people each year, has been deteriorating for many years and is in danger of being completely destroyed by normal weathering. It is the last remaining evidence of the old Charcoal Furnaces of Illinois, which supplied the iron for operation of the Cairo Naval Yard during the Civil War. The second project is the development of the Millstone Bluff area. This 10-acre site, rich in Indian history, was inhabited by Indian tribes 5,000 years ago. The corpsmen will develop, in cooperation with university archaeologists, the area so as to preserve it as a historical site and also to make it available to interested visitors. The Tower Rock Recreation Area in Hardin

County will be expanded by the addition of 32 camp sites and 15 family picnic units. Additional needed facilities such as toilets, signs, paths and trails will be completed by the Corpsmen in the Garden of the Gods area, Oak Point camp ground, Bell Smith Springs, Camp Cadiz, and Ohio River Recreation Areas.

I should point out at this time, none of this work is part of the normal program activity of the Shawnee National Forest.

The Crab Orchard Job Corps Conservation Center is being operated by the United States Department of Interior and is located on the 43,000 acre Crab Orchard National Wildlife Refuge in Williamson County, the eastern half of which is administered both for industrial development and wildlife management.

The western half provides facilities for public recreation. There are three major impoundments in this refuge: Crab Orchard Lake, Little Grassy Lake, and Devil's Kitchen Lake.

The Job Corpsmen assigned to this Conservation Center will be responsible for road and ground maintenance of over 100 miles of roads and trails throughout the refuge and 8,800 acres of recreational areas. In addition to the Job Corpsmen involvement in the wildlife habitat development on the closed area of 22,000 acres which covers the east half of the Crab Orchard Lake they will also be occupied in timber management, soil and moisture conservation programs, on approximately 10,000 acres of land. Other projects include the repair and construction of shelters, launching ramps, toilets, picnic tables, fireplaces, signs, roads, trails, boat docks. Again, none, of the work schedules is a part of the normal activity of the wildlife refuge. Similar work programs are being planned and carried out in all the thirty-five currently operating Job Corps Conservation Centers, a number that will probably be expanded to over 70 by September 30, 1965. Two very important aspects of the program in all centers are:-

1. That all Job Corpsmen in these Conservation Centers will have the opportunity to learn the basic job skills in carpentry, plumbing, conservation, the use of hand tools, the operation of motor equipment in addition to the basic education program which will be offered them. New ideas - half-time - interrelationships with work - vocational need - you should develop skills and study.

2. The scheduled Job Corps work in future projects will provide improvements for which there are no regular conservation appropriations.

The Job Corps Conservation Centers Program is now expanding beyond Federal lands. Recently, a Youth Center, located in a forest in California and operated by that state was funded by the Job Corps. Other state-operated centers are anticipated within the next year. In these centers the program will be identical to that on Federal land, except that instead of the Job Corps administering the program together with the Federal Conservation Agencies, they will be administered with the state conser-

vation agencies, like yourselves.

Earlier, I mentioned the need for viewing conservation of human and natural resources as an interrelated problem. It is a cliché to say that human beings are our most important natural resource - that if they are not "conserved" then it won't avail our society much if its public lands are conserved. On the other hand,if the public lands can be developed, and, in their development, young men can be trained not only to do a useful job but to appreciate and care for those lands, then we will have begun to solve a part of two problems, theirs and yours, with one solution. I don't want to pretend that the Job Corps Conservation Center program has been easy to start, nor that some six months after the commencement of our operations that we have all or most of our problems solved. We are working with a population that has consistently failed, that comes from impoverished neighborhoods, indifferent schools and brokenfamilies. But, as of this reading, with over 35 conservation centers in operation, we think the program is a success.

In the first place, young people want to join - over 300,000 have applied. In the second place, over 80 per cent of those young men whom many said not only wouldn't want to join the program but wouldn't stay if they did join are staying, are learning, have made a start toward finding a decent job in a decent life.

Typically, the Job Corps Conservation Centers have from 100 to 200 young men between the ages of 16 and 21, and a staff of approximately 30 to 40. Many members of this staff are trained forest rangers, fish and wildlife biologists and other skilled conservation personnel. The work projects have been planned by them to emphasize the areas of most immediate need, and generally those areas where recreation development is the most needed.

I suggest that this program is a challenge to people like yourselves who are involved in conservation, for people in America, and that this program - the Job Corps and an all-out war on poverty is the first contact, regrettably, often in a lifetime, between the 20 per cent of the American people who are living in below subsistence levels and those of us who really have shared in the promise of American life, and this is a difficult contact in many cases. It will be the first day introduction of a minority group and is now open to many areas where groups have appeared. I can report that it's going very well, that this kind of serious problem that was predicted in this area has not materialized, and that people are welcoming young men regardless of their colour, or creed, as much as any other young person. There is a need here that is being found by members of the Federal conservation agencies, and, now, as we begin, by the other agencies to interpret this progam which is new and different, exciting and challenging to communities near where these centers are going to be and upon which our program has a considerable impact, and we are using for that interpretation members of the conservation agencies who know these communities and who care about our program and can bring the two together. I should mention

that there are two parts of the Job Corps that are not concerned with conservation. One - our large men's center operated by contract to universities or to corporations with a heavy vocational component, often in the automotive field, appliance repair, marine repair, culinary skill, and many of the young people in these centres have started their Job Corps experience in a conservation centre. We also have centers that are operated for women because almost 40 per cent of the drop-offs in the United States are women. They need training too and obviously of a different kind, and we are trying to give that to them in the six women's centers that are now open.

I think that there are many new departures possible in the Job Corps. It is possible to help conservation operations that are blended with vocational and more traditional industrial, vocational occupations. It is possible, I think, to have a large vocational kind of center in an area where satellite camps of some kind are possible where the young people work in conservation. It is certainly possible to have more state-operated centers and I think that all of you, as this program moves, and, in our hope succeeds, for you to help us in some of the areas that need the most study, if conservation is to continue to be an important part of the Job Corps. I think the most important of these areas is to analyze the job market in conservation, so that we can train people for the jobs that are needed. I think also it is important to break down the skills that are exercised in doing conservation work into their components, so that we can explain to young men just exactly where they will be when they have learned their skills, what kind of job they can expect to get.

I have found that working with the Job Corps has been a most exciting and rewarding effort of my life, and I know that all of you who may become involved in it in the future, or see it or hear about it, will feel the same. I am very grateful that you asked me to come up here and tell you about it, and I would be delighted to answer any questions you may have. Thank you.

CHAIRMAN MOORE: Thank you, Mr. Healy. Are there any questions that you would like to direct to Mr. Healy?

MR. GAZLAY (Michigan): In contracting with the state agencies, do you cost-share the facilities if necessary?

MR. HEALY: There are no firm rules on this. In most cases we have not been paying. I think we have been paying a very small percentage of the construction costs and paying the overwhelming percentage of the operating cots. I neglected to mention one other. California isn't the only one. We have a large state-operated - I should say commonwealth-operated - arrangement with Puerto Rico, and this is a considerably different arrangement than the one we have with other states, so I wouldn't think there is any rule about that, although I think we tend to shy away from paying a major part of construction costs.

MR. GAZLAY: Do you have a guide line as to what to do?

MR. HEALY: Yes, we do. I can tell you how to get hold of that if you will see me later.

MR. KING (Wisconsin): Would you tell us something about the neighbourhood youth corps? I think our chances are even greater there for doing some work.

MR. HEALY: Yes. Well, I can tell you the outlines of the neighbourhood youth corps. Let me step back a second. The problem of how, what schools, for what work for young people, needs many solutions, and some of them are provided for by the Economic Opportunity Act. Some young people need a change of environment, and it is for those young people that the Job Corps is designed. Others can make it at home. This is the neighbourhood youth corps. It is administered as part of the Economic Opportunity Act, by the Department of Labour, planned by the state employment services. There are neighbourhood youth corps programs, I guess, in almost every state of the union, and now in hundreds or thousands of communities. At the local level they design the work of the program. When these neighbourhood youth corps programs are planned in an area where there is conservational work, they can make this a component of their program, and I would suggest that the first place to check on this is at the state level where in each state the Governor has a coordinator for the Economic Opportunity Act - a man whose office knows where the neighbourhood youth corps programs are, or going to be, in the state, and where this kind of cooperation between conservation agencies and the neighbourhood youth corps can be arranged. I know that in the far west - no in the midwest, as a matter of fact, where some of you are from - in Wisconsin, neighbourhood youth corps projects were involved in repairing flood damages recently, and I know there is a lot of other conservation work going on too.

CHAIRMAN MOORE: We will take time for one more question, if you have one. (None). Thank you, Mr. Healy. I am sure there are a lot of questions, but they will, I am sure, see you after.

I am going to take the President's prerogative, and also infringe upon Ted's rights, and go ahead with the program and we will probably run over a few minutes. After consulting with the Secretary, here, we are suggesting that we will reconvene at 1:15 p.m. That will give you time to get your lunch.

The next part of the program deals with something that is closer to most of us, "The Commercial Fishery Research and Development Act", or as we call it, the commercial federal aid to fisheries, and Mr. Norris, Assistant to the Director of the Bureau of Commercial Fisheries, was not able to be here, but his assistant, Mr. Robert Balkovic, is here. I am sure he will create some interest, and we will give you an opportunity for a question or two at the end before we adjourn. Mr. Balkovic.

MR. ROBERT D. BALKOVIC (U.S. Bureau of Commercial Fisheries, Washington, D.C.): Thank you, Mr. Chairman. Mr. Norris wanted me to express his regrets at not being with you today. He had looked forward to this meeting. An unexpected crisis in Washington yesterday afternoon precluded his being here today. The crisis is money.

When I looked at some of your faces as I was introduced I could see some of you cringe a little bit, probably thinking to yourselves, "My God, no, not Public Law 88-309 again!" When I think of the trip up this morning from Washington, and perhaps you have heard of this experience that others have had too. The sailor and the Baptist minister were sitting side by side as the stewardess brought the cocktails around. The sailor took a martini off the tray. Then the stewardess passed the tray over to the Baptist minister. He said, "Lady, I would rather commit adultery." The sailor put the martini back on the tray and said "Man, I didn't know I had a choice." So, I don't know if you have a choice here this morning or not, doing anything else. If you have already heard about PL 88-309, bear with me for the next few minutes and we will briefly go through it again.

We in the Bureau of Commercial Fisheries welcome the opportunity to tell you something about this new law which, in my opinion, is one of the most important pieces of fisheries legislation since the passage of the Fish and Wildlife Act of 1956 and, as I said, it is certainly one that has been well propagandized. We are confident that the inland States represented here will benefit considerably from this legislation. We believe it will provide for an acceleration of State efforts into commercial fisheries problems, and we are sure these increased State efforts will compliment our Federal research and development program.

After a long legislative history starting with the 86th Congress in 1960, final action was taken on S. 627 which became Public Law 88-309 on May 20, 1964. Many State and industry people throughout the Nation were helpful in obtaining enactment of this legislation. The House and Senate hearings contain many pages of testimony by some of you in this room. Without your help we would not have this legislation today.

Now, let us review briefly the language of the Act. I should like to quote directly from Section 3(a): "The purpose of this Act is to authorize the Secretary of the Interior to cooperate with the States through their respective State agencies in carrying out projects designed for the research and development of the commercial fisheries resources of the Nation. Federal funds made available under this Act will be used to supplement, and to the extent practicable, increase the amounts of State funds that would be made available for commercial fisheries research and development in the absence of Federal funds."

I should like to amplify the last sentence in the above paragraph since there has been some confusion concerning it. The legislative history of the Act is clear in its intention to stimulate additional effort in research development. The State funds to be used to finance at least 25 per cent of

the cost of research and development projects must be additional funds provided for that project and not funds which have been diverted from some other commercial fishery project. However, we know that some of the States have had problems. The regulations provide an exoeption during fiscal years 1965 and 1966. If a State legislature did not meet for a significant and practicable period of time after the appropriation of funds for Section 4(a) of the Act, it will not be necessary for that State to use new funds to match the Federal contribution during those years. In other words you've got until June 30, 1967, if your State legislature has not appropriatedmatohing funds to take some funds that are now existing and use them as the matching fund. After June 30, 1967 you will be required to provide new funds above and beyond those which you are now using.

Section 3(b) allows two or more States to act jointly in carrying out a project. In this section, the Congress also consents to any compact or agreement between any two or more States for the purpose of carrying out a project. We think this important in some of the midwestern States which have received a minimum of proration that it may be possible for you to work jointly on a project which is of common concern. I think especially of the Great Lakes area - the States of Michigan, Wisconsin and perhaps Minnesota, Indiana and Illinois are thinking about work on the sea lamprey and lake trout problems.

Section 4 of the Act authorizes the appropriation of funds to the Secretary of the Interior to carry out the purposes of this legislation. The major portion of such funds ($5,000,000) would be apportioned to the States to provide the Federal share of the costs of research and development projects. In addition, $400,000 are authorized to be appropriated, which will be made available to the States in such amounts as the Secretary may determine appropriate for the purpose of the Act, provided that preference shall be given to those States in which there is a commercial fishery failure due to a resource disaster arising from natural or undetermined causes. These funds may be used either by the States or directly by the Secretary in cooperation with the States for any purpose that the Secretary determines is appropriate to restore the fishery affected by the failure or to prevent a similar failure in the future. Also, $100,000 are authorized to be appropriated, which will be made available to the States in such amounts as the Secretary may determine for developing a new commercial fishery therein. The resource disaster and new commercial fishery funds do not require State matching monies.

Please note that this legislation did not appropriate funds and we had a battle on our hands. It simply authorized the appropriation of funds during the first fiscal year after enactment and in the four subsequent fiscal years. We were, of course, hopeful that the legislation would be implemented as soon as possible after enactment, but unfortunately only Section 4(b) of the Act was funded in fiscal year 1965, which ended June 30 of this year. These funds ($400,000) which were added to the Interior Department appropriation bill on the Senate floor, were used by the Secretary in the States of Michigan, Minnesota, Wisconsin and Illinois. A determination

was made that a commercial fishery failure existed in the Great Lakes chub industry as a result of the several deaths which were traced to botulism in smoked fish in October 1963. Therefore, all of these funds were used to alleviate the serious situation which existed in this segment of the industry in fiscal year 1965. In subsequent years, such funds as are necessary will be available to other segments of the industry suffering from similar fishery failures arising from resource disasters. However, let me assure you we are not going to encourage resource disasters. These things are a real headache and once you start the ball rolling you'd be surprised how many of you may start getting it. We are going to look real close at this resource disaster money.

I am pleased to announce that the Department of the Interior Appropriation Bill for fiscal year 1966 has now become law and that both Sections 4(a) and 4(b) of the Act have been funded. A total of $4.8 million has been appropriated, $4.1 million of which is being apportioned to the States according to the formula in the law which reflects the relative value of the fishing industy in each State. This is Section 4(a) - the matching funds. These apportionments are based on the three most recent calendar years for which data satisfactory to the Secretary are available. No State may receive an apportionment for any fiscal year of less than one-half of one percent of the funds, or more than six percent of the funds.

Any apportionment for any fiscal year remains available to carry out the purposes of the Act until the close of the succeeding fiscal year and if unobligated at the end of that year, the sum is returned to the Treasury of the United States. In other words the funds that are apportioned to the States are good for two years. If they are not spent in that time, they go back to the Treasury. We had a good reason for doing this. Here's an example. The State of Michigan started submitting projects which we were disapproving. At the end of two years we still had approved none of their projects, and we took the money and we gave it to the State of North Dakota and the States of New York and Wisconsin. Michigan would come in and say, "Well, you disapproved all of my projects, so you could give the money to Wisconsin." This won't happen. If Michigan doesn't spend the money, it goes back to Treasury. No one gets it.

Another $400,000 has been appropriated under Section 4(b), $100,000 of which must be made available to the four Middle Atlantic States to continue the special cooperative study to develop a disease resistant oyster. The remaining $300,000 appropriated for Section 4(b) may be made available to the States in such amounts as the Secretary may determine appropriate for the purposes of the Act, provided that preference shall be given those States in which he determines there has been a commercial fishery failure due to a resource disaster. In other words, if no disaster occurs we can take this money and apportion it out to States as 4(a) money where a need exists. We are not real sure at this time that we are going to have our 4(a) money. I understand the other day that the Bureau of the Budget in a big economy move has already impounded $300,000 of this, so with resource disaster it looks like there's going to be slim pickin's again this year.

There was also appropriated $300,000 for the administration of the Act by the Bureau. We understand that $100,000 of this has already been impounded as well. No funds are available to implement Section 4(c) of the Act during fiscal year 1966.

In anticipation of favorable action on the appropriation bill, we invited the submission of project proposals for research and development work under Section 4(a) on April 30. Project proposal forms together with interim instructions and criteria to be used in evaluating projects have been made available to all States. Proposals are now being received in the Bureau's regional offices from the respective State agencies, which are defined in the Act as "any department, agency, commission, or official of a State authorized under its laws to regulate commercial fisheries." The Governors of all fifty States, the Commonwealth of Puerto Rico, Guam, American Samoa and the Virgin Islands have already designated such agencies. These are the only agencies with which we maintain contact, but in many States other agencies or institutions are planning to submit projects through the official State Agency. We have received about 50, some of which have been approved. A $200,000 contract has been signed with the State of New Jersey for planting oyster shells.

Projects submitted under this Act must be directed toward an economic improvement of the domestic commercial fishing industry. Such projects should ultimately improve the productivity of the fisherman or processor; expedite early diversification of an existing industry or establishment of a new industry; or lead to increased consumption of domestic fishery products.

Approvable projects may include but are not limited to the following types of activities:

1. Accumulation of knowledge for the optimum utilization, restoration, or maintenance of a resource or group of resources.

2. Location of new resources and the development of new fishing methods and equipment.

3. Handling and processing of fishery products.

4. Economic studies.

5. Market promotion and development aimed at trade channels above the consumer level.

6. Construction of research facilities and vessels.

7. Coordination of research and development.

8. Technical extension activities to disseminate the useful results of research and development projects.

9. Collection, compilation and dissemination of statistics.

The following types of projects are not approvable:

1. Projects from which the benefits appear to accrue only to a single individual or firm or to a relatively few individuals or firms, unless the fully justifying circumstances are documented in the proposal.

2. Projects dealing primarily with law enforcement operations.

3. Projects of a public relations nature; except that well-planned extension activities which will disseminate research and development results to the commercial fishing industry are eligible for consideration.

Certain restrictions will apply to projects which may be submitted by the State agency. Examples of such restrictions are as follows:

1. No funds may be used for construction of facilities or vessels, the primary purpose of which is commercially harvesting, handling, or processing of fishery products - not going to finance boats, plants, etc.

2. Funds obtained from other Federal agencies shall not constitute any part of the State contribution to projects approved under this Act, unless specifically so provided by the Congress.

3. Projects funded by this Act shall not be more than three years in duration. Extensions beyond three years may be considered after a comprehensive review and resubmission of project documents.

Projects must be substantial in character and design in order to be considered for financing under this Act. The major criteria to be used in establishing such substantiality are as follows:

1. Responsiveness to basic economic problems of the commercial fishing industry segment involved.

2. Condition and potential of the resource involved.

3. Current and potential value of industry segment(s) involved.

4. Competence of research organization, and availability of necessary facilities.

5. Extent of similar State and Federal research and development previously conducted or in progress.

6. Length of time and total cost to complete project.

7. Availability of financing from other sources.

If, on the basis of the above evaluation, a project appears to be substantial in character and design, it will be recommended for approval at either 50 or 75 percent Federal funding. Such projects may be funded at the 75 percent level if they are regional, national or international in scope. If such projects are of limited local (intrastate) scope, they may not be funded at more than the 50 percent Federal level. We thought we would have trouble from the Bureau of the Budget, but this is not the case. A number of 50-50 projects are coming in.

For instance, in a New Jersey project, which we have approved and on which we have already made our first payment, it's a $200,000 contract to plant oyster shells in some of the bays along the Jersey coast. This was a 50-50 project. Delaware is in for a similar 50-50 project. North Carolina and some other states are coming in with 50-50 projects. So, we're happy to see that they are not all going to be requesting the maximum amount of financing.

Until now the Bureau staff to administer this program has been limited to one (Norris) with some part-time help (which is me) and the cooperation of our regional personnel, and God bless Thorn Marsten and his group of people in Federal Aid. However, with the appropriation of funds we are establishing a small staff in Washington, and we are placing a coordinator for the program in most regional offices - Gloucester, Massachusetts; Seattle, Washington; St. Petersburg Beach, Florida; Ann Arbor, Michigan; and quite possibly in Tourmilina, Italy. We urge you to maintain close contact with these people. They are there to help you and to assure the smoothest possible operation of this program.

The proposals which you have been submitting are reviewed in our regional laboratories and field stations. The Regional Directors then transmit them to Washington with their recommendations. Final approval has been delegated to the Director by the Secretary. Your approved proposals will be returned to you from Washington indicating the level of Federal financial participation which can be expected.

We are attempting to give you thirty day service on this review, but as in any new program we are suffering from growing pains. I hope you will bear with us during these early days, and I assure you we will do all we can to expedite project review.

Following receipt of your approved project proposal you will submit a contract agreement, accompanied by plans, specifications and estimates, covering the segment of the project which will be undertaken during the fiscal year. This document, when signed for the Secretary, will obligate funds, and you will be able to proceed with the work. I have some samples of some of the forms here.

We are going to work towards simplicity inasmuch as we're not going to have the technical staff. We are going to have to do this with more or less existing personnel. We are going to live within the law. So we're going to interpret the policies and procedures as broadly as we possibly can. We feel that we are going to maintain three major areas of control:

1. In approving the projects. If we approve the project, we've got faith in your ability to carry it out.

2. I think we are going to exercise some control in monitoring these programs. We're not going to ride hard on them, and we're not going to sit on top of them. At the same time we know that too much laxness on the part of the States and too much heavy-handedness on the part of the Federal government is going to fold this program up. We've got to have a middle ground somewhere. We are going to monitor these programs; work with you; and see that the objectives are being met.

3. A third control will, of course, be in the audit. There are some changes being made in the audit program. We are advised that in all probability this will go to a consolidated departmental audit, and we don't think this is going to hurt you at all.

We are asking you to submit project proposals even though we don't presently have the matching funds. We are also asking you to submit project proposals in excess of what your apportionment may be. We can approve these projects and send them back.

You can pull them out of your files on a priority basis and submit them within the limits of the funds that you have. I think this should be helpful to us if you do this. We can go to Congress, to the Bureau of the Budget - we can say, "Look, we've x numbers of dollars more in proposals than we have dollars coming in. We have $10 million worth of proposals submitted here by the states, and we have only got $40 million to carry out the program, so we are going to use the money." At the same time I think, if you can take your approved projects which are 50 or 75 per cent state-financed, this might help you in your State legislature. You can go to them and say, "Look, the Federal government has approved these projects. This is how much money we are going to need to initiate them."

We are confident that the research and development programs financed under this Act will benefit the domestic commercial fishing industry. This increased financial support to State fishery agencies will help strengthen your staffs and facilities. This will in turn, lead to improvement of the total fishery effort in the United States.

I just want to add one more thing. In developing our policies and procedures, we are going to call upon state administrators to come into Washington perhaps once a year, perhaps twice a year, to sit down with

us for a day and talk this thing over, and see where we are going, and what can be done to make it operate better. We have had two such meetings - one in November and we had a meeting again last week. Ted Shields is one of the gentlemen who discussed the program with us. We will have to keep rotating the membership on this 10-man committee, so that we can get the opinions of all fifty states eventually. We are going to listen to you. We don't have to take your advice, but we will listen to it, and if future meetings are anything like the last two we have had we have got some real good advice and recommendations.

This is about all I have, gentlemen. I am glad to be here and see a lot of old friends. Thank you.

CHAIRMAN MOORE: Thank you, Mr. Balkovic. We are going to dispense with questions at this time. I understand that Mr. Balkovic will be around until tomorrow and for the sake of saving time, we will adjourn, and if you have any questions, you can contact Mr. Balkovic direct.

(LUNCH BREAK)

Wednesday Afternoon Session, July 28.

CHAIRMAN J.T. SHIELDS (Director, Division of Game and Fish, Minnesota):

It is especially a pleasure for Wayne Olson and me to be here today on this particular day, for this is the day on which we are announcing the early teal season in Minnesota, so we are very glad to be out of the country.

Without further ado, I am going to turn the meeting right over to the first panel. The panel moderator is Larry Gale. I don't believe that Larry needs any introduction. You know he's Assistant Director from Missouri, and has been at these meetings for quite a few years. Larry.

## ZONING AND MANAGING STATE AND FEDERAL RESERVOIR LANDS AND WATERS

MR. LARRY GALE (Missouri Conservation Commission): Thank you, Ted. Would the panel members please come forward? I think we could handle this more easily if you all could come up here. I want to welcome you all to this panel. I am especially glad since Dr. Clarke yesterday mentioned some bus tours with the ladies, I was afraid that we might lose part of our audience, but I think you have done very well by us today.

This subject is of considerable interest to us in Missouri because we are involved in managing the waters of many different sizes all the way from what we call our small lake or community lake program involving impoundments in the 20-acre and up class, to the large flood control

reservoirs in the navigation pools of the Mississippi River. Our zoning, especially, is actually quite limited although we have a form of zoning through regulations on lands that we own or have under contract of some type, but we have done some of this through limitation on horsepower of outboard motors, in types of boats that we allow on certain size reservoirs, various hunting and fishing regulations of course, provisions for camping, dog training and other such uses. We actually have got involved in zoning on only one large reservoir and that to a rather limited extent, so we are very glad to hear from States which have had more experience in this line. Management, of course, means many different things to different people. Some people think in terms of fishery management, game management, timber management and other specialized forms, but actually, in essence, these things usually come down to a matter of managing people more than they do managing the resource itself directly.

In terms of managing people, boating has been one of our fastest growing activities and also one of our fastest growing problems in recent years. Our first panelist this afternoon is very well qualified to discuss this subject. He served 22 years with the United States Coast Guard, and now is Supervisor of Boat Inspection in the State of Illinois. In this capacity he directs the enforcement of the Illinois Boat Registration and Safety Act, approves requests for regattas to be held in Illinois, and compiles boating accident reports. It is my pleasure at this time to present Mr. Kenneth E. Gruenewald, Boat Inspection Supervisor for Illinois. Mr. Gruenewald.

MR. GRUENEWALD (Illinois Department of Conservation):

REPORT ON MULTIPLE USE WATER ZONING PROGRAM IN ILLINOIS

I am going to report on our multiple use water zoning program in Illinois. I realize that perhaps this won't apply to some states and perhaps you do not have the problem that we have.

Shortly after the enactment of the Illinois Boat Registration and Safety Act, our Department becan receiving complaints from fishermen in the Chain of Lakes (a group of natural lakes which is located some fifty miles northwest of Chicago) where on a summer weekend the boating traffic can become as heavy as that encountered in the downtown Chicago loop, protesting that they were being driven from the waters of the Chain and could no longer pursue their favorite outdoor pastime because of the large power boats churning up the waters and making fishing from a small boat at anchor virtually impossible. It became apparent that the conflict between the water users was not confined to just the fishermen versus power boaters. There also existed a conflict between the water skiers, swimmers, scuba divers and virtually all the persons using these heavily congested waters.

After numerous meetings with resort operators, boat clubs, water ski clubs, operators of fishing boat liveries, swim clubs, and officials of municipalities having concurrent jurisdiction with the State over waters within the boundaries of their political subdivisions, it was decided that the most equitable manner of solving the water user conflict and insuring, insofar as possible, the basic premise of equal rights to the use of our waters to all users, would be to undertake a program of zoning our

waters for a specific recreational use. Our efforts in zoning began experimentally with 16 water areas being set aside in the Chain of Lakes region as fishing areas, wherein outboard anglers could fish without the heavy wave from power boaters rocking them out of their small boats. Prior to designating the 16 initial areas as fishing areas, legal notices were published in the newspapers, advertising the fact that a hearing was to be held. The Department then held hearings, at which time interested parties were given the opportunity to appear and give testimony. We also consulted with our fish biologists, to ascertain that the zones which we were setting aside as fishing areas were in fact places which were known to be good for fishing. We next proceeded to set aside the restricted zones designated as a result of the hearing.

In marking our restricted areas, we have adopted the use of the uniform regulatory buoy marker system, as recommended by the Council of State Governments. This uniform buoy marker system provides for the use of the following geometric symbols on our buoys or beacons, to designate specific areas. Diamond shape with a cross means BOATS KEEP OUT. This symbol is used to designate a swimming area. A diamond itself means DANGER. This is used to mark a dam, a rock, a shoal, or other obstruction. A circle indicates a controlled area. This is a restricted zone, where boats are allowed ingress or egress at Slow No Wake speeds, such as a fishing area in which property owners, having riparian rights, could pass to and from their properties. A square or rectangle gives information as to distance, directions, availability of gas, oil and other services. In regulating the speed of boats in controlled restricted zones, we employ the Slow No Wake speed in lieu of a set/* point, set speed limits as such are unenforceable unless the boat in question is actually clocked. The zoning of restricted areas, by setting aside restricted zones as permanent zones, wherein boaters must at all times operate their craft in conformity with the regulations for the specific zone, was adopted in lieu of setting aside certain hours of the day for various activities; as it has been our experience that zoning by the setting aside of certain hours for a particular water activity imposes a hardship on certain segments of boaters who, by virtue of their leisure hours, cannot avail themselves of the boating activities they most enjoy. The establishment of the 16 original areas proved so successful in our State that to date we have in excess of 100 water areas that have been set aside as restricted waters, wherein boaters must operate their watercraft in the manner prescribed by the buoys or signs designating these areas.

As to the benefits that the public, the various businesses, and our Department have derived from our zoning program--in 1960, over half of the 300 persons engaged in boat livery businesses on the Chain of Lakes, when in the course of having their 5,000 livery boats inspected by our conservation officers, indicated that they had been losing money each of the past several years from their operation, due to the decrease in the number of fishermen, brought about by the reluctance on the part of the fishermen to brave the antics of the power boaters in competing for use of the congested waters. After the first year of zoning, the livery operators had shown a 30% increase in their business. They had experienced an increase also in the years of 1961, 1962, 1963 and 1964; consequently there are now more people engaged in livery businesses than there were in 1960, and the operation of a boat livery service is again a profitable enterprise.

*/speed limit of say 5 miles per hour, as we feel that from an enforcement stand-

The fishermen also who had decided to do their fishing outside our State, because of the congestion on our waters, are again fishing in Illinois, resulting in revenue remaining in our State which would have been lost to us. Because of the opportunity that the fishermen now have of again fishing undisturbed on our waters, our Department has noticed an increase in the number of fishing licences sold in areas where fishing had been all but abandoned before zoning.

The U.S. Army Corps of Engineers, in their planning for multiple recreational use of several large reservoirs now under construction in our State, have provided for zoned areas on these reservoirs. These areas had been planned even before the waters are impounded. It is felt that this long range planning will prove beneficial to all concerned.

Another plus on the side of zoning in our State has been the marked reduction in the number of boating accidents that have occurred on our congested waters. In 1960, with 100,000 boats registered, there were 61 boating accidents which resulted in loss of life; while in 1964, with 170,000 registered boats, there were but 32 fatalities as a result of boating accidents. There is no doubt but that our zoning program has played an important part in this reduction, and this fact alone we feel justifies our zoning efforts.

MR. GALE: In the interest of time I think we'll hold the questions until the other panelists have completed their presentations.

The littoral is most important to wildlife, and as wildlife managers we must be especially alert to the effects of our many varied uses of this zone. Our next panelist has had considerable experience along this line as an acting member of the Upper Mississippi River Conservation Committee and in various assignments with the Wisconsin Fish and Game Division. He is now administrative assistant in that Division. It is a pleasure to present Mr. C.W. Threinen, our next panelist. Mr. Threinen.

MR. THREINEN (Wisconsin Fish and Game Department):

PROTECTION OF THE LITTORAL

Thank you. Mr. Chairman, fellow panel members and gentlemen.

Our subject is, of course, protection of the littoral. Now this problem of attacking this question here bothered me to some extent to begin with because I knew there were a lot of game people here. I knew there were parks people here and administrators and so on. I feared that perhaps some of them didn't even know what was meant by the term littoral. I felt that for practical purposes they might think it meant beer cans and associated rubbish, but this is not the case. What we mean by littoral is one of those uncertain definitions I find it necessary to spell out before I can continue with a discussion of this subject. We need to know something about what we want to protect as well. Now, we can get some ideas as to

how warped people's thoughts can be or how ideal they can be regarding the littoral if we just examine a few slides to begin, and if the slide operator would show the first two slides quickly here, we can get this idea. The first slide you see is pretty good,nice sandy beach, wave-washed, no developments. I am sure everyone would call it a beautiful littoral. The second slide is equally good. Here is a nice bluff. And, in the third slide you will wonder how the fish and game would feature. There is not much room for them. This portion of the littoral is certainly dominated by the human animal. And, then, you get some rather unusual concepts of the littoral. (You will see that in the next slide, here). It gets pretty messy at times, too. This happens to be a winter-kill lake, and we will hear some more about that a little bit later. This is a dead fish accumulation after the ice break-up in the spring. Or, you can get a still further idea of how entangling the littoral can be in the next slide, here. This fellow got trapped in weeds when they got pretty thick. This happens to the littoral. Then, you can get the contrast of some people's concept of the littoral and, let's say, the duck or some species of fishes, by looking at the next slide here. You can see that lovely piece of nice, narrow-leaved cattail, roughly 6 feet high, that was left as a bare remnant right between two pieces of very highly approved properties. Now, you will note how that shore was changed. It became a sandy beach or a boat livery, parking area for boats, as contrasted with the former marsh edge. Then, in our next slide, we have still another concept of the contrast. Here is a nice disciplined shore on one side and here is the marsh edge on the other side. How are the resources that we are interested in going to be protected and going to be given the right kind of habitat, if all the littoral is to go in the direction of the far shore here? Now,specifically, just what is the littoral? If you go to a limnological text, you will find the littoral is defined as a shallow water in which aquatic vegetation can be present on the bottom. This definition, for our purposes, is not very good because if you want to go to a clear lake you will find vegetation close to very, very great depths, fifty feet perhaps. It is not very good because of shallow water where it doesn't grow to any more than, say, two or three feet perhaps. Maybe you don't find any rooted vegetation in the littoral in some waters. This is possible also. So we have got to develop a definition of our own for discussion purposes - when we talk about man, when we talk about aquatic organisms and the various uses of the littoral. Now, I have defined it as the waters within the 10-foot contour and shore to a 3-foot contour above the water surface. This is a broad definition for the littoral. This would most effectively include the most important part of the vegetated zone of most lakes, beaches and marshes. It is just about the depth to which a man can walk plus a few feet and a height to which an amphibian can crawl, perhaps. Now, the second problem we have is the furnishing of description of this area. What's it like? What are we trying to protect here in this littoral? Most of you are familiar with lakeshores.

(The following is a copy of the prepared paper presented by Mr. Threinen):

# COMPETITION for the LITTORAL

by

C. W. Threinen
Wisconsin Conservation Department

The littoral in inland lakes, even oceans, has many users not the least of which is man. When man uses an area he is in competition with other users. As a result, the question facing the resource manager is: How much can man safely use the littoral and still preserve these cherished water resources in undiminished quantity and quality? An answer to this question requires consideration of the degree of competition, adequate identification of values sought from occupation of the littoral, and some agreement as to comparative values of various uses of the littoral.

## Nature of the Littoral

The littoral has to be defined for at least a partial understanding of the uses to which it is subjected. The common definition in limnological texts is, "the shallow water in which aquatic vegetation can be present on the bottom". The definition given by Veatch and Humphries (1964) is as follows: "The word pertains to the shore, either or both the shoreland and shore water and near shore bottom of the lake." The latter definition is more suitable because littoral defined in terms of vegetation can mean anything from very deep water on some clear lakes to very shallow water in others which are turbid.[1] A good practical definition would encompass the shallow perimeter of the lake and the wetlands, the depth to which a man can walk and a narrow strip of land along the shore extending back to the three-foot contour above the lake surface. For simplicity and to avoid extremes, it should include waters within the ten-foot contour and shore to the three-foot contour above the water surface. This would effectively include the most important part of the vegetated zone in most lakes, the beaches and the marshes. This is the interest area for most fish and wildlife, including fish having shore requirements.

Having established a working definition, one can turn to a description of the area. Nature of the littoral depends on provenance, basin slopes and depth, and, most importantly, on the fetch of the wind or size of the basin. Obviously a steep-sided basin in a geologically young rock depression will not have much littoral[2] and contrastingly, a shallow lake could be entirely littoral. But even in geologically young lake basins, beaches and beach terraces have developed so there is some littoral. The character of the littoral is a feature which is governed mainly by the size of a body of water and the fetch of the wind. If wind fetch is great enough, sorting of beach sediments takes place with the fine sediments (silt and clay size including organic micelles) being removed and deposited in deep water, and the coarse sediments (sand size and larger) remaining. Wave action

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1 Clarke (1954) quotes some extremes. Aquatic plants were reported at depths of 20 meters (65.6 feet) in Crystal Lake, Wisconsin, and the author has observed lakes where plant growths were limited to depths within the three-foot contour.

2 In Wisconsin there are no steep-sided lakes in rock depressions except for portions of some impoundments and some of the Lake Michigan and Lake Superior shore. Most of the natural lakes in Wisconsin were glacially derived from melted buried ice blocks or blocked drainages.

creates a terrace or shelf the slope of which is no more than 10 percent. The wave-created shelf, better known in the ocean as continental shelf, and littoral shelf to Hutchinson (1957), is of great interest in this discussion. The size and extent of the wave terrace, even the existence of a terrace, is dependent in part on the fetch of the wind. In Wisconsin small lakes essentially less than 50 acres generally do not have sandy beaches or significant terraces and have nothing but encroaching vegetation if fertile enough. Larger lakes will have sorted beaches on windward shores and encroaching vegetation on lee shores. The larger ones, those over about a thousand acres, have sorted beaches on all shores and encroaching vegetation on protected bays. The very largest have extensive wave built shelves and beaches, the terraces reaching as deeply as 50 feet. An illustration of characteristics of the littoral for lakes of various sizes is provided in Figure 1.

Basically there areabout four types of littoral habitat: rock and boulder, cobble and pebble, sand, and mud, with intergrades between all types. The mud category includes organic deposits. Marly deposits can be either sand or mud.

The littoral supports a plant community correlated with its character. Briefly these communities may be referred to as follows:

(1) Fen: The wetland vegetation associated with the mud-bottomed littoral usually forming a solid edge, typified by cattail (Typha), arrowhead (Sagittaria), marsh grasses (Glyceria), water willow (Decodon) and others. Northern bog lakes have an association of their own dominated by bog shrubs and sphagnum.

(2) Emergent: Plants living in shallow water and having stems emerging out of the water. The community is typified by bulrush (Scirpus), wild rice (Zizania) and water lily (Nymphaea and Nuphar). The community is generally restricted to water less than 4 feet deep.

(3) Submergent: Subdivided into the flexible plant community having grass-like stems growing in the shallow water under the influence of wave action and the leafy plant community of deeper water. Plants of this group are relatively undisturbed by strong currents and if waters are fertile enough and botton types favorable, they grow luxuriantly. In most lakes their bathymetric distribution extends beyond our accepted definition of the littoral, down to about 12 feet, sometimes deeper and much shallower in very rich and dystrophic lakes.

(4) Strand: (eulittoral) Both a pebble strand and a sandy strand are recognized where abrasion from clastic materials is too great to permit development of vegetation.

(5) Rocky Shore: Relatively unaffected by abrasion but subjected to heavy wave and current action, only the epiphytic species of algae grow, of which Cladophora is most typical.

Some of the plant communities and botton types encountered are illustrated in Figure 2.

The shallows or littoral are without question some of the most productive waters in a lake environment. The main reason is that this zone for most waters will be within the trophic zone, receiving and effectively utilizing the sun's energy. Also while supporting plant growths, it acquires much more surface area than just the simple bottom. It therefore supports a high density of invertebrate life. Biologists will commonly call lakes having a greater length of shoreline (and more littoral) "more productive"[3] Perhaps this is why. Pearse (1913) reported the habitat that affords the largest and most varied food supply is the aquatic vegetation along shore, and it also furnishes good shelter. More species of fish frequent the shore vegetation than any other habitat and they together take a greater variety of food than those in any other place.

## Use of the Littoral

Use of the littoral by all the various vertebrates and economic invertebrates cannot be covered completely because of the large number of representatives and the great complexity of the food web. One can only refer to some of the most important and the larger groups and to those groups in some degree dependent upon the littoral. To illustrate the use of the littoral by various organisms, a depth distribution chart has been constructed (Fig. 3) in which the various classes of organisms have been grouped. A solid bar indicates use for feeding and loafing, an open bar is for loafing only and triangles indicate nesting or spawning. Almost all species of fish common in warmwater lakes have a littoral requirement. The nature of this requirement is for both spawning grounds and for nursery areas. Some species, notably walleye, northern pike, and muskellunge use the very shallowest perimeter of the lake for spawning. The young of most species are most common in the weedy shallows. Some are commonly and predominantly residents of the shallows. Pearse (1918) noted in his studies of the food habits of shore fishes that most species feed along shore.

Amphibians, frogs especially, are residents of the perimeter of the lake usually having one foot in the water and one foot out. They are heavily dependent upon aquatic insects for food and their larvae or tadpoles are usually residents of the very shallowest waters. As individuals, they are probably not very important but as a group they are one of the animal building blocks in the food pyramid for they are known as important food for fish, and wetland wildlife.

A group of organisms forming a direct link in the aquatic food chain and a specific food resource for some species of fish are the crayfish. Some species are associated with the marsh and wetlands[4], and other species live over firm bottoms and are dependent upon hiding places for a successful existence. Two species in particular have been observed to thrive in waters with rocky bottoms, in flooded reservoirs where old tree stumps provide equivalent habitat and on the shores of lakes which have extensive beds of bulrush (Scirpus)[5]. The larger of this species is good eating to man, and both are common foods for species of fish associated with rocky bottoms, the rock bass and smallmouth bass. A list of the animals using crayfish for food (Lagler and Lagler, 1944) is impressively long.

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3 Rawson (1958) lists shore development as a factor in productivity. He attached most significance to area and mean depth. Welsh (1935) states, "The greater the length of shoreline, the greater the productivity".

4 Wisconsin wetland species include Procambarus blandingii and gracilis, and Cambarus diogenes.

5 Species associated with firm bottoms are Orconnectes virilis and propinquus.

Animal groups having more value for the sightseer than anything else are completely dependent on the littoral. The muskrat, for example, lives in the marsh or on the edge of the marsh or bank. Almost all species of waterfowl and shorebirds common in Wisconsin make their homes on the wetland edge. Of special note is the usual preference of canvasback and redhead duck for wild celery (Martin, Zim and Nelson, 1951), a plant most common in the littoral. Dependence of dabbling ducks on shallow water (less than 3 feet deep) is well known. As an example, one species of turtle, the painted, (Chrysemys picta) has been found to be dependent upon vegetation for support and suitable loafing conditions. Most dig their nests in sand and gravel associated with beaches.

Man's position in this structure is dependent upon the uses he makes of the shore. The usual organization of uses in Wisconsin consists of owning a small piece of property perhaps 100 feet wide on the lakeshore with a cottage or house located on it. From this base swimming is possible, one or more boats can operate for fishing, water-skiing, sightseeing or sailing and deep drafts of aesthetics are possible over the expanse of water. In less common instances, public beaches or resort accommodations are the organization of uses.

This collection of activity utilizes most intensively the zone shown by diagonal lines in Figure 3, the immediate shore and the water out to 6 feet depths. Associated developments consist of a well kept, mowed lawn from 1 to 3 feet or more above the lake level, a clean sandy beach, a sandy-bottomed littoral, completely free of aquatic vegetation. In selecting near-shore sites for living and recreation both, man has to make use of groundwater for drinking and other domestic purposes. Ground disposal of wastes follows.

## Consequences of Littoral Competition

The data presented in Figure 3 are clear: there is competition in the littoral which is especially keen for some species. While there many be competition with some, is there not substitution by others or is there a net loss? Just what is the gross effect of man's appropriation of a large portion of the littoral?

Certainly any species whose spawning or nesting grounds are completely appropriated will be lost to the lake economy. The importance of this loss will in some degree depend upon the position of the animal in the pyramid of numbers within the ecosystem and the value placed on it by man. Most of the habitat for wetland invertebrates, shorebirds, and mammals will be lost. Even the food supplies of diving ducks may be hurt because algae control with copper products kills mollusks.[6] The habitat for most reptiles and amphibians will be eliminated. In the fish column there will be elimination of the spawning habitat of some species, notably northern pike and muskellunge. The dogfish could also be listed as suffering from loss of spawning habitat, but perhaps none would lament this loss. Nevertheless, any predator species will be an unfortunate loss where stunted panfish is the major management problem. Nesting of Centrarchids and other species occurs in the littoral, some early enough to avoid the intensive use by man during late spring and early summer and some right at the peak. There are indications that the spawning of nesting species has been pushed into deerper water. The undisturbed lake usually has nesting in very shallow water. No one, however, could be disturbed about displacement of bluegill nesting habitat, but they could become disturbed about largemouth bass.

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6 Mackenthune and Cooley (1952) reported very few Pisidium present in Lake Monona, a lake consistently and intensively treated for algae blooms. Nearby Lake Mendota, on the other hand, supported large populations. Recommendations for chemical mollusk control commonly call for the use of copper sulfate (Mackenthune, 1964). The first quoted authors, lest they be cited out of context, originally concluded that the variability in mollusk density was due to ecological variables, rather than copper toxicity.

Macro invertebrates are big loosers in the littoral, with fish indirectly affected. Their habitat is converted to weed-free sand bottom. The feeding and living space of shallow water residents is eliminated. A special example is the crayfish living either under and among rocks or debris and around the root tangles of plants. None of these habitat devices are acceptable features on the improved sandy beach preferred by man. When macro invertebrates are reduced or eliminated, fish loose an important source of food.

The consequences of losses or changes in the littoral may be indicated by a tally of problems reported for all the named lakes in southeastern Wisconsin[7] (Table 1). This tally indicates winterkill and excessive growth of aquatic plants were the major problems. Both of these problems are accentuated by fertilization originating from the shore and watershed. Stunted panfish normally would not be expected in winterkilled lakes; they tend to occur in smaller bodies of water where the littoral is a high percentage of the total area. The circumstances suggest that loss of some weedy littoral habitat in itself could not be critical for a solution to the problem, but that lack of larger units of food, and adequate predation might be factors. In these circumstances haman occupation of the littoral may affect predator survival and production of large units of food (i.e. crayfish, minnows, insects, etc.). These circumstances also betray a great deal of difference from lake to lake in the potential consequences of man's occupation and use of the littoral based on the individual characteristics of the lake. They also suggest that one of the more dire consequences may be increased enrichment and oxygen-deficient water arising from shore occupancy. Fish managers and biologists would be much more concerned about losses in the littoral on lakes which have a meager littoral.

Man's occupancy of the littoral tends to push the whole ecosystem in the direction of pelagic life--more algae and fewer rooted plants, more plankton and fewer macro invertebrates, more crappies and white bass and fewer bluegills, largemouth bass and northern pike. At the same time he contributes to enrichment of the environment if not outright pollution.[8] This difficulty has been graphically illustrated by the occurrence of winterkill in waters that never had it before,[9] and by the disappearance of the burrowing mayfly from some waters.[10]

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7 Southeastern Wisconsin is a fertile agricultural region which has hard-water lakes. Most of these lakes have been subjected to a high degree of housing development, because of their nearness to major cities. These data were extracted from the Wisconsin Conservation Department's Surface Waters Inventories.

8 The author is of the opinion that there is much more pollution and enrichment originating from shore occupancy than is generally realized. The general manner in which it occurs is shown in Figure 4. More detailed substantiation is presented in Appendix Table A. The quantity of "used" water is very high relative to volume.

9 In recent years winterkill has occurred on lakes which have never faced the problem before. A notable example is Fox Lake in Dodge County. A large portion of the periphery is surrounded by cottages and homes.

10 The burrowing mayfly, principally Hexagenia limbata and related species, is sensitive to low dissolved oxygen (Hunt, 1953). It is therefore limited in its bathymetric distribution to depths with adequate oxygen and it is absent from winterkilled lakes. Highly entrophic lakes do not have burrowing mayfly populations and instead have predominantly midge populations.

Table 1. List of and frequency of problems faced on lakes in Southeastern Wisconsin.[1]

| | Number of lakes | Percent with problem |
|---|---|---|
| Total number of lakes | 226 | - |
| Winterkill | 72 | 32 |
| Excessive aquatic plants | 81 | 36 |
| Excessive algae | 13 | 6 |
| Carp | 47 | 21 |
| Stunted panfish | 26 | 12 |
| Pollution | 12 | 5 |
| Fluctuating water levels | 49 | 22 |

1 These data have been extracted from "Surface Water Resource Inventories" for Kenosha, Racine, Walworth, Waukesha, Ozaukee and Washington Counties.

The summary suggests that diminished aesthetics and water quality, lack of predators and scarcity of larger food units may be the most important consequences of man's occupancy of the littoral. A higher BOD being produced in the groundwater system contributes to winterkill.[11] Also, because of low dissolved oxygen, populations of bottom organisms intolerant of low oxygen become victims. Enrichment and conversion of littoral to open water habitat enhances production of plankton--small units of food--but it does not appear to enhance production of larger units of food such as dragonflies and mayflies. These circumstances favor production of pelagic species of fish which are plankton eaters, notably the crappie or white bass; and the plankton community offers little value to waterfowl and other wetland wildlife seeking roots and seeds of rooted plants or macro invertebrates.

These losses in the littoral have been pictured in the form of a pyramid of numbers with building blocks consisting of the many different forms of life (Figure 5).

## Protection of the Littoral

If man can't appropriate the entire littoral without consequences in the usual glacial lake, what steps should be taken to protect it? The answers to the question have to be based on certain assumptions. One assumption is that the greatest public gain will come from varied biota consisting of the full range of organisms originally natural to the environment. The other is that man's use of the water of necessity requires adequate access to the shore.

To have the full range of animal life unquestionably will require some wild land on the shore associated with undisturbed littoral. The character of many inland lakes, with marsh on west shores and protected bays and sorted beaches on the other shores, has led Wisconsin biologists to believe this amount should be at least 25 percent of the lakeshore, concentrated on the wetlands. Most certainly biologists would be happier with more, but they feel that this is a necessary compromise with the current desire for frontage as cottage sites, resorts and public use areas. This more or less patent recommendation for 25 percent is deserving of further refinement when population pressures become great enough. Where man's use of shore is moderately intensive, as for cottage sites, there still may be a few aquatic plants, even some shore cover, incidental to this use. But with growth in population, use demands intensify and former cottage sites become apartments, marinas and public swimming beaches--all very intensive use of the shore to the nearly complete exclusion of fish and game. When this occurs, there is need for a broadening of the wild and semi-wild land concept. We have felt that where intensive uses of the shore rise to as much as 25 percent, 50 percent will wisely be left in a semi-wild state as picnic grounds or parkways, and 25 percent left in a wild state.

The "25 percent rule" is essentially philosophical and educational, and it will vary with the circumstances. Its importance is that it is a simple idea covering fish and wildlife needs that can be easily grasped by planner or layman. In advancing it, our hope was that the land acquisition agency could measure its acquisition needs, the planning agency could have ample justification for setting aside a conservancy district in its land zoning, and the administrative agency could render decisions relative to water use that would be in harmony with it.

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11 Housing developments on shores of lakes may seem relatively innocuous as factors in water quality. In reality they potentially can be major factors as will be illustrated by the hypothetical figures furnished in Appendix Table A. The manner in which they affect a lake are illustrated in Figure 4.

Defense of the littoral occurs in many ways: through land acquisition by the public agency, particularly Conservation Departments; through zoning, especially by local units of government; by laws supported with adequate enforcement services;[12] and by administrative decisions of the Public Service Commission. Some of these measures work better than others. A practical observation is that as long as a person owns private property on the lakeshore he will contrive to "improve" it to boost his economic rent or personal satisfaction. Man's traditional concept of neatness and subduing the land runs counter to the fish and wildlife requirements for food and cover and man's own aesthetic desires. Control of weeds and algae will occur; the muck or rock shore will be converted to sand. Laws prohibiting these actions are only a holding action.

The surest form of littoral protection is ownership of the immediate shore and maintainance of wild land. Then habitat protection is assured. Zoning has been seldom applied, but it constitutes a substantial holding action that deserves far greater employment for protection of littoral demands of fish and wildlife than it now receives. It is most useful for wetlands which have important auxiliary functions such as water storage. Administrative decisions are also a holding action strongly influenced by the economics of the situation.

In the final analysis, if man lives on the shore, he will improve it to suit his image. Safeguarding the littoral will best occur by keeping man off at least a portion of the shoreline.

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12 The laws which tend to give protection to the littoral have been summarized in Appendix Table B. Decisions regarding water use are made by the Public Service Commission. Also state subdivision and platting laws offer some potential for protection of the littoral, particularly wetlands. One provision calls for a minimum of 90 percent of the lot being two feet above the high water mark. Another provision calls for setback of ground disposal sewage systems. These provisions are cited in Appendix Table C. Local zoning is often more strict and some counties have conservancy districts.

Appendix Table A. Water use and sewage disposal on a hypothetical 100-acre seepage lake with a mean depth of 10 feet surrounded by homes.

| | |
|---|---|
| Lake Area | 100 acres (0.156 mi.$^2$) |
| Lake Volume | 1,000 acre feet |
| Lake Circumference | 1.4 miles |
| Number of houses (100' lots) | 74 |
| Water consumption per person | 80 gal. per day (10.7 ft.$^3$) |
| Water withdrawal/yr./house (5 persons/house) | 0.45 acre feet/yr |
| Water withdrawal - all houses | 33.1 acre feet/yr. |
| BOD/house/day | 1.25 lbs. |
| BOD/house/month | 37.5 lbs. |
| BOD all houses/month | 2,775 lbs. |
| BOD all houses/year | 33,762.5 lbs. |
| Volume water to satisfy BOD of 1 family/day[1] | 2,000 ft.$^3$ |
| Volume water to satisfy BOD of all houses/day[1] | 147,000 ft.$^3$ (3.4 acre feet) |
| Volume water to satisfy BOD of all houses/month[1] | 4,440,000 ft.$^3$ (102 acre feet) |
| Volume water to satisfy BOD of all houses/year[1] | 54,100,000 ft.$^3$ (1,241 acre feet) |

[1] 10 ppm dissolved $O_2$ assumed.

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Appendix Table B. Summary of laws which tend to give protection to the littoral. These data are a duplicate of the Public Service Commission informational summary.

IF YOU HAVE PROPERTY ON OR ARE INTERESTED IN ACCESS TO OR MAKING USE OF A LAKE OR STREAM IN THE STATE OF WISCONSIN - DO YOU KNOW:

That the title to beds of natural lakes is held in trust by the State. The owner of the adjoining upland has an absolute title to the ordinary high water mark and a qualified right in the exposed lakebed in front of his property.

That on rivers and streams the owner of the adjoining upland has a qualified title in the streambed to the center thereof, subject to the right of the State as trustee.

That any lake or stream or other body of water which is navigable in fact is open to any member of the public for purposes of navigation, including boating, swimming, hunting, fishing or other recreational purpose. In exercising such rights the public may not trespass upon private property. Waters are navigable in fact under the law: for example, if the smallest boat can be located for even restricted periods during the year (as well as under other circumstances).

That generally speaking, a riparian owner (owner of the land adjacent to the water) can erect a pier of reasonable size and length in the lake or stream adjoining his property, if it is constructed to provide for the free movement of water under it and is otherwise such as is reasonably necessary to meet his navigation needs. Upon receipt of a complaint, inquiry into the legality of such a pier or other structure in a specific case can be made by the Public Service Commission of Wisconsin as provided in section 30.14 (2), Statutes.

That generally speaking, structures such as breakwaters and boathouses erected or maintained on the bed of or in a lake or stream are contrary to law, unless authorized by the Public Service Commission under section 30.12, Statutes.

That earth and other material may not be dumped or placed on the bed of any navigable water below the ordinary high waterline where no shoreline has been established or beyond the shoreline where one has been established.

That section 30.11, Statutes, provides authority for the establishment of new bulkhead lines by a municipality, subject to the approval of the Public Service Commission of Wisconsin provided that they are in the public interest and conform as nearly as practicable to existing shores.

That upon application to and approval by the Public Service Commission, a thin layer of sand may be placed on the bed of navigable lake for improving the condition of the beach for swimming or similar uses.

That walls or other protection to prevent the water from washing away the bank are permissable if located at or inland from the ordinary high waterline but such protective works may not be placed on the bed of the lake or stream below such line.

That material can be removed from the bed of a natural lake or an outlying water of this state, only after a contract to do so has been obtained from the State of Wisconsin acting through the Public Service Commission of Wisconsin, as provided in section 30.20, Statutes.

That no person or corporation may obstruct any navigable water in any manner. A violation of such prohibition subjects one to a forfeiture or other action as provided in sections 30.15 and 31.23 (2), Statutes.

That a private bridge over a channel more than 35 feet in width requires a permit under section 31.23, Statutes. Private bridges over narrower channels must have adequate clearance for navigation use.

That a dam may be constructed or maintained in or across a navigable water only under authority by permit issued as provided in Chapter 31, Statutes, -- that dams constructed at the outlets of lakes, even on nonnavigable streams are subject to the power of the Public Service Commission to maintain proper levels for the lakes.

That the enlargement of waterways by widening, channelling or connecting with other natural or artificial bodies of water requires authority under section 30.19, Statutes.

That a permit is required to grade banks of streams or lakes in areas larger than 10,000 square feet (100 x 100 or other dimension).

That straightening navigable streams requires authority under section 30.19, Statutes.

That the Public Service Commission of Wiseonsin, Hill Farms State Office Building, Madison, administers the laws concerning lakes and streams and will supply further information relative to the above matters on request.

That in any particular case, the facts should be submitted to the Public Service Commission for a determination.

Public Service Commission of Wisconsin 1-22-64
Copied: 2/1/65

Appendix Table C. Some provisions of the state platting laws which tend to give protection to the littoral or provide for public use.

All subdivisions abutting on a lake or stream shall provide public access to at least 60 feet wide providing access to the low water mark so that there will be public access at not more than one-half mile intervals as measured along the lake or stream shore unless topography and ground conditions do not permit. (Section 236.16 (3), Wisconsin Statutes)

The area of any lot shall be sufficient to permit the use of a sewage absorption system. (section 65.03 (1), Health Admin. Code)

Ninety percent of the minimum lot area shall be at least 2 feet above the approximate high water elevation of any lake or stream affecting the plat. (section 65.05 (1), Health Admin. Code)

Eighty percent of the minimum lot area shall be at least 3 feet above the highest ground water level as estimated by the subdivision or his agent from soil boring test data. (section 65.05 (2), Health Admin. Code)

MR. GALE: Thank you, Bill, for that very illuminating discussion.

The acquisition and management of lands surrounding reservoirs has created very bitter controversies among the persons interested in using such lands. The Congress and agencies responsible for land use have attempted to establish guide lines in recent years to minimize conflicting interpretations. Our third panelist has managed lands and waters for the State of Wisconsin and in his present position with the Wildlife Management Institute is unusually well qualified to analyze actions of both State and Federal agencies and to observe the big picture. May I present Mr. Laurence R. Jahn. Larry.

MR. JAHN (Wildlife Management Institute, Horicon, Wisconsin):

Thank you, Larry. Ladies and gentlemen.

MANAGEMENT OF SURROUNDING LANDS

Previous speakers on this panel and also Dr. Tarzwell have emphasized approaches to handle the increasing volume of recreational activities of people on surface waters. But please remember, people largely depend upon land for their food, shelter, and waste disposal. Their acts in supplying these needs on the lands along surface waters can have a tremendous influence on fish and wildlife populations and habitat.

A wide variety and considerable volume of information is available on land use planning and zoning. Information on these topics is summarized as four basic premises underlying the management of lands along surface waters.

1. Development must proceed on the basis of sound ecological principles in order to provide suitable habitat for fish and wildlife, as well as people. With more people, income, leisure time, and interest in outdoor recreation, additional development of lands bordering existing surface waters, and impoundments to be flooded in the future, will be expected, demanded, and completed. The realistic approach is to provide guidelines for orderly development within the capabilities of the resources to provide satisfying experiences on a sustained yield basis. This is the only avenue to follow to provide individual satisfaction and benefits to the community without creating costly efforts for taxpayers in correcting erosion and pollution problems resulting from improper use of basic resources. Capabilities of soils, waters, and vegetation should be used to guide developments to satisfy demands of people.

2. Completely free and independent action by each individual would, in many cases, result in resource problems. Costly bills for rectifying erosion and pollution problems remind taxpayers of the truth of this statement. Real progress in development will come from having an overall land use plan. Each independent action will blend natural and human resources with benefits accruing to each.

3. Governments are tools to be used by people for constructive purposes, such as insuring public health, safety and welfare. The need is obvious for applying a master plan to government and private lands along surface waters to guide specific land uses and land users. This approach is required to protect people from their own thoughtfulness and destructive actions.

4. Greater application of existing knowledge is needed to guide developments of perimeter lands. Upwards of 85 percent of the United States' citizens will very shortly be living in urban areas. A high percentage of these people, plus some rural residents, use shorelines for their recreation. Urban people leave a highly organized urban society where individual actions are commonly guided for the benefit of the community. They travel through the open country and recongregate on the lands near surface waters. Water attracts people just as a magnet assembles pins. Urban people are conditioned to expect guidelines for activities at and near water areas. A real need is to have more resource managers, legislative members, and County and Town Board members provide leadership in supplying what is expected.

Within the framework of these premises, information is offered on three aspects of developing and managing lands along surface waters.

1. Patterns of land acquisition and development.

2. The need for and recent advances in using master plans for development.

3. Needed action concerning individual land uses.

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## Land Acquisition and Development

From the standpoint of protecting the public interest in investments made in impoundments, policies governing acquisition of perimeter lands are crucial. They determine what lands are available around water areas for fish, wildlife, and recreation development. As you know, general policies guiding fee title acquisition for federal impoundments have varied considerably in the past. In addition, what was done at an individual project was determined by specific legislative acts effective at the time of project authorization and construction, and by subsequent revestment acts.

Fee title acquisition at one time was limited largely to a specific contour. From 1954 to 1959, lands were purchased 300 feet horizontally from the edge of the conservation pool. Where precipitous and unusually flat topography occurred, lands were acquired within the five-year flood frequency contour. Generally, only limited lands useful for fish, wildlife and recreation were purchased under these procedures.

Modification of policy in 1959 authorized fee title acquisition for all shorelands needed to protect and preserve optimum recreational and fish and wildlife potentials for the general public. This new policy provided for the "Golden Age of Recreation." Some proposed impoundments, previously considered uneconomical, gained favorable cost:benefit ratios with the addition of recreation, fish and wildlife values.

Under provisions of the Fish and Wildlife Coordination Act (1958), the U.S. Fish and Wildlife Service and State Conservation Departments now examine proposed federal impoundments. Recommendations are made for mitigation and enhancement for fish and wildlife and for public use of the project lands and waters. A great deal has been accomplished and much remains to be achieved under this Act for fish, wildlife, and people.

Two important advances were made in 1962 that helped clarify acquisition procedures around federal impoundments.

1. The Departments of the Interior and Army approved a joint policy which further delineated what lands would be taken by fee title purchase.

2. Congress and The President approved Senate Document No. 97, which established uniform standards for formulating and reviewing plans for use and development of water and related land resources.

The proposed "Federal Water Project Recreation Act" (S. 1229, H.R. 5269) recently passed by Congress and awaiting the President's signature will influence developments for recreation, fish and wildlife on lands along multiple-purpose impoundments of the Departments of The Interior and Army. Both extent of development on perimeter lands and ultimate ownership of the lands are involved.

One important feature of this Act is to require state and local groups to share costs of modifying projects to enhance recreation, fish and wildlife. On all lands of less than national significance, development will depend upon agreement of state and local groups to provide the following items.

1. Administration of project lands and waters used for recreation, or fish and wildlife enhancement, or both, according to an approved plan.

2. Not less than one-half the costs of lands, facilities,and project modifications provided for recreation, and/or fish and wildlife.

3. All costs of operation, maintenance, and replacement associated with leased parts of the project.

If state or local groups do not participate in cost sharing, only minimum facilities for public health and safety will be built by the federal agency involved. Facilities such as roads and parking areas, picnicing, swimming, and camping areas would not be provided.

Some states view the proposed Federal Water Project Recreation Act with mixed emotions. Difficulties are anticipated in assigning local cost-sharing for projects involving migratory birds and anadromous fish.

A ceiling of $28 million from water resource project funds is imposed on expenditures for conservation or protection of migratory waterfowl. These funds would be in addition to those made available from the migratory bird conservation fund.

Lands needed for recreation, and fish and wildlife enhancement would be acquired at the time of project construction and would be held for a ten-year period. If, during this ten-year period, a non-federal public body agrees to administer the project for recreation or fish and wildlife purposes and share in the costs, the facilities would be constructed, and along with the lands, be leased to such a body for administration. However, if no such agreement is reached within 10 years, and the lands are not utilized for some other justified purposes, the lands could be sold.

Two points are important in this pending legislation: (1) lands will be acquired around certain federal impoundments, and (2) the lands may eventually be sold to private individuals or groups. To protect the public interests, minimum development standards should be attached to deeds of surplus lands that are sold. Objectives to be achieved by the standards are explained under the discussion of "Master Plans".

Information on all state land acquisition policies around impoundments is not now available. However, the approach used by the California Department of Water Resources is cited because it has considerable merit. California's authority for land acquisition is directive rather than permissive. A strip of land approximately 300 feet in width, measured horizontally from the normal pool elevation, shall be acquired completely around each reservoir. When needed for specific purposes, additional lands shall be acquired to preserve and enhance recreation, fish, and wildlife features. Lands shall also be acquired for development of specific recreation potentials at state water projects other than reservoirs, including canals.

## Master Plans

Ideally, all lands bordering surface waters should have an overall plan for developing and managing the properties. A plan should be developed cooperatively among all agencies concerned and be reviewed periodically, as every 3-5 years. On federal projects this means that the federal agency directly responsible works with other federal groups, state, county, and municipal authorities to develop the master plan. Leadership and ultimate authority for decisions should rest with the agency controlling the land.

The master plan being developed cooperatively for Corps of Engineers'

lands along the Upper Mississippi River is one example of excellent progress being made to utilize available soils, waters, and vegetation on a sound ecological basis for wildlife and people. The primary objective is to provide a blueprint for land use and the land user in order to achieve orderly development. Potential conflicts in activities and resource destruction are minimized and avoided by allocating permitted uses for specific areas. These are shown on maps.

All permitted activities are arranged in an order of priorities, from public recreation at the top to private development at the bottom. Recreation-undeveloped is the highest priority use on the project. This classification system minimizes the impact of recreational activities on valuable wildlife resources. All activities are controlled by issuing term leases, licences, and permits to other agencies, private groups, and private individuals. Through such arrangements thousands of acres are made available to states for fish and wildlife management on the Mississippi River, and at other federal water projects.

This approach of having a master plan for land use and issuing permits to guide development and activities of land users is also being employed by counties having rural zoning ordinances. Professional planners are advocating wider use of the technique on both government and private lands.

Purchase of agricultural and especially forested land along natural rivers and lakes for subdivision and resale is expanding, particularly where water areas are located within less than a full day's drive from human population centers.

This increasing demand for property fronting on water has stimulated professional planners to devise new sections for shoreline protection in county zoning ordinances. Two Wisconsin counties (Buffalo and Washburn), both small in population and basically rural, adopted truly progressive zoning ordinances in 1965. Pertinent parts of these fine ordinances are summarized here because they could be inorporated into any master plan and serve as ideal guidelines for development of any shorelands, whether they be public or private.

Buffalo County's new ordinance was established on the basis of information from a detailed soils survey, the first such use of soils survey data in Wisconsin and very possibly the United States. The objective was to match activities with soils capable of accommodating the land uses. Buffalo County flanks the Mississippi River. Certain areas are subject to flooding. The soil survey delineated soils unsuitable for septic tank operation, incapable of absorbing effluents, and likely to cause water pollution. Development is restricted on these floodplains.

Washburn County's new ordinance is aimed at preserving the beauty and quality of its fine lakes. The stated objective of the shoreline protection section is to promote the best development of inland waters and certain portions of their shorelands by (1) maintaining natural conditions and (2) preventing pollution, siltation, and destruction of fish and wildlife producing areas. Cottage and homeowners are protected from locating in areas unsuited for operation of private sewer and water systems. No

buildings, including private sewage disposal systems, are permitted within 50 feet of the specially defined high water mark. Changes in existing shorelines, such as excavating, dredging, filling, or terracing, are allowed only under written permit. Likewise, tree cutting between the shoreline and water setback line for buildings is by written permit only. Minimum width and total area are established for lots to provide each property owner with adequate space.

Many features of these new zoning ordinances applying to private lands could be incorporated into master plans for government lands along surface waters. Much could be accomplished for maintaining essential habitat for fish and wildlife, while providing an attractive landscape for people. Resource managers could benefit fish and wildlife in states and provinces by supplying dynamic leadership in helping people understand the need for and values of having a master plan to guide development on both private and government lands along surface waters. Government lands and private lands in progressive counties could serve as demonstration areas to show other resource managers and state, provincial, and local government representatives what can be accomplished through management of land use and land user. In some states, such as Illinois (Lake Springfield) and Minnesota (Stump Lake), bodies of water used as sources of domestic water supplies also have development guidelines applied to their nearby lands. Such areas could also serve as fine demonstration sites.

## Individual Land Uses

Lack of time prohibits discussing, individually and fully, all major uses of lands along surface waters. Standards for many of these activities will receive attention by the Bureau of Outdoor Recreation, the new Water Research Institutes, and other government and private organizations. Only three major problems associated with the development and management of lands bordering surface waters are considered here.

1. Locating sewage disposal systems near surface waters.

2. Surveying, fencing, and posting certain federal lands.

3. Administrative procedures for handling grazing on Corps of Engineers' lands licensed to state wildlife agencies.

## Locating Sewage Disposal Systems Near Surface Waters

Existing procedures and criteria used to place sewage disposal systems on lands along surface waters are contributing to fish population and water quality problems. Two procedures are involved.

1. A minimum set distance, such as 25 feet, is used to set back sewage disposal systems from the edge of surface waters. Notice, this is not the edge of the floodplain.

2. Results from soil percolation tests are used to determine whether or not a soil is suitable to handle effluents.

These seemingly protective guidelines have permitted home construction on unsuitable soils. Subsequent leaching of nutrients and overflow of effluents in wet periods have contributed to the degradation of surface waters. Superabundance of algae and aquatic plants, beaches closed to swimming, declines in fishing success, and summer as well as winter fish kills are expressions of too many domestic wastes entering the water. These unsatisfactory conditions result, in part, from people not employing adequate planning and being overanxious to build the tax base by approving home construction on unsuitable soils.

Results from soil percolation tests have also misguided people. Studies, especially during the past 6 years, have demonstrated that these tests yield highly variable information (Bartelli, 1962). The probability of securing the true percolation rate is only 30 percent when using 5 samples per site. Variation in test results are due to differences in samples, sites, and time of year the sampling is done. Many tests are reported to be conducted during dry, rather than at critical wet times. Estimated costs are considered prohibitive to arrive at statistically reliable percolation rates.

Only within the past few years have soil scientists developed more adequate guidelines to locate homes near water areas. The specifications are based on characteristics of individual soil types and ability of each soil to handle wastes in all seasons of the year. These improved guidelines should replace arbitrary setback distances and soil percolation tests. Modification of platting and sewage disposal laws and regulations would be involved in a number of states.

Resource managers dealing with fish, aquatic wildlife, and water quality can contribute substantially by encouraging use of soils information to guide development on government and private shorelands, where demands are increasing tremendously for seasonal and permanent homes. Such action could help prevent pollution, thereby benefiting essential aquatic habitat and helping to avoid costly corrective measures.

What is the influence of existing platting and sewage disposal specifications on fish and aquatic wildlife populations and their habitat in your state or province?

Surveying, Fencing, and Posting Certain Federal Lands

Arrangements vary for surveying, fencing, and posting federal lands licensed to state wildlife agencies. The Bureau of Reclamation surveys their lands. Fencing and posting is done by state wildlife agencies. However, states can draw from the Bureau's pool of soil and water conservation funds for authorized practices, including costs of fencing materials. States supply the labor, erect the fences, and post the areas with their own signs.

The Corps of Engineers generally does not survey, fence, or post their lands before licensing them to state wildlife agencies. States bear all costs for these practices. Except for federal signs around cluster developments

and water control structures, the Corps does not fence or post its boundary lines. Areas in the vicinity of water control structures are usually posted, developed, and provided with fine educational materials.

Arrangements of the Bureau of Reclamation for surveying and fencing lands are considered by some states to be superior to those provided by the Corps of Engineers. This is particularly true where receipts from land uses, such as grazing, are returned to counties instead of the wildlife agency. Some states feel the Corps should survey their lands before licensing them to the states and provide funds for soil and moisture conservation purposes, including fencing. Limited state funds could then accomplish more development.

Fencing is especially important in western states to achieve proper management of vegetation. Fencing is needed to protect soils from erosion, to provide food and cover for wildlife, and to keep cattle out of recreation areas. Where trespass grazing is not involved, property boundaries should be posted to aid people in using the public lands.

Procedures For Handling Grazing

In some western and midwest states, administration of grazing has recently become an issue on lands licensed to state wildlife agencies by the Corps of Engineers. Director Wendell Bever of the Oklahoma Department of Conservation polled the states on the problem in 1965. Eleven of 48 states reported concern over the recent shift in administrative procedures. Included in the eleven were 5 states of the Association of Midwest Fish and Game Commissioners (Iowa, Missouri, North Dakota, South Dakota and Ohio).

For an unknown number of years prior to 1962, state wildlife agencies administered the grazing program on perimeter lands licensed to them by the Corps of Engineers. Income from granting grazing privileges was used by the states to develop further the licensed lands to benefit wildlife and to provide facilities for public use. Notice that under this system the state administered the individual grazing permits, the state established and enforced quotas on animal units per month, and the state wildlife agency received the income from grazing and used it for additional development. Counties did not share in the receipts from granting grazing privileges under this arrangement.

Three years ago (1962) the Corps of Engineers modified their procedures for handling grazing. Under the new system the Corps administers the individual grazing permits, in accordance with requests from state wildlife agencies and their recommendations for animal units per month. Income received from grazing rights granted by the Corps is split between the state and federal governments. Twenty-five percent of gross receipts goes to the federal government and 75 percent is returned to the state. The state's share is distributed to the counties in which the project is located and is used for roads and schools. Notice that under this new system the wildlife agency does not share in the income from grazing.

Reports indicate that this new administrative arrangement presents two major problems.

1. It is awkward for two agencies to administer the grazing program, and enforcement of grazing quotas is more difficult.

2. Loss of income from grazing has forced state wildlife agencies to finance land development with funds from other sources.

Some states indicate that development efforts have been curtailed due to the loss of grazing receipts.

To resolve the grazing problem, Director Bever recommends that state wildlife agencies be given complete jurisdiction over grazing on Corps' lands licensed to them and receive the fees involved. He suggests that terms of the Corps' contract with states be similar to those used by the Bureau of Reclamation.

Essential features of the contract with the Bureau of Reclamation are reported to be satisfactory to the states. The wildlife agency is granted the right to develop and manage projects and to utilize all funds received from this effort on the lands, as long as the public need is, in the opinion of the Bureau, best served by such use. Income is accounted for on an annual basis. Excess of receipts over expenditures can accumulate to $10,000. Surplus funds are transferred to the Bureau of Reclamation.

This issue in handling grazing on Corps' lands licensed to state wildlife agencies is largely one of economics. Wildlife agencies need income for developing and maintaining lands along reservoirs for wildlife and people. Individual counties want revenue from lands removed from the tax rolls.

There is need to develop a uniform method for handling the financial aspects of managing grazing lands near water areas that is acceptable to all agencies concerned. This discussion merely focuses attention on the fact that different administrative procedures are employed by different federal agencies for granting grazing privileges. The ultimate solution to the problem remains to be worked out.

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In summary, working relations and arrangements between federal agencies and states in managing lands along surface waters have improved considerably in recent years. Benefits to fish and wildlife have been substantial, and could be even greater in the future. Many opportunities exist for intensive development to benefit farm, wetland, and forest game, as well as people. But additional effort seems needed to evaluate and possibly realign arrangements for financing development and management practices. Lack of funds will probably force states to pass up some development opportunities for wildlife.

At a time when there is a quest for quality in resource management, a goal of having government and private shorelands managed to show proper resource use would seem most appropriate. Actions by groups, such as this Association, will determine if such a desirable goal is achieved.

References Cited

Bartelli, L.J. 1962. Use of soils information in urban-fringe areas. J. Soil and Water Conser. 17(3): 99-103.

If we have time, we can show some slides. These slides have been accumulated over the last few years. They may be used to illustrate the points covered. They show some beautiful waterfowl habitat and shoreland developments, both good and undesirable. We will wait to see if the projector will work. (Regrettably, the projector did not work).

MR. GALE: I open the session to questions now.

MR. THREINEN: I have a question to ask Mr. Gruenewald. Have they gotten into any water zoning in rivers and streams, and what is the nature of it?

MR. GRUENEWALD: We have gotten into river zoning. I would say that in the neighbourhood of 40 to 100 are in rivers. We control the speed and operation of small boats. The regulations govern the power of small boats only. We cannot control the function of large boats.

MR. GALE: I have a question to ask Mr. Gruenewald. You mentioned that you have a Slow No Wake type of regulation. Have you considered a horsepower regulation?

MR. GRUENEWALD: We do limit horsepower on state-owned lakes. On all public waters we have set a slower no wake speed.

MR. EARL ROSE (Iowa): I believe there is a bill in Congress, No. S.1229 for managing federal funds for federal projects. We have tried to determine the source of federal funds, but haven't been able to determine what the source is. Would it require BOR funds or funds from the Corps itself?

MR. JAHN: My understanding is that Corps funds would be used and BOR funds may be used at specific projects. Hayden Olds may wish to comment on this point.

MR. HAYDEN OLDS (Bureau of Outdoor Recreation): It may involve BOR funds, but direct appropriations will be used largely.

MR. CHARLES N. LLOYD (Wisconsin Conservation Department): In your study of zoning to benefit fish populations, what is the maximum set-back distance?

MR. JAHN: Actually the Corps is not using a specific distance. They consider the whole area and go into the field and make their evaluations there. There is a mixture of distances determined in the field on the basis of the habitat itself.

MR. LLOYD: The Wisconsin Board of Health has it arbitrarily set at 25 feet from the shoreline.

MR. JAHN: I don't think that any arbitrary distance is going to be the answer. Fifty feet set-back from the edge of a stream can still give you trouble when floods occur in spring. In Wisconsin's Bill 753, the point from which you measure the set-back distance is from the edge of the lake. In some subdivisions effluents cannot be handled properly and ground water pollution occurs.

MR. THREINEN: Speaking of ground water pollution, a high density of people in an area is going to cause oxygen depletion in the ground water supply. This has considerable meaning in glacial lakes. Today in the ground water system you don't get replenishment. We don't want a high density of people in some of these situations. We are going to damage that resource. I believe there is a great need for research in this field. Dr. Tarzwell will bear me out.

MR. RUSSELL STUART (North Dakota Game and Fish Dept.): Larry, have you contacted the Corps of Engineers on handling grazing rights? Since 1962 they no longer will licence grazing rights to the states.

MR. JAHN: That point was discussed. Under existing policy, the Corps of Engineers administers individual grazing permits in accordance with requests from state wildlife agencies. Income received from grazing rights is split between the state and federal governments. Twenty-five percent of gross receipts goes to the federal government and 75 percent is returned to the state. The state's share is distributed to the counties in which the project is located and is used for roads and schools. Under this system the wildlife agency does not share in the income from grazing. Prior to 1962 state wildlife agencies received the income from grazing and used it to develop the lands further.

Some states feel that the leased grazing lands are not providing adequate environments for wildlife. Overgrazing is a problem. In some states wildlife agencies want to again share in the income from grazing and use their portion of the funds for developments to benefit wildlife.

Handling receipts from grazing is an involved economic problem. Presently, the bulk of the funds are used by people at the grass-roots level. This arrangement may strengthen local support for Corps projects.

MR. GALE: Perhaps there is time for one more question.

Mr. C.A. LEWIS (Biologist, Ontario Dept. of Lands and Forests, Sault Ste. Marie):

To what extent do conservation officers become involved in boating regulations?

MR. GRUENEWALD: They enforce the Act. Other enforcement agencies may enforce it too.

CHAIRMAN SHIELDS: I enjoyed the panel program, as I am sure all of you did. Thank you.

Now we come to the coffee break.

3 p.m. - (COFFEE BREAK).

(A movie, entitled "Save Our Lakeshores", was shown at the same time.)

CHAIRMAN SHIELDS:

I now call on Mr. J.D. Roseborough, Supervisor of the Fisheries Section, of the Ontario Fish and Wildlife Branch, to lead the panel discussion on Managing Fish Populations. Mr. Roseborough.

MR. ROSEBOROUGH (Ontario):

MANAGING FISH POPULATIONS

In looking over the last five years Transactions of the Association of Midwest Fish and Game Commissioners, I noted that the occurrence of the word "fish" was infrequent in the program of the Association except that each year it was in the title. It is, therefore, a pleasure to moderate a panel on the subject of "Managing Fish Populations" which firmly places fisheries in the program of this Association. I hope that fisheries will be a subject for consideration for many years to come.

Fisheries management in Ontario has paralleled the management in many of the midwest States. Like many of your agencies we have reduced the number of warmwater fish plantings and have actually closed a half-dozen bass, pickerel and whitefish hatcheries. We have also effected many changes in fishing regulations primarily directed towards providing more fishing by liberalization of regulations and allowing the public to increase the harvest of fish which are available.

In many parts of the Province we have, through surveys of lakes and fish populations, been able to introduce commercial fisheries where they formerly did not exist in an effort to make use of the resources available to us and to have both sports and commercial fishing exploitation going on at the same time.

Much of our fisheries management involves the planting of various

species of trout and we are currently involved in a program of modernization of our hatchery facilities throughout the Province.

However, our attempts at actual fish manipulation have been meagre. The paper on the use of selective chemicals for population and plant control appears to be one of particular significance for use in manipulating fish populations. We are looking forward to hearing this paper and others in future years concerning the management of fish populations rather than the management of the people making use of them.

Any one of our field biologists in the twenty-two districts in the Province of Ontario could have done a commendable job in discussing commercial-sports fishery relationships. One of the men in Ontario who has been most involved in a commercial-sports fishery is Mr. Jack Christie, a research biologist at the Glenora Fisheries Research Station on Lake Ontario. Mr. Christie has been employed for a decade at Glenora, where he has been studying whitefish in relation to the commercial fishery and yellow pickerel or walleye in relation to both commercial and sports fisheries. He has also recently been involved in the development of trawling in Lake Ontario and one of his current projects, among many, is the planting of Kokanee in the Bay of Quinte area of Lake Ontario. Mr. Christie.

MR. W.J. CHRISTIE (Biologist, Research Branch, Ontario Dept. of Lands and Forests, Picton, Ontario):

## ANGLING-COMMERCIAL FISHING RELATIONSHIPS IN THE GREAT LAKES

### Introduction

The problems associated with managing sport and commercial fisheries together in the same waters have been confounding attempts to settle them for many years. The upsurge in recreational fishing during the last twenty years has made them particularly acute. I believe that the problems in the Great Lakes have reached the stage where the very future of the commercial fisheries may depend on their solution.

The North American Fish Policy (1963 Ed.) gives the following statement on the matter -

"When conflict between fisheries arise settlement should depend upon the pertinent facts in each case. Many waters will support several types of fisheries to their mutual benefit. Where actual competition exists the basis for proper regulations should be objective appraisal of public benefits."

This rational approach has been generally accepted by the management agencies. It has been found very difficult to apply, however, for the main reason, in my view that even after many years of contact the public still

does not understand or accept the commercial fisheries. The commercial fisheries of the Great Lakes have been seriously impaired by declines in the off-shore stocks and I believe that the steady attrition of their in-shore fisheries may bring about their outright demise. I feel that there is room for both kinds of fishery and that full utilization will only be possible with conjoint use. This requires full partnership status for the commercial fisheries, however, and this cannot be achieved without vigorous programs designed to win support for full utilization.

This paper will not deal with questions of economics. It seems generally accepted that when "actual competition" for the same fish is proven then the fish should be taken by the anglers, for whom they have a much higher dollar value. Competition for space must also be recognized as a possible type of"actual competition." Where a large angler catch is prevented for example by a lower value commercial gill-net catch in the same area, the angler catch should have precedence.

The Problems of the Commercial Fishery

By way of further background I would like first of all to elaborate on the present plight of the commercial fishing industry of the Great Lakes.

The commercial fisheries have been subjected to innumerable restrictions over the years. Aside from those designed for the protection of the prime fish stocks (and the parochial interests of other commercial fishermen) there were species and season regulations imposed in the interests of the angling fisheries. The protection of the often numerically limited and localized stocks of bass, muskellunge, etc. were of obvious necessity. Certain closures of in-shore waters and shoals to gillnetting in particular were also clearly required during the summer months to allow angling to go on. Still other restrictions on the in-shore grounds had more obscure bases but in the earlier years the commercial fisheries had ample alternatives.

The degenerative changes in the species composition of the commercial catch are well known. Valuable stocks of lake trout, whitefish and ciscoes have declined over the years leaving only lower value species like smelt, chubs and alewife in their place. As a result the fishery has had to rely increasingly on the warm water varieties like carp and perch. As Baldwin and Saalfeld pointed out ("A prospectus for investigations of the Great Lakes fisheries", 1964), even though the landings have held at more than 100 million pounds per year for all the lakes, the value to the fisherman has dropped by at least 30% in recent years. The necessary adjustments in catching, processing and marketing techniques have lagged far behind these changes with the result that many fishermen have had to leave the trade because of the economic stresses.

The changes brought about by the invasion of the sea lamprey into the upper Great Lakes show promise of being reversible and in those areas an important current problem appears to be retaining a viable fishery until trout fishing is once again profitable. In the lower lakes on the other hand, the process of eutrophication is altering the aquatic environment so profoundly (cf. A.M. Beeton, "Eutrophication of the St. Lawrence Great Lakes" Limn. and Ocan., April 1965) that there is some doubt that the fisheries can return to their previous form.

It is my view that if the fisheries are to survive they need additional freedom to fish. They need first of all of course, to have help getting started with processing and marketing the cheaper kinds of fish. Of equal importance, however, they need to make themselves versatile and mobile, and this is not possible unless they have freedom of movement in the in-shore areas as well as in the off-shore areas. When a crop of any particular species is available in any area, within the limits set by "actual competition", they should be able to take it with whatever gear is the most efficient. Any processing facility which is developed will need a broad range of species to smooth out the between- and within-season fluctuations in availability, and this makes the use of the in-shore varieties essential. Further, even if the fisheries could become strictly offshore operations taking smelt and alewife with trawls, this would scarcely be in the best interest of full utilization.

The contact between the anglers and commercial fishermen is increasing in the offshore as well as the inshore waters so future friction may be anticipated there as well. There has been a striking trend among the anglers towards larger and more sea-worthy boats. In Lake Ontario, for example, the formerly little-exploited stocks of bass around the offshore shoals and islands of the lake's eastern basin, have just in the last few years come under heavy fishing pressure. It is similarily possible that the stocks of rainbow trout of the Great Lakes could come under increased angler exploitation in the open waters. In Lakes Superior and Michigan where "deep-sea" trolling for lake trout was carried out in the pre-lamprey days, one can particularly see competition between the fisheries developing after the restoration of the lake trout has been completed.

Walleye Problems

Most recent angler-commercial fisherman disputes have centered on the walleye. Many areas of the Great Lakes saw great increases in this species following the war. This coincided with the great increase in recreational fishing and these stocks came to support important angling fisheries as well as intensified commercial fisheries. The fisheries were separated by season or area in many cases, but it was predictable that when declines of even temporary duration occurred, the sportsman would blame the commercial fisherman.

The catch fluctuations have been extreme, but the total commercial yield was very high in the peak years. The size of the sporting catch in total is not known but it is generally felt to have also been great in the good years. The clearly high population densities along with the frequently observed wide-ranging migratory habits distinguished the walleye from the inshore game fish stocks, and the species seemed particularly well suited to joint exploitation.

Studies which have been reported indicate that as might be expected the walleye stocks have been subjected to exploitation rates varying from

extremely high to extremely low. For example, Pycha's ("Recent Changes in the Walleye Fishery of Northern Green Bay and History of the 1943 Year Class", Trans. Am. Fish. Soc., October 1961) view of the Green Bay walleye situation was that superimposition of the intensified sport fishery on the already efficient commercial fishery, caused over-exploitation in the biomass sense. In Lake Ontario on the other hand, the Bay of Quinte stock which I have studied appeared relatively under-exploited during the past 10 years in spite of the efforts of both agencies. In no walleye stock which has been reported on, as far as I am aware, has there been any indication that parent stock has any bearing on year class strength. The major points of general agreement in most walleye work are that the catch fluotuations have been mainly caused by variations in year class strength, and that these variations are extreme and as yet not predictable. The biological view has been, therefore, that protecting a large parent brood stock serves little purpose. On the Canadian side of the lakes at least, a number of investigations have been set up in recent years to settle the conflicts in these rational terms. Significant declines have occurred in many of the walleye stocks however, and the commercial walleye fisheries have been under increasing public criticism. There have been efforts in Ontario to make the walleye strictly a game fish, and by present indications these efforts will likely increase.

The walleye is the last of the four traditional premium species (lake trout, whitefish, lake herring are the others) remaining to the commercial fisherman in some areas of the Great Lakes and it is of particular importance at the present time on this account. When it disappears both fisheries suffer, of course. The commercial fisherman seems to have a better long-term perspective for these situations. He or his family have operated through many major fluctuations of many species. The angler, or more particularly the tourist outfitter, may have just established since the war but this of course is a long time in people-years if not in terms of fish cycles. The tourist outfitter is particularly hampered in that he cannot move his operation to another location to find other species. Even if he does not blame the commercial fisherman flatly for the decline of the fish stock, he desperately demands some help and this is quite understandable.

In some cases the anglers do not have the larger fish available to them, or the commercial fishery can persist in exploiting the mature stock economically during the run to the spawning grounds, and thus persist a few years longer, but in the end without recruitment both fisheries fall. This sort of delayed reaction seems particularly irritating to anglers and usually brings outcries in favor of saving the spawning population.

The species itself is important enough to the commercial fishery but it seems very important also that if the commercial fishery is blamed for a stock collapse and is restricted in desperation, the danger is that the restriction will be permanent. The descriptions of the Green Bay walleye fishery given by Dr. Hile (with G.F. Lunger and H.J. Buettner, "Fluctuations in the Fisheries of State of Michigan Waters of Green Bay" U.S. F.W.S. Fish Bull. 75, 1953) and by Pycha (op. cit.) provide an excellent illustration

of this. The 1943 year class created a tremendous boom in walleye fishing and the sporting interests attempted to have the Michigan legislature outlaw the commercial fishing. Good sense prevailed, however, and the restriction failed of passage. After a decline in catch which continued from 1951 through 1954 as the year class of 1943 disappeared there was a sharp upswing in production through 1955 and 1956 caused by good 1950, 1951 and 1952 year classes. Had the restriction on commercial fishing been introduced it surely would have been difficult to convince the angling interest that this return of the fish was caused by anything other than this "conservation" measure.

Proof of the usefulness of the closures does not seem to be a requisite by any means, however, and in most cases the changes are irreversible. They may also involve more species than just walleye and on the whole are very difficult to deal with in rational terms.

Obstacles to Rational Management

A central problem is that very few members of the angling public understand anything at all about the commercial fisheries and so they are willing to believe the worst of them. At base perhaps is the fact that the average angler who takes pride in his skill and patience must almost instinctively resent anyone who uses "unsporting" equipment. The belief that the numerically heavy catch of the commercial fisherman has a direct lasting effect on his creel is a natural extension of this resentment.

In this same connection it is significant that the public often readily accepts coarse fish removal programs carried out by commercial fishermen. It is quite apparently easier for people to picture the commercial netter as a depleter than as a harvester. This is obviously not a satisfactory long-term status for the industry. Until improved marketing and catching methods increase the margin of profit in taking the cheap species I believe that the more heavily-capitalized operators (and these will be the leaders in the new fisheries) need some higher priced fish in their catch. Even with these improvements there is question as to whether the fisherman could operate efficiently at the extreme cropping rates which would be required to keep the coarse fish at minimum population levels. It is an important distinction between the two kinds of fisheries in fact, that the commercial fishery will usually be interested in taking the harvest at or near the point of maximum biomass while the anglers will usually be more interested in maximum numbers of fish. Another consideration with respect to coarse fish harvesting is that the commercial fishery would always be in a tenuous position by reason of future shifts in the angling or eating preference. I feel there is little question that the choice is between a viable efficient commercial fishery sharing the inshore waters with the anglers, or none at all.

As indicated earlier competition for space has usually been settled by taking commercial fishing out of major angling areas during the angling season. In some cases fishermen have been unreasonably deprived of valuable spring and autumn catches on this account, however.

Gillnets create mechanical obstructions which can actually interfere

with the angler catch, but the abolition of impounding nets (often not taking game fish at all) can only be taken as further proof of the general mistrust of commercial fishing.

If more proof of the public antipathy were needed, it can be seen in the facts that the alterations in commercial fishing seasons are seldom in the direction of more overlap with the anglers and examples of areas reserved specifically for commercial fishing must certainly be rare. Often cases where competition for space is claimed by the angling interests, they are really only speaking of the nuisance effect and their catches are not really affected. In at least one case the tourist outfitters claimed to have lost revenue because the sight of the commercial nets alone was enough to convince their tourist guests that the area was fished out. This sort of problem illustrates the need for carefully defining the nature of the competition because clearly the commercial operator could be protected from this extreme emotionalism by good public relations.

The commercial fisherman on his part has gone to no trouble at all to sell himself. Because of his historical seniority he has often been unwilling to make room for the anglers until forced. Some, in fact, have been known to deliberately make nuisances of themselves to assert their seniority, refusing to recognize change. The commercial fisherman is usually inarticulate and always independent. This not only increases the misunderstanding of the anglers he meets,but it acts to prevent his associations from being strong in the defence of the industry. He is often not careful enough with the disposal of spoiled or otherwise unusable fish and to the angler to whom each fish is relatively much more important, this can be particularly offensive. The fishing gear is often not well maintained and the outfits give little impression of their actual value. Net buoys are often as small and inconspicuous as the law allows, and this tends to make the fishing operations look surreptitious. The reduction in the numbers of fishermen alluded to earlier has acted to eliminate the smaller and less efficient commercial operators and this may be a factor which could improve relations between the groups in future. In any case, however, the industry must recognize that major efforts to accommodate to the present-day conditions are required. Without such efforts they have no hope of a permanent place in the inshore waters.

The futility of trying to establish a new commercial fishery without the necessary public relations to develop public support was emphasized by Carl D. Riggs ("Unexploited Potentials of our Fresh-Water Commercial Fisheries" Trans. Am. Fish. Soc., 1957). It appears to me that this applies to established fisheries as well. The public antipathy erodes the fisheries, and the prospects of ever generating public support decline as the fisheries grow smaller and weaker. The public is even more likely in my view to become sympathetic towards a full-time professional with modern gear, than towards a small operator who will likely be only a part-time fisherman. Thus the process would appear to be an accelerating one.

Against this background of mistrust and misunderstanding it is not hard to see why people have been hard to convince of the merits of maximum utilization management. We are not even in many areas able to adjudicate properly in disputes involving competitions for space because of the emotionalism, and certainly an investigation which finds in favor of retaining a commercial fishery would also have little chance for sympathetic reception of the recommendation. In closing I would like to stress once again that I believe that full utilization management is not getting a fair trial and it cannot in the present atmosphere. The commercial fisherman can do a great deal to help his own situation but the role of the fishery manager is even more important. I believe we should redouble our efforts to inform the angling public, particularly regarding what we know about walleye. We should insist that the letter of the North American Fish Policy be observed, with each future conflict to be assessed carefully and arbitrated on the basis of the facts. Finally, in the most neglected area of all I believe we can do a great deal to inform the public about the commercial fisheries - the kinds of gear they use and how it works, the kinds of fish they are interested in and the sorts of areas they locate them in. Thank you.

MR. ROSEBOROUGH: Thank you, Jack. Robert Lennon is the Chief at the LaCrosse Fish Control Laboratory, U.S. Bureau of Sport Fisheries and Wildlife in Wisconsin. I think that we are all looking forward to hearing about some of the means which might be used in actually manipulating fish populations. Dr. Lennon:

DR. LENNON (LaCrosse Fish Control Laboratory, LaCrosse, Wisconsin):

USE OF SELECTIVE CHEMICALS FOR POPULATION AND PLANT CONTROL

I.

The Fish Control Laboratories at La Crosse, Wisconsin and Warm Springs, Georgia are fully operational. Staffs of fishery biologists and chemists make a two-way approach to fish control; first, by bioassay of selected chemicals against a variety of fish in waters of various qualities and temperatures; and second by physiological investigations on target fishes. Our efforts at present are devoted to final studies on a promising fish toxicant, to potential synergists for toxicants, to disease-treatment compounds, and to certain anesthetics.

The promising toxicant is antimycin A (FINTROL), an antibiotic-type product of Streptomyces. It has been tested against more than 30 species of fresh water fish, and most of them are killed by a few parts per billion. Fortunately, carp are among the more sensitive species. Within the past year, field trials have been made in ponds in New Hampshire, New York, Georgia, Arkansas, Wisconsin, and Nebraska. Ayerst Laboratories, New York (affiliated with Ayerst, McKenna, and Harrison, Montreal) applied in June to the U.S. Department of Agriculture for registration of the compound as a fish toxicant.

Work is far advanced in evaluating the acute toxicity of 22 disease-treatment compounds to rainbow trout, brown trout, lake trout, brook trout, channel catfish, bluegill, and largemouth bass. These data are to be published within a year.

We are close to fulfilling the requirements of the U.S. Food and Drug Administration for clearance of MS-222 (tricaine methanesulfonate) as an anesthetic for rainbow trout, brown trout, lake trout, brook trout, and channel catfish. Very extensive studies on the toxicity, efficacy, and residues of the drug in fish of various sizes in waters of different temperatures and qualities are involved. Similar investigations on quinaldine and a new anesthetic are well underway.

At La Crosse, we are host to a 4-man, Fish-Pesticide Unit, a subdivision of the Fish-Pesticide Research Laboratory at Denver, Colorado. The Unit employs our bioassay facilities to assess the acute toxicity of pesticides to fish. It also uses a battery of outdoor pools to detect the long-term, chronic effects of selected herbicides on fish. Two years ago, thespring-to-fall study was made on sodium arsenite. Last year, diquat was tested. This year, simazine was the chosen herbicide.

II.

Sport fishery workers must come to recognize that new and great responsibilities have been forced on us in these post-Silent Spring, post-thalidomide, post-lysergic acid days. Things are vastly different now than when rotenone, toxaphene, and TFM were being adapted to fishery use. Any chemical which we develop as a fishery tool must be registered by the U.S. Department of Agriculture. The process of registration now includes close scrutiny of an application by the Pesticide Review Board, composed of Agriculture, Food and Drug Administration, Public Health Service, and Fish and Wildlife Service. Comprehensive data on the toxicity, efficacy, and residues of the chemical in target fishes are needed. Moreover, the effects of the candidate compound on other aquatic animals, aquatic plants, and mammals must be ascertained. If treated fish are to be used as human or animal food, the Food and Drug Administration requires additional information regarding the chemical's safety. Chemical companies claim that the research and application process to register a single compound costs over a million dollars.

It is said that sales of rotenone for fishery use total about $1.5 millions a year. The annual gross on MS-222, the more widely used fish anesthetic, is about $60,000. These statistics indicate discouraging small markets to industry when compared to high research and clearance costs. Also, representatives of some companies have talked with fishery people about the needs for new tools and about potential markets. They became discouraged when consistently informed that the new tools must be "dirt cheap" before sport fishery people could afford to use them. Too often, the price of toxaphene is presented to industry as a yardstick.

The "dirt cheap" criterion for new tools must be abandoned. New, safe, and efficacious tools are going to cost more than the old tools. If we do not recognize this fact, the new agents so badly needed are going to be a long time in coming.

The development of chemical tools is complicated further by unresolved differences between industry and government in the matter of patents. The companies contend that they must possess exclusive patents to recuperate their investments. On the other hand, the government has much research invested in fish and wildlife tools and insists on its right to public patents. As a consequence, some companies refuse to work with government agencies without contracts. Efforts are in progress to draft a model contract -- one which will be fair to both sides in the matter of patents, publication rights, production, etc. -- but no early solution is expected.

We are in favor of contracts between our agency and chemical companies. We have had several compounds show promise as fishery tools, and upon approaching the contributors for cooperation in developing them, we learned that the chemicals were owned by foreign firms. The American companies which submitted them to us were merely agents of overseas interests, and not free agents. The risk here is that the foreign firm may not be interested in developing the compound as a fishery tool.

III.

In view of the foregoing, the following conclusions are obvious:

1. New chemical tools must be registered or cleared by regulatory agencies. This is a long and expensive process.

2. Markets for the tools are relatively small.

We are interested in perfecting selective tools for fish and plants. Industry, on the other hand, argues with merit that we should concentrate on tools which have the widest possible application. Thus, we must do some hard thinking about each potential tool. There are alternatives worth considering. First, is the compound selective to certain target fish? Second, if not strictly selective,can it be applied in certain ways to achieve selective effects? We believe that it is to our advantage to study potential tools with these alternatives in mind. Without doubt, there is much promise in selective application of general tools. Can we as fishery managers disregard our responsibility to learn more of the ecology and life history of target species? Must we continue with the one-shot, total-lake approach to fish control, for example?

I believe that we must now become much more subtle in our efforts to control pest fish and plants. Given better tools is only part of the solution to problems. We must improve our application of them. This includes:

1. Appropriate formulations for known situations;

2. Careful determination of target seasons, localities, or situations;

3. Improved mechanics for applying tools;

4. Possible use of auxiliary tools - mechanical, electrical, or other chemicals - to achieve desired results.

5. Thorough pre-treatment and post-treatment surveys.

IV.

Before concluding, I would like to acknowledge the splendid sooperation we have received from National Fish Hatcheries, state conservation departments, other agencies, and companies. The fish, chemicals, and information supplied so generously to us are absolutely essential to the research in fish control. Moreover, we would like to reciprocate at any time in any way possible. We welcome your suggestions and ideas. Thank you.

MR. ROSEBOROUGH: Thank you, Dr. Lennon. Unfortunately Clarence Clark, Assistant Supervisor of the Fish Management Section in Ohio, phoned yesterday to advise that he was having trouble with his back and was unable to get out of bed and be in Toronto to present his paper. He has sent his paper, however, and it will appear in the Transaction. In order to get both sides of the angling regulations story - liberal or conservative - Tom Evans looked for someone yesterday who could present the liberal view in place of Clarence Clark. Woodrow Fleming, the Director of the Division of Fish and Game, Department of Conservation in Indiana, who I see on the program is also the Chairman of the Auditing Committee, the Nominations Committee and the Federal-State Relations Committee, agreed to present the point of view of a state having liberal angling regulations. So, Mr. Fleming is a testimonial to the adage "Ask a busy man.....". Mr. Fleming. *

MR. FLEMING:

LIBERALIZED FISHING REGULATIONS

One of the disadvantages of getting conned into pinch-hitting is that you can't turn the job of preparing a speech over to someone else. You're far away from home and you've just got to dig it up yourself.

It came as a coincidence yesterday, just a few minutes after I had been asked to fill in on this part of the program, that I was talking to C.R. Gutermuth. "Pink" is a former Hoosier Department of Conservation Director to whom we point with pride, of course. He was with the

* "Importance of Angling Regulations - Liberalized Angling" by Clarence F. Clark appears as APPENDIX II on page 174.

Department of Conservation in Indiana in one capacity or another from about 1933 to 1943. He related how the idea of more liberal regulations was considered by the Department at that time and how some study and investigation was conducted. However, more cautious administrators followed him and the closed season on our warm water game fish was not opened the year round until about 1947 or 1948. Of course, previous to this and about this time or a little bit before it, Eschmeyer had been conducting his studies down on the T.V.A. impoundments, and Ohio and some of our neighbouring states had already taken what was considered rather bold steps. We were not at all the first to become a little bit more liberal.

At the time that we opened our season the year round on the warm water species, the fishermen were promised that a test would be made on four lakes. Two lakes we might describe as sand-bottom lakes and two muck-bottom lakes, although each of them had some marl deposits in them. The former regulations of a closed season from May 1 to June 16, a so-called spawning season, and a 10-inch length limit on bass and a 5-inch limit on bluegills and crappie were maintained on one of each type of lake and year-round open season with no length limit was maintained at the other two lakes in this study. A complete creel census was taken at each of the four lakes.

Obviously, this study was a public relations project. The biologists were convinced or they wouldn't have recommended a year-round open season in the first place. So, call the effort wasted if you will, it seemed to be a way of getting a job done, I presume, but this was before this was my responsibility.

The study lasted four years and the interesting thing about it was that by the time our research people, in their painstakingly careful way got around to making the results known, the fishermen were so happy with fishing at the time of year when fishing is best in Indiana, and realizing that reproduction, after giving it a try, was not going to stop, that it was still taking place in spite of year-round fishing and so much to the amazement of some of them that they forgot to even ask the results of the experiment. To this day I can't remember a single fisherman, either by letter or public hearing, ever asking, "Well, how did that come out?" So, it's pretty well accepted. Of course, there might have been another factor. About the time that these studies ended we discontinued the practice of annually dumping a can of fingerlings in every stream and lake of the state, and this may have taken the fishermen's minds off of protecting the bluegills. Now, we stock fish only in new lakes and in renovated lakes.

For a time we provided signs whereby local clubs interested in protecting bluegill spawning beds could post the beds during the months of May and June and give them a measure of protection. I suspect in some ways that it guided some fishermen to the spawning beds. However, somehow or other those signs have all become lost in recent years and we just can't find them anymore, when there is a request for them.

We do have a six-fish limit on any species of bass and a 25-fish limit on panfish. Now, this is not necessary in our mind to protect the species from being overfished or overexploited, but I believe it prevents waste. Although, as you know, only a small percentage of fishermen have the ability to catch a limit of fish, I don't feel that anyone needs more than 6 bass or 25 panfish. And, when the fisherman gets home and is faced with the job of cleaning the fish I think that even the fishermen will agree that our limits are sufficient. Besides, a bag limit is a stimulant to fishermen as something to try for and makes the sport more interesting. I think in this connection we have lost something in not having a closed season that we can open every year because it can be quite a party, as you know, opening the season, and that's a lot of fun.

As for size limits we figure that when fish grow as rapidly as they do in our good fertile lakes, they don't stay undersize long enough to matter anyway. We opened a renovated 1500-acre lake on April 15 of this year, spring of 1965. This lake was full of two-year old largemouth bass, bluegill and some crappies. We had a 12-inch limit on the bass and I'll explain the special reason for that later. Since April 15 of this year more than 12,500 bass twelve inches and over have been taken from this renovated lake that we've just re-opened in April. On opening day the bass were running about one out of four that were keepers or 12 to 13 inches, and, of course, three out of four that were being caught had to be returned. They were non-keepers. Today, now that the fish are about, let's say, 26 months old, they are averaging two pounds - the bass, I'm speaking of. The two-year old bluegill are running 8 to 9 inches. Now, that's in northern Indiana. Now, of course in southern Indiana, where it's warmer, they do better. I've got a right to brag a little bit. Well, not really do they do better in southern Indiana. In much of southern Indiana, let's say, our soils are poorer and fish food is more scarce in our lakes, ponds, etc. Of course, all of our water is of an impoundment nature, we have no natural lakes down there. Now, under these conditions, poor soil types in the watersheds of many of these, let's call them lakes, we hope the fishermen will catch a lot of them and catch them early so the food supply will be adequate for those that remain. So, we want it to be liberal. We want them to fish them hard.

Now, about this 12-inch limit on bass, I was privileged to be a guest late last winter of some fishery biologists from our good neighbouring state of Kentucky - some of the good men that work for Minor Clark. This was a tri-state fisheries management meeting, held annually a little bit southeast of us. There were biologists there from Kentucky, West Virginia and Virginia. Several of these fisheries men that were attending that meeting became very much interested in some work they are doing, using 12- and even 15-inch bass limits. They have two thoughts in mind. First, they have a management problem similar to our chief problem in Indiana and the problem that was recognized here by an earlier speaker.

Their bluegills become too abundant and become stunted at a size that is not attractive to the fishermen. Now, if the larger bass are creamed off all the time, as most of us recognize, there are still going to be plenty left for reproductive purposes, but possibly not enough bass large enough to be a serious predator on these 4 or 5-inch skinny, stunted bluegills that need thinning out. A larger size limit very probably doesn't put more pounds of bass in the lake, but it does tend to maintain that poundage in fish large enough to be effective predators. That is part of the theory, and for which they have considerable respect.

The other advantage is that a 12-inch bass may have been caught and released two, or three or four times while in the 10 or 11-inch size, and he provided some fun to two or three additional fishermen before he was sacrificed.

We, in Indiana, opened two new and very similar lakes this spring on June 16 in addition to the renovated lake I mentioned earlier. On one of these we placed the 12-inch bass limit and no limit at all on the other. We'll study these two through the creel census we'll take. Now the only thing we're really interested in studying here is the relation of the effect on the panfish of maintaining our bass poundage or bass population in a larger size.

Now, back to the renovated 1500-acre lake with the 12-inch limit that I mentioned earlier. We are again trying to learn something here. Previous to renovation we have had a 10-year run on this lake with a complete creel census and during those ten years there was no limit on bass or any other kind of fish for that matter as to size or numbers. It was wide open to the fisherman - take what he could. We will now, and starting with the 12-inch limit, be able to make a comparable study with a 6 bass, a 12 inch limit, and a 25 bluegill limit.

I want to mention only briefly aspearing regulation that we put into effect about three years ago, and that is, that we do have our lakes and streams open to spearing of rough fish, if I may use that term, in those streams that have a minimum flow of 1500 cubic feet per second. In smaller streams than that we do not have spearing at any time.

I think this might be of interest to some of you. This year we have rather stumbled upon something that public-relationswise has been very helpful. After our management biologists do a lake inventory and they prepare management, of course a somewhat technical report comes to our office. Our management supervisor then re-writes this report in a semi-popular, semi-technical style and releases it to the news media in the vicinity of the lake in question. I have been rather amazed at the wide use that newspapers and even farm magazines have made of this type of release. They are written just technically enough that editors don't know what to pull out to butcher them up, as they usually do most of our releases, so they just about print them verbatim and the fishermen just seem to love it. They take a little bit of pride at being able to talk a little bit about the technical side of fish management, and you are aware I am sure of the change in fishermen in this wise.

Yes, we are rather liberal in our regulations, I'll say now in closing, although not so liberal as some. I must add that much of my personal philosophy along this line came as a result of an experience as a student and worker under Dr. George Bennett of the Illinois Natural History Survey, and much of our philosophy and that of perhaps others has been influenced by their studies. I think that so long as largemouth bass produce as many as 109,000 eggs, as Dr. Carlander's recent report told us, smallmouth bass 20,000, bluegill 33,000, walleye 300,000, northern pike 272,000, sunfish 3,000, yellow perch 48,000 and so forth, we need not protect the breeding population for reproductive purposes.

However, we're all aware of this: there are people management

problems and policies to be made for the most satisfactory harvest of the resource, and these things we must recognize. Thank you.

MR. ROSEBOROUGH: Thank you, Mr. Fleming, for the information on the liberal approach to angling regulations.

Last, but not least, is a paper by Chuck Burrows, Supervisor of the Fisheries Research Unit in the Minnesota Department of Conservation. Mr. Burrows has been working in fisheries research in Minnesota for twenty years. He has been intimately associated with the setting of fishing regulations which, wherever possible, are based on research findings. He is a most apt person to speak about angling regulations. He has the hardest task since he is going to take the side of the conservative fish regulations. This is difficult in that if you were asked whether you are "liberal" today it is synonomous with asking whether you are "broad-minded". I think Mr. Burrows feels that the conservatism in fishing regulations in Minnesota is not based on public demand or lack of desire to harvest fish, but on biological information which leads them to more restrictive fishing regulations.

MR. C.R. BURROWS, (Minnesota Department of Conservation): Thank you.

## SOME CONSIDERATIONS IN THE REGULATION OF SPORT FISHERIES IN NORTHERN REGIONS

Yes, I want to talk about some of the considerations that we must give to the regulation of sport fisheries in a northern region and I want to use the terms "liberal" and "conservative" and ask that you do not take them with the political connotations that they usually carry. I don't think that I've got anything really to say that will be in conflict with what Mr. Fleming has said. I want to confine my discussion to the walleye, the northern pike, and the lake trout, which are the species on which we feel the pinch. Our regulation of the bass and the panfish, and our philosophy for the regulation of these fish, I should say, is not too much different than that of the state of Indiana, or Ohio, or states to the south. There is some danger, I think that people when thinking about fish may think like Gertrude Stein when she wrote that "A rose is a rose, is a rose." Fish are quite a bit different. The different species have different requirements. We cling to very limited, very small size limits, and we have seasons that protect these fish during the time of the year when they are most vulnerable. We seem to have remained apart from the wave of liberal regulations that followed the good work on the T.V.A. reservoirs and the southern farm fish ponds in the mid-forties. But, to understand our caution in applying data from these southern waters to our northern region, you have to consider the geographical location and our severe mid-continental climate. Where a bass in Georgia may grow to a pound in size in one season, it takes us at least four growing seasons to get the bass up to the same size. Among most species, with the exception of northern pike, our waters must support four year classes of juveniles along with the "catchables". A smaller percentage of the standing crop in northern waters is of a size that is acceptable to anglers. In southern United States, many game fish come into the catch as young-of-the-year, and there are times in the year when the entire standing crop of some species are of acceptable size.

This means that northern lakes generally contain more year classes of a given species, and cannot tolerate as high a mortality rate as comparable lakes of equal fertility in the South. It is the number of days in the growing season that makes the difference. Where a species can achieve breeding maturity in one or two growing seasons it can sustain drastic annual reduction of its numbers, but where growth is slow, the carry-over from season to season must be high. This accounts for the higher yields obtained from southern waters with standing crops similar to those in the northern states.

We can find a good illustration of this principle in our own state in the mortality rates observed among populations of northern pike and walleyes, our two most valuable warm-water game fish. The northern pike is a fast growing species in which females achieve breeding size as two-year-olds in the southern counties and after their third year in the northern counties. We have observed total annual mortalities of 60 percent among populations of this fish. Walleyes on the other hand are slower growing in Minnesota than the northern pike. Female walleyes reach maturity in their third and fourth year in southern counties and in their fifth and sixth years in northern counties. We have observed walleye populations sustaining a total annual mortality of 35 and 40 percent but exhibiting the size and age structure of an intensively fished population.

The comparatively slow fish growth rates and the resulting low potential sustained fish yields characteristic of our geographical area are basic considerations behind our conservative approach to the regulation of our fisheries. We have also, in recent years, obtained good information on the intensity of the fishing pressure exerted on our waters and find no basis for relaxation in this. Several years back under the financing of the Dingell-Johnson program we completed an extensive and detailed census of our sport fishery. There were involved fishing census on over 50 lakes and 10 streams selected to give representation to the various recognized types of waters and fisheries. Some of the waters were censused over periods of 5 to 7 years and some of the census work was done in conjunction with exploitation studies involving marked fish. I would like to use data from some of these studies to illustrate other features of our sport fishery, the understanding of which, forces us to the conclusion that our bag limits and designated fishing seasons are advantageous to the promotion of an <u>equitable distribution of the catch</u> and <u>the maximum number of satisfactory fishing hours.</u>

One of the outstanding things about the sport fishery that has become evident through this work is the fact that anglers, in their present numbers, are effective agents in game fish removal. The angling harvest is large enough to substantially affect the size and structure of the fish population. This is true of lakes in remote locations as well as of those near the metropolitan area, and true of large lakes as well as small ones. Another surprising feature is the

rather low annual yield of the large, predatory game fish our waters seem to be capable of sustaining. It appears that we have been at a place for some time in the expansion of our sport fishery where maximum yields of walleyes, northern pike, and lake trout are being obtained. No improvement can be expected without a more intensive and expensive management program. The regulations must function to distribute this limited catch among as many of the participants as possible over as long a season as possible.

For an illustration of the intensity of the harvest and the low annual yield of our walleye lakes, I would like to mention some of the findings of a study on Many Point Lake in Becker County, Minnesota. This work was reported by Donald Olson in the Transactions of the American Fisheries Society in 1957.[1] Many Point is a 1700 acre lake in the northwestern part of the state. It is remotely located with access by unimproved road to only a couple of points on the perimeter. Most of the shoreline is publicly owned and private and commercial development of fishing facilities was small. Here a complete census of the fishing over a period of three years revealed a pressure of only 18 man hours per acre per year, and an annual walleye harvest of three pounds per acre. Population estimates with marked fish over a three-year period showed the fishery to be taking on the average 26.8 percent of the estimated total "catchable" sized fish each year. This annual rate or removal seems to have been intensive enough to have produced a small size distribution. Anglers here were forced to accept walleyes down to 12 inches to maintain a catch rate of only 0.15 fish per man hour.

For most of the season, limit catches were scarce and bag limits did not function to control the harvest. During the first part of the fishing season, however, the catch rate was high. It was observed, in fact, that if the catch rate recorded during the first five weeks of the season had continued throughout the summer, the entire adult walleye population would have been removed by fall. This is a situation characteristic of most walleye lakes. The season usually opens on post spawning concentrations of hungry fish that are readily caught. The imposition of bag limits at this time should help to advance more walleyes into the summer period when fishing is usually slow.

A catch of only three pounds of walleyes per acre per year may seem to be a low yield but it is one we have encountered in estimates of the yield of other walleye waters subjected to similar analyses. On Lake Mille Lacs, for example, we had an annual catch of 3.1 to 4 pounds per acre with a fishing pressure of 9.4 to 13.5 man hours per acre per year. This is a large, sandy, shallow lake of 130,000 acres that does not stratify and can accommodate walleyes over its entire bottom

[1] Statistics of a Walleye Fishery in a Minnesota Lake, Donald E. Olson, Minn. Dept. Cons.; Trans. of the American Fisheries Society, Vol. 87 (1957) 1958.

at all seasons. The combination of summer and winter fishing was enough, however, to bring off a harvest between 402,000 and 529,000 pounds of walleyes annually. 2/

There is another opportunity for an insight into the long range effect of an expanding sport fishery for walleyes, from a 20-year comparison of fishing on Lake Winnibigoshish being prepared in our Department. 3/ Winnibigoshish is a Mississippi headwater reservoir which forms a large sandy basin of some 70,000 acres. It lies within a National Forest and has but limited recreational development along its shoreline. A detailed quantitative creel census was done there during 1938 under the CCC program. The work was well done and the opportunity for comparison with present day fishing was taken. The results of a similar census done in 1957 and 1958 by Department personnel are interesting. We find that over these last 20 years fishing pressure has increased about six times. The annual catch of walleyes has increased about three times and the catch rate has dropped to half of what it was 20 years ago. The three-fold increase in walleye removal has reduced the average size of walleye taken by anglers from 2.2 pounds in 1938 to an average of 1.3 pounds in 1957-58. This comparison serves somewhat as a documentation of changes taking place in our northern waters which, I am sure, we all have sensed intuitively. Our lakes are yielding as much or more than they ever did but fishing success declines because the crop must be distributed among many more fishermen.

The northern pike is another species on which fishing is intensive and small bag limits are imposed. In southern Minnesota where the northern pike is the principal large game fish, the rate of removal is as high that few fish live beyond their third year of life. In a study of Reeds Lake, Waseca County it was found that the pike were sexually mature and spawned for the first time in their second spring after hatching at a size of 19 to 20 inches. In the fishing season following this first spawning, nearly the entire age group disappears leaving the one-year-old fish to mature, spawn, and supply the fishing during the next year. The failure of several hatches in a row is real trouble.

2/ A Method of Creel Census Applicable to Large Lakes, Dennis H. Schupp, Investigational Report No. 274, Minn. Dept. of Cons. 1964 10 pp mimeo.

3/ Fish Population and Catch of Lake Winnibigoshish, Minnesota and Connecting Waters with Special Emphasis on the Walleye, Fritz H. Johnson and Merle W. Johnson, manuscript.

This is not the situation in the northern part of the state where the loss of spawning areas to drainage and other development has not been so serious as in the southern counties. Although growth is slower, recruitment is more regular and the pike are generally more abundant. The bag limit of 3 fish, both daily and in possession, is a statewide regulation which may be too restrictive in some parts of the state. Fishermen in Minnesota, however, are allowed to spear northern pike in the winter from dark houses and troll with motors. Both of these methods are very effective on northerns and the small bag limit is some compensation.

Mention should also be made of our lake trout fishery where we have recently reduced the possession limit from five to three. This situation was reported by Robert Schumacher in 1960 at the 22nd Mid-west Wildlife Conference in Toronto.[4/] Background studies leading to this restriction were discussed. On four, popular, inland lake trout lakes, symptoms of over-fishing were evident where the fishing pressure did not exceed 10 to 15 man hours per acre per year. This is a light pressure compared to our bass-panfish lakes which commonly carry 150 man hours per acre per year. The catch rate and the size of the fish in the catch decline through the years as the fishing pressure rose and there was concern for the breeding stock. The incidence of limit catches was high enough, especially in winter, that savings through the imposition of lower limits appeared possible. The difficulty on the lake trout lakes seems to stem from the rising popularity of winter angling. Winter anglers for lake trout are about 2½ times as efficient as the summer angler. The advent of the snowmobile in this country promises to distribute anglers better among the lake trout lakes and take the pressure off the readily accessible ones.

I have tried to point out here that if we are conservative in our approach to the regulation of our sport fisheries there are some reasons for it.

Because of our northern location we have slow fish growth and slow rate of population turnover. This gives us low fish yields by comparison with similar waters in the South.

Our fishing pressure is intensive and the angler must be taken seriously as an agent in removing fish and modifying fish population structure.

Although local custom and tradition often prevent regulatory agencies from employing the most effective measures, it is incumbent on these agencies to promote regulations that will assure an equitable distribution of the catch among the participants of the sport, and distribute the catch over the season so as to provide the most recreational hours for fishermen.

4/ Some effects of increased angling pressure on lake trout populations in four northeastern Minnesota lakes, Robert E. Schumacher, Minn. Game & Fish Investigations, Fish Series No. 3, 1961.

MR. ROSEBOROUGH: Thank you very much, Chuck. I don't know whether the Chairman is going to give us a minute to get a question in. There are two ways of doing things. One is to allow the panel to question the others, and the other is to take questions from the floor. I think that we might at this point in the game ask for questions. I hope that you won't forget that we have gone over four parts of management and commercial versus sport fishing, chemical control and regulations, and so, if you might direct your questions to one of each of the panelists.

MR. SHIELDS: I would like to ask Woody Fleming about this predator-prey relationship in the bass and bluegills. My knowledge, most of it, is based on farm pond studies, where basically you only have the two species. Food studies that have been carried out in Minnesota and other places indicate that the bass may not be a serious predator on bluegills in lakes where you have many species and in lakes where you have good production of other animal foods for bass. I wonder if you have any food studies or any other studies to justify the assumption that length limits allowing more large bass in the lake truly hold down the bluegill populations.

MR. FLEMING: I guess that's a very controversial point. I would just like to say this to give a recent concept. Again I refer to those 12-inch bass that are now running something over that. We have done quite a few stomach analyses since opening on April 15 and these 12-inch largemouth bass and over are consuming quite considerable numbers of bluegills. Now, whether this is a special situation - there are crappie, a few northerns, quite a number of channel catfish, carp (I hate to mention that in a renovated lake but it's a peculiar situation). I think personally it varies from the diet of the bass and his relation to preying upon the bluegill varies from situation to situation, and this we are particularly pleased with, the studies we are making this summer in examining the stomach contents of these 12-inch, two year old, fast growing bass indicate that quite a number of them are preying very satisfactorily upon the bluegill. They may change.

MR. ROSEBOROUGH: Are there other questions for the panel?

MR. ROSE (Iowa): I'd like to ask about this toxicant that you mention, Dr. Lennon. It's a stranger to me and it sounds very interesting. Is this available to the public to be bought? Fintrol, or something like that. Are there any brochures or anything on it?

DR. LENNON: The process of registration of Fintrol is expected to take about three months, and during that time Ayerst Laboratories is preparing the brochures and other information on it. It is hoped that the production will be adequate by the time registration is received that it can go on the market.

MR. ROSE: Thank you very much.

MR. SHIELDS: One other question (I hate to be the only one asking questions) - Dr. Lennon, do you have any thoughts on how long it may be before there will be a useable, specific poison on a species such as the carp?

DR. LENNON: We have been investigating a wonderful group of compounds called the nitrol salical analines. They have remarkable biological activities, but here we are confronted with this patent situation and contract situation. The companies who could give us the best cooperation at the present time in providing these compounds, background information and so forth, refuse categorically to work with the government at the present moment without contracts and without a clarification of the patent position. We, therefore, have to turn around and work with what we might call fly-by-nighters who are looking for a fast buck or have an angle, and we're not getting exactly the compounds with which we like to work. But, within this group, we have detected some remarkable selectivities which we would like to exploit, but at the present moment we are sort of stymied on it, but there is no question about it that we will, I am sure, come up with a selective control for carp. Now I might caution you on this, at the time that industry is called upon to spend a few dollars on a selective, they send their representative hightailing out to talk to state and, possibly, provincial, fish and game departments. At that time don't tell the fellow that the stuff has got to be dirt cheap. If you do, he leaves your office, he writes a snide letter to us, and that cuts the compound's throat right then and there.

MR. ROSEBOROUGH: One more question.

MR. CHARLES LLOYD (Wisconsin): Is there a chance, with some assistance from state agencies - financial and otherwise - that we could give you some help here?

DR. LENNON: Where a state or province can give us the greatest amount of help is in this respect - when we get around to the point of conducting field trials, where we have a potential tool and we need very substantial field trials, carefully set up, carefully run, across the country, then, we will be ready to call upon you people to help us test them in the field, to provide good responsible information which can be used in the clearance and to satisfy the Food and Drug administration, and which reflect your particular condition. Now, these field trials cost money. They take a lot of time. They take some specialized personnel, and we can't hope to run adequate trials if we go from state to state and then pick up a few boys here and there telling them that is their job to run a field trial. We would hope in the long run, Chuck, that we could have a lot of cooperation on the part of the states who would enter and do a lot of this field work for us, or else test fish which we ordinarily can't get a hold of at La Crosse for testing purposes. Many species just don't lend themselves to laboratory testing very well. When it comes to them, we have to go into the field.

MR. LLOYD: We're always willing to cooperate. The thing that I had in mind is that in Wisconsin I think there is some legislation now that is going through that may make it possible or at least authorize us to expend some funds in direct assistance in this type of work. You mention this one group of compounds - in your experience, would this be the best place to search for a selective chemical for carp?

DR. LENNON: We think so, but with this Fintrol that we are coming out with now, it is highly selective to fish. It has some selectivity among various species of fish, but much of the research effort has gone into this, that it is harmless to aquatic plants, that it is harmless to bottom aquatic insects, it's harmless to mammals, it's harmless to ducks, it's highly selective to fish. We know precisely what its mode of action is, what its site of action is - in the fish, it's irreversible. It has no recurrent effect on fish. If we can catch carp - spawning carp, for example, in coves, spray this rather innocuous sand preparation once, the carp are not repelled by it at all and once they get a snoot full of this antibiotic, its effect is irreversible, and the carp, although they do not die spectacularly, have just one direction to go and that's death. So, we feel that with a tool like this we might spend some money really wisely if we look into selective applications of a tool which has these guaranteed and cleared advantages.

MR. ROSEBOROUGH: I guess trying to squeeze four papers which take two hours and thirty minutes into one hour and thirty minutes is a bit of a task. I want to thank each of the panelists for their presentation. I am sorry that we weren't able to get the questions right after the papers.

CHAIRMAN SHIELDS: You may have heard of the lady who came over loaded with details on her family tree, and she proceeded to trace this family tree back to King Henry IV and then she asked the question about this new family, what credentials did they have, what was their family tree, and how far could they trace their ancestry back, and the gentleman answered that they really didn't know,that they had lost all of their records in the great flood. Well, I feel that way with Bill Lodge. I think that his credentials are replete. We all know what they are. And so, without further ado, I would introduce you then to Bill Lodge, Director for the Department of Illinois.

MR. WILLIAM T. LODGE (Director, Illinois Dept. of Conservation): Ted, I don't know too much about family trees. Your story reminded me of the girl from Chioago, a young lady who was in Boston stopping with one of the dowagers there. And the dowager said, "Do you by any chance come from the Battandash Smith family?" The girl said, "No, I don't. I come from the stockyard Smiths in Chicago". Whereupon the dowager said, "Well, you know, in Boston with us breeding is everything." The girl replied, "Well, you know, in Chicago we give quite a little consideration to it too, but we do think of other things once in a while."

We have all had the privilege yesterday and today to sit in this meeting and listen to a group of experts talk about many things in

their chosen fields. You are now going to have the privilege of listening to somebody who is not an expert in anything, who is out of his chosen field, and who really don't know a hell of a lot about the subject he's talking about.

## NATURAL AREAS PRESERVATION IN CONSERVATION PROGRAMS

I feel somewhat hesitant in speaking to this group on the subject of natural areas preservation because of the fact that our State of Illinois is a relative newcomer to this field, having had in existence the legislation creating a nature preserves system for only two years, and having acquired in that time only 14 areas dedicated as Nature Preserves. Of these areas, one was dedicated by the Department of Conservation of the State, twelve by the Cook County Forest Preserve District, and one by a private foundation, the Forest Park Foundation of Peoria, Illinois. We are newcomers in this field and we are probably far behind other states that have been in the business longer, notably Wisconsin, Michigan and Virginia.

At first examination, it appears that there is definitely a place for the preservation of natural areas in the general conservation and recreation program of any State. There are always present areas which have unusual flora, fauna, geological or archaeological features of scientific or educational value which should be preserved in their natural state. The importance of the preservation of areas of this type is possibly of greater magnitude in regions which have little of this type of environment left within their boundaries than it is in regions which are, as yet, relatively unspoiled by the encroachment of civilization. Before we try to establish what place natural areas preservation should have in the general picture of conservation and recreation, I think that we should consider some of the advantages of preservation and some of the problems that arise in the consideration of the establishment of such areas.

The primary purpose of a natural area preservation system or a nature preserves system is the complete and perpetual preservation of the areas in question. Provision for such a perpetual preservation is definitely necessary, particularly, in a State like Illinois where the Highway Department of the State recently proposed legislation giving that Department and all the County Highway Departments of the State the power of eminent domain over all public, as well as private lands. This legislation, while not successful, indicates the extent to which all areas no matter how unique or in what ownership face the threat of encroachment.

There are four areas of ownership under which nature preserves can be established. First, public ownership, such as State or local governmental units. Second, semi-public ownership, such as, foundations and colleges. Third, private ownership where an individual may wish to retain title to an area and yet dedicate it to insure ultimate preservation and, at the same time, devote it to controlled public usasge. Fourth, is a combination of public and private ownership which may be used in some cases to advantage in the establishment of dual purpose areas. We have in Illinois at the present time an excellent example of this combination ownership where

a family owning some 500 acres of virgin upland timber which is completely unique in our State is considering the dedication of it as a nature preserve and opening it to limited public use, providing that the State will acquire adjacent land for the establishment of recreational facilities outside of the timbered area. This particular family would in no way consider the transfer of the title to this property to the State of Illinois and this is the only way in which it may be possible to utilize this area for limited public welfare.

Under our nature preserves act, any areas which have been dedicated as nature preserves and accepted by the Nature Preserves Commission, the Director of the Department of Conservation, and the Governor of the State of Illinois, "are declared put to their highest, best and most important use for the public benefit and they shall be held in trust and shall not be subject to alienation except to other public use upon a finding by the Department of the imperative public necessity and with the approval of the Governor and the Illinois Nature Preserves Commission." Such designation makes the preservation of these areas as nearly certain as it can possibly be under the legislative system of government. We have recently secured the passage of legislation which states that an area dedicated as a nature preserve shall be considered subject to a public easement for the purposes of taxation. This makes possible reduction in assessed valuation and, consequently, in tax payment on lands dedicated to this purpose. This will encourage the dedication of privately-owned land.

These then are the advantages of a system of nature preserves for the establishment and ultimate preservation of certain unique areas. Now, let us consider some of the problems which arise in the establishment and administration of such a system of natural areas.

First, there is the determination of suitability and of proper ownership. Many areas of unique geological or archaeological character might better be preserved by a museum or an educational institution. Some areas containing highly unique flora or fauna might better be devoted to the ownership and management of a research group. Many areas are adaptable and suitable purely for nature preserve areas and should be dedicated as such. The second problem is one of emphasis. It is understandable that people whose primary interest is in natural areas should feel that their preservation as such is of the greatest importance and that such preservation should supercede all other usage. In many cases this feeling is justified. In other cases, the public as a whole may be better served by the judicious limited multiple purpose use of the area. A good example of this conflict of thought is an area which the Conservation Department owns in Illinois, some 2500 acres. This area is devoted to multiple purpose use. Each year we conduct approximately 15 large field trials on the area and during the pheasant season, we operate it as a public hunting ground accommodating between 2500 and 3000 hunters. Upon the establishment of our nature preserves system, we began to receive pressure from a certain group within the State who were insisting that this 2500 acres be dedicated as a nature preserve, that it be fenced, and that the public not be admitted to any of the area without a scientific permit because of the fact that, to their personal knowledge, there were still 4 prairie chickens existing on the area. Another example is an area which we have recently purchased containing 250 acres of virgin Wabash Valley bottom land timber which we expect to dedicate as a nature preserve. We are already receiving

demands from certain organizations that the entire area be fenced with cyclone fencing and no one be permitted to enter except for scientific purposes. Certainly the emphasis in the establishment of natural areas should be on quality rather than quantity. Areas should not be dedicated simply because they are nice areas and are not at the moment being used for other purposes. This is not the intent of natural area preservation.

These then are the advantages of natural area preservation and some of the major problems connected with the establishment of such a natural area system. Certainly, it seems to me that the advantages outweigh the problems and that it is indicated that there is a place for such a system of natural areas within the conservation field. It seems to me that place is within the regular conservation organization and administration of the State. I do not believe that a nature preserves system or its counterpart should be set up as an entity of its own operating as an independent agency, to a great extent in competition with the general conservation agency of the State which is administering the conservation and recreational facilities. We, in Illinois, twice defeated legislation designed to set up a nature preserves system as a separate agency of its own. Two years ago we secured a compromise with the advocates of natural area preservation and secured legislation setting up such a system within the Department of Conservation to be administered by the Department. All acquisitions must be approved by the Department and by the Governor of the State. This provides a safeguard against promiscuous acquisition of areas which may not be of highest quality and which may in the future become excessively burdensome in administration. It appears to me that the place for the preservation of natural areas is where we have it, where it can be considered in its proper perspective in the overall picture of the general conservation and recreational activities of the Commonwealth. Thank you.

CHAIRMAN SHIELDS: We have time for a question or two, if someone has one.

MR. WALTER SCOTT (Wisconsin Conservation Department): How much money do you have to operate with?

MR. LODGE: Walter, we've operated for two years without any money, because the Bill establishing the nature preserves system carried no appropriation with it. We did include in our regular budget $15,000, and that is primarily for the expenses of the Nature Preserves Commission. We think that this system can be administered by the Department as part of its regular function, without the necessity of any large, extra appropriation for that purpose.

DR. EDW. SCHNEBERGER (Wisconsin Conservation Department): Does the Commission have any staff?

MR. LODGE: The Commission has no staff of its own. It will have some secretarial help in the next biennial because that was included in the $15,000. The staff work will be done by biologists and foresters of the Department of Conservation.

CHAIRMAN SHIELDS: Thank you, Bill.

In closing today's session I would like to make one comment, and that is that I have been unusually impressed with the fine attendance that we have had. I think it's due to two things. First of all, I think it's due to the activities of the Program Committee in setting up what I think has been a highly informative as well as interesting program; and secondly, to the provincial people here and the arrangements which I believe are conducive to good attendance.

Adjourned.

Thursday morning session, July 29.

CHAIRMAN C.H.D. CLARKE: We open our session this morning with a paper on "The Status and Progress of Waterfowl Management in Canada" by Vic Solman, of the Canadian Wildlife Service.

DR.V.E.F. SOLMAN(Canadian Wildlife Service, Department of Northern Affairs and National Resources, Ottawa, Ontario): Good morning, ladies and gentlemen. The way the title of this paper was announced, it almost sounded as if the federal government had the only say in the business of waterfowl management in Canada, and before anybody jumps up and objects, I'm going to point out that that is not strictly correct and don't go away with that impression.

## THE STATUS AND PROGRESS OF WATERFOWL MANAGEMENT IN CANADA

Right at the beginning we've got a paradox. At a time of buoyant economy, rising standard of living, shorter hours of work, and more leisure one of our major leisure-use resources is in trouble. Wildlife of many kinds suffers damage to its habitat through our actions. Waterfowl are completely dependent on wetlands for breeding habit. They are particularly vulnerable to destruction of that habitat by drainage or filling for agriculture, industry, urban expansion and transportation.

In recent speeches, the Honourable Arthur Laing, Minister of Northern Affairs and National Resources, has discussed the threats to our waterfowl resource. This year the Canadian Wildlife Service has published and distributed, in two languages, about a quarter of a million copies of a pamphlet called "Waterfowl, a resource in danger," and about as many copies of a cartoon booklet called "The Swamper". We have also produced a colour motion picture titled "Waterfowl, a resource in danger," and four television clips which will be distributed nationally. That distribution and Mr. Laing's addresses were attempts to inform Canadians about the status of waterfowl and the need for improved management of waterfowl habitat to safeguard the resource.

Before we can manage waterfowl habitat we have to know what it is, where it is, how much of it there was and is now, and how much we need.

We have known since before the Migratory Birds Treaty was signed 49 years ago that waterfowl nest right across the southern third of Canada, and some well north of that portion. Nesting is, of course, most concentrated where conditions are best.

Several species of geese nest in northern Canada, on the mainland and on the lower tier of Arctic Islands. Their habitat has been little affected by man-made changes. The most important breeding grounds lie in thirteeen Arctic Migratory Bird Sanctuaries which cover more than 40,000 square miles. We are not likely to carry on major management activities in natural goose nesting areas in the near future. However, we may decide to spread goose nesting to new areas by improving goose habitat in southern Canada. We may also expand northern nesting populations by using some new Russian ideas to establish populations in areas not now used for nesting.

Three-quarters of the most sought-after species of ducks of North America nest on the sloughs and potholes of the Canadian prairies. The remainder nest in scattered locations across more than two million square miles of the pre-Cambrian shield, a hard rock area of low biological productivity; on large river deltas;and on marsh areas associated with large inland lakes, river valleys and sea coasts.

Drainage, mainly for agricultural development, is a threat to some major marsh and delta areas and to the millions of prairie sloughs and potholes. The sloughs and potholes lie on the prairie grain-growing areas, that 60 million acre "breadbasket" of southern Saskatchewan and adjacent parts of Alberta and Manitoba. In July of 1955, a wet year, there were more than five million potholes; in a drought year, 1959, their July number fell to about one million. At the moment we are somewhere between these two extremes.

We are presently in the course of a four-year pilot program for acquisition of prairie wetland. Our objective when the program began in 1963 was to try to develop a simple system of land acquisition and to build public understanding and cooperation.

More particularly, we wanted to know if prairie farmers would agree to maintain their wetlands for duck production for a 20-year period in return for cash payments in advance. We learned that the majority of those approached would do so. In 1963 and 1964 we signed agreements with and made payments to 41 title holders of 95 quarter sections of land containing about 1,800 acres of wetlands in the three prairie provinces. The payments, for a 20-year agreement not to drain or fill the wetlands or to burn the vegetation from around them, averaged a little over $14. per

acre and about $630.00 per landowner. The payments were based on the present sale price of neighbouring land, discounted over 20 years at five percent per year. We found that acceptance of the payments depended more on the size of the cash offer than on the price per acre. About seven-eighths of the offers of more than $500.00 were accepted, in contrast to about half for those of less than $500.00. In 1965, we will try to simplify the administrative procedures and to reduce the cost in time, manpower, and money of negotiating the agreements and paying the landowners.

The objectives of our pilot program, which will continue in 1966, have been partially fulfilled. Public support is increasing. Some landowners are now offering to have their lands included in the program before we have asked for their cooperation and before our studies have reached their areas. We have not yet developed the quick, easy land acquisition procedures we need. Our major program involves the acquisition of four million acres of critical wetlands during the period 1967-1976. We expect the cost of agreements to be about five million dollars per year during those ten years.

Another major need is for large marshes. Because of the complexity of ownership we believe outright purchase will be more suitable than agreements to ensure marsh preservation. Our first small purchase will be made this year. After we have gained experience we expect to spend about two million dollars on marsh purchases over a five-year period. The areas purchased will include some breeding areas. However, much of the emphasis the purchase program will be on areas for feeding and resting during migration, and in the coastal areas, for use by wintering ducks and geese.

Knowing the most important areas for waterfowl production, migration, and wintering, and acquiring those areas are only the beginning. After that program is well begun we must start improving some areas to increase their usefulness to waterfowl. The know-how is available. The problem will be to get the trained manpower to apply the techniques. In 1964, we began a program of $1,200 scholarships for graduate work in the wildlife field. Three $1,200 scholarships were given that year, and five in 1965. The program is expected to grow further. We are expanding our contract work with universities to involve more student training. We have also increased our employment of graduate and undergraduate students in our summer research, conservation, and development programs.

So far I have not mentioned the one management method we have used on waterfowl for the past 49 years, namely, control of the harvest. Regulation of the harvest is one of the oldest game management techniques. It was described by Moses in the book of Deuteronomy - if you care to consult your Old Testament the reference is Chapter 22, verse 6. It is still a good technique and has helped to maintain waterfowl numbers against increasing pressure of hunting and habitat loss ever since the Migratory Birds Treaty was signed. To regulation of the harvest we must now add habitat management. In doing that we must not overlook the information we can secure from the harvest.

To do a good job of management we need to know how many waterfowl are killed each year and by how many hunters. We also need to know how hunters were distributed and when, where, and how they hunted. It may be even more important to know why they chose hunting instead of some other recreation.

Our 1961 economic survey of hunting and fishing in Canada indicated that about 350,000 waterfowl hunters spent 27 million dollars that year. Under the provincial licensing system it is not possible to get comparable sampling universes in the different provinces and so we do not yet have good national figures on hunters or kill. To get good figures on kill we need a national kill survey based on a National Waterfowl Hunting licence.

Years ago we proposed a National Waterfowl Hunting Licence similar to the United States Duck Stamp. We had no wish to use it as a means of raising funds for land acquisition but that misunderstanding has occurred. Acceptance for the idea of a kill survey based on a national licensing system is increasing. We hope to have our first national kill survey in 1966.

We have not stressed the revenue-raising function of a National Waterfowl Hunting Licence, because the money that could be raised by that means would not be enough to do the job. In addition, we believe all Canadians, not just duck hunters, will want to participate in this important work. In some areas there are already more nature lovers using the resource than hunters. We believe the number of observers will increase. In some United States waterfowl hunting areas the financial contribution to the local economy is greater from non-hunters than from hunters. I believe there may be Canadian areas where that occurs.

Canadians are well aware of the cooperative background of North American waterfowl management. We raise most of the ducks; the United States provides a winter home for most of them. The question has been asked, what about the use of United States funds in the Canadian wetland acquisition program? Both parts of the waterfowl story need attention. I am sure that United States funds can be wisely used in that country for a long time yet before all the needed jobs are done. The major problem in Canada for some time to come is more likely to be a shortage of trained manpower than of money.

Our proposed National Waterfowl Kill Survey will provide us with some information on when, where, and by whom the hunting is done. It will also tell us about species and age and sex classes of birds involved. We hope, of course, to supplement that survey by expanded research on life histories, population dynamics, and general ecology of the many waterfowl species on which those data are incomplete.

We have just signed our first contract with a research agency to carry out an economic study of waterfowl hunters. It will certainly give us additional information about how people are spending large sums of money to secure a few pounds of meat - and a series of intangible and priceless aesthetic pleasures.

Really adequate waterfowl management will inevitably involve much more precise management by species. We must learn how to teach hunters species differentiation, in the field, before they pull the trigger. Our first effort was the Waterfowl Hunters' Guide. The fact that large numbers of birdwatchers and waterfowl biologists have developed field species-recognition ability shows that it can be done. We are developing a training method using films and other aids to increase the hunter's interest in identifying waterfowl in the field and our ability to help him learn how. We do not think there is an easy method. It will take perseverance and practice. The rewards for success will be large: more hunting of species that can stand the pressure, more assurance of safety for species in short supply, more enjoyable days in the field when the hunter knows what he is shooting and why.

Thus far I have not mentioned the farmers, not all of whom are enthusiastic about our efforts on behalf of waterfowl. Farming is now a business rather than a way of life. A good businessman has to watch his profits and his losses. In seasons when harvesting is delayed by autumn rains losses of agricultural production caused by waterfowl may involve hundreds of thousands of dollars.

Before we could expect wide cooperation in our proposed wetland acquisition and management program we had to safeguard the interests of the farmer. We had to learn the nature and magnitude of waterfowl damage to agricultural crops. To do that we gathered information through questionnaires and interviews over several years.

We developed equipment for scaring birds out of crop fields. Commercially available acetylene exploders were improved to our specifications by the National Research Council, so as to be more easily controllable and fully reliable. We experimented to determine the most effective patterns of use to protect swathed crops from duck and crane damage. The perfected unit, now produced commercially in Saskatoon, is used in Canada, the United States and at least one of the East African countries. Its use in East Africa for elephant control shows its versatility. It is very effective on ducks in fields and on airports.

Finally, by leasing wetlands we provided a new source of income to the farmer in return for his cooperation in permitting a crop of waterfowl for public use to be produced on his private land.

We have not been alone in dealing with crop damage by waterfowl. Two of the prairie provinces have entered the field of wildlife crop damage insurance. A farmer who takes out insurance may be reimbursed if his crop is damaged by wildlife, including waterfowl. The largest part of the premium is paid by a levy on sportsmen as an addition to their hunting licence cost.

Leasing wetland with public funds as a way of paying the farmer for growing a public-use crop on his private land is a new idea. We believe our efforts to implement the idea over the next few years will be aided by public support and cooperation that extends well beyond the hunters.

The future for waterfowl and our management of them looks much more promising now than in the recent past. Our work together will ensure that we achieve the best possible status for waterfowl through progress in management.

MR. GEORGE MOORE: Thank you.

The President has asked me to take over for just a moment to handle the next two items. I believe Frank King of Wisconsin is to give us a report on the Midwest Pheasant Council, so, Frank, if you will come up and handle that.

MR. FRANK KING: Thank you, George. I've been asked to give this since the Pheasant Council has no representative here, and at the present time they are without a Chairman. Chairman Morris of Ontario has resigned recently. This is a condensation prepared by a Wisconsin member of the Council. On the table at the side there are complete copies of this Report, and also they will be mailed to you in your homes. This is in accordance with the directions given to this Council by the Midwest. You may recall this Pheasant Council was set up by this group in 1957 and they are expected to report annually to you, and, in turn, get your direction for research projects or work that this Council should carry out.

The Pheasant Council had their last meeting last April here in Ontario at Kingsville, primarily to have a visit to the Pelee area. The main purposes of this Council, you may recall, were to eliminate duplication in research and to increase efficiency and coordination and integration of pheasant research. Subsequently, this group suggested to the Pheasant Council that they undertake additional work including a greater part in the drafting of regulations, recommendations and documentation of hunting seasons, federal farm programs, pheasant winter mortality, feeding, and also to develop the pheasant breeding and late season population status report.

The Pheasant Council, it states here, have been working hard to meet these objectives. They think that they can swing towards some of these suggestions from you as some of their older projects are completed.

I think one thing of interest to you in your report would be the state by state review of last fall's hunting season, over-wintering conditions, and spring breeding populations. I'll just mention this briefly. With the exception of Wisconsin, Pennsylvania and Indiana, where last fall's harvest was up, other states reported the harvest as about the same or lower than 1963. North Dakota, South Dakota, Minnesota and Colorado sustained the greatest declines. Colorado indicated drought conditions had affected pheasant populations. The other states reporting declines indicated that these were the result of severe blizzards which occurred periodically during

* REPORT OF MIDWEST PHEASANT COUNCIL ACTIVITIES by Carl G. Trautman appears in the Transactions as APPENDIX III on page 181.

the winter. This present year's breeding populations are down in the western half of the Midwest and variably unchanged or up in the eastern half. This reflects the past winter's conditions pretty well.

The Pheasant Council had two interim committees active during the past year--one on pesticide research. They have submitted the report now on their pesticides committee work. This report was compiled from material obtained in a reply to a letter of inquiry sent to 42 states and provinces. It provides information on locations where studies have been conducted, and where they had progress. They conclude that there was nothing particularly new on pesticide-pheasant relationships found since their 1964 report. Apparently, they find they are having difficulty in obtaining the necessary equipment and funds to carry out the pesticide studies. Nebraska is just setting up a new laboratory and South Dakota State University has begun studies in the field and with penned pheasants for determining the effects of pesticides on pheasant production and mortality. I think this is one topic of major interest to us. It has been given great emphasis by the Pheasant Council.

Their other committee on Resolutions seems somewhat a little unusual perhaps. I believe the feeling in the Pheasant Council is that they are using this method of submitting resolutions or recommendations to you, for your consideration, and I suppose you are to take it from there to pass on these resolutions. I think your Resolutions Committee had one such resolution at this meeting on roadside development. The Pheasant Report also mentions that the hunting season report is being distributed as a recommendation. You may recall this was brought up last year as a resolution. This group saw fit then not to pass it as a resolution. Apparently, right here there may be a little confusion in the contact between the two groups. I suspect there might be need here to tell the Pheasant Council just how you would like to get their reports or recommendations. I'm not sure how each State feels about it. I wonder are you getting the reports in the form you like or can use? I know this Council is doing a lot of good work and has a lot of good recommendations. Maybe, putting their findings in an annual report isn't too satisfactory. They have had some special reports. I wonder if there is a need to ask them to put out a standardized or simple report on one subject only. Would that be of better value to us in any way?

They have also completed some of their earlier work assignments on the relationships between climate, land use and pheasant populations. The land use report has been out for some time, and the climate report apparently will be published in the Journal of Wildlife Management very shortly. At their annual meeting, they also ran over several special subjects--the Nebraska special hen harvest season, pheasant radio-telemetry research, and the breeding and stocking studies in Missouri. These are reported on in the larger report. I think the thing of major interest to you may be the Nebraska hen study. This was aimed at finding out to what extent the species can tolerate hunting and still not have its reproductive potential impaired. The study was conducted in the Panhandle

region during the final nine days of the regular season. One hen was allowed daily, and 5 in the overall 20-bird possession limit. The average 93-day season bag size for hen season and non-hen season hunters was 16.0 and 5.6 birds, respectively. Hens comprised 8.8 percent of the entire bag of the hen area hunters. Eighty-five percent of the hunters favoured the hen season and 48 percent of the landowners favoured this season. Their technician estimates that less than 5 percent of the Panhandle hen population had been removed. Evidently this harvest study went quite well in their opinion.

The radio-telemetry report probably does not have much at this time. I think they find that the cost of equipment and the manpower operating is very expensive, so this type of study moves very slowly but shows great promise. Most states are very interested in it. Missouri pheasant breeding studies were reported on. The pheasant technicians evidently feel that this may result in some very worthwhile findings. Because of a gradual realization that the problem of dwindling pheasant populations in the face of ever-intensifying agriculture will not be entirely solved by programs designed to arouse a public consciousness in favour of large-scale habitat improvement. Therefore, the ultimate solution may come from intensive pheasant breeding research.

I don't recall from their major report that they had any promising leads at this time, but you can see from this statement that they think it holds good promise.

They also had several panel discussion topics including game inventory techniques, pheasant habitat management practices and programs, the federal feed grain farm program and predator studies.

I think the point here of major interest to you would be the work of the Pheasant Council in aiding the development of the new omnibus farm program. They had a special meeting in Minnesota on this. I know they've been in contact with the various legislators, and also the Institute and other associations. I know we've had direct contact from our Wisconsin legislators on this, and I feel very surely that your Pheasant Council has been of great value in developing the nation-wide farm program, especially to clarify wildlife aspects. I think that work alone has really justified their efforts in the past and certainly in this last year.

Their next meeting will be in Illinois. I may state here that we sincerely hope that your Association of Midwest Commissioners find our report useful in guiding pheasant research and management in your respective states. We ask for your continued active support for the Midwest Pheasant Council. I don't know, Mr. Chairman, whether you need any formal acceptance of this, maybe there is some guidance that you may wish to give it. I recommend that this report be accepted.

**MR. T.R. EVANS:** I second that motion.

**CHAIRMAN MOORE:** May we have discussion? Anybody have anything they would like to add or discuss some of his recommendations?

**MR. LARRY GALE:** I'm not sure whether this is timely at the moment. I do agree with Frank King that there needs to be some clarification about what the Association expects from the Pheasant Council. This has come up for discussion for at least the last three years and I have been on the Resolutions Committee for two of those years. We didn't do what the

Pheasant group thought we should do. I think this does need some explanation. This is our thinking that these recommendations that had come to us were not proper subject matter for resolutions by this association. One of them dealt with roadside mowing and there was no disagreement among the group as to the soundness of the recommendation, but we did feel that this was a matter for the individual state or province to handle on its own, and we couldn't see anything that would really be accomplished by a resolution from the Association telling each other to do this. The same thing applied to the recommendation on hunting seasons. We felt that this again was a matter for the individual agency to handle by itself. We recognized the soundness of the first proposal that has been expounded, but again we didn't feel that this was proper subject matter for the Association to pass by resolution. I believe the present committee - I don't want to speak for them - but I believe they have the same attitude this year - and it seems to me that in order to clarify this we should put it on this basis that these things come as recommendations from the Pheasant Council. They could be either resolutions by the Council or simply recommendations included in the report, but I don't think that they should expect the Association to pass a resolution which is only directed back to ourselves. This is the way the resolutions committee has looked upon these things in the past. Possibly somebody else would want to comment on this, but I know our own representative on the Pheasant Council has discussed this with me, and there has been a lot of misunderstanding because these biologists felt that the Association was in effect rejecting their recommendation and this is not true. So, I think some clarification is in order.

MR. KING: I think Larry touched on one important point there. I can visualize the Pheasant Council working through the years. They work hard at it, and I think they have some sound recommendations. I suspect that it might be well for this group at some time, perhaps after you have received several more reports to acknowledge these in some way or accept them, at least point out that you've studied them or find them useful. I think this would probably be a good step, and the Pheasant Council probably appreciates such action. Maybe there is a little misunderstanding on their part. They maybe expect that they are supposed to send in resolutions. I'm not sure, but somewhere along the line that idea apparently got started, and, as you notice, they even have their resolutions committee - maybe it should be a reporting committee - but I think that at some time it would be well for this group to spend a little time to review these recommendations or bring them up-to-date, and make some official acknowledgement of it and send them back to the Council. After all, the Council is operating at your request and was so set up seven and a half years ago. They want your guidance.

MR. WALTER SCOTT: Mr. Chairman, I would like to recommend that we refer this Report to our Executive Committee and instruct them to follow it through on making the necessary contact with the Pheasant Council, whatever it is decided is necessary. The Executive Board of Directors has a

representative from every State and they could take it up at their meeting in December somewhere.

MR. MOORE: Let's dispose of the question - We had a motion and a second to accept it. We've discussed it. I guess if there aren't any other questions, all in favour say "Aye".

CARRIED.

MR. MOORE: Now, then, would you like to make that as a motion.

MR. SCOTT: I will so move.

MR. RUSSELL STUART (North Dakota): I second that motion.

MR. MOORE: All in favour. Opposed (None). Carried.

The next item on the agenda is the Committee on the Technical Dove Report. I wonder if there is anyone here from that Committee that would like to make it a statement. I don't believe there is. If there is we'd like to hear from him. If not, Tom Evans had a few remarks he wanted to make regarding the future status of this Dove Committee. Tom.

MR. EVANS: Before going on over to doves, I held my comment on the Pheasant Council too, George, so we'll back up a little bit. I know that in the past on some occasions at least both the Pheasant Council and the Technical Dove Committee have more or less felt left out when it came to the annual meeting of the Association. This, despite the fact that both the committees or councils are sponsored by the Association. They were authorized and established by this Association. This year, we made it a point to give them a specific place on the program and, unfortunately, we hit a year when neither committee was able to be represented. In the one case because of the resignation of the chairman from his employment, and in the other case, because the chairman, Kenneth Russell of Iowa, was unable to get to the meetings. I think that perhaps we should be sure in setting up our program that we do provide a place for these two sections, so to speak, of the Association, to have an opportunity to report to us.

MIDWEST TECHNICAL DOVE COMMITTEE REPORT *

Now with respect to the Dove Committee I wanted to make a couple of comments. A Resolution has been submitted. I'm positive that the Resolutions Committee has this resolution from the Technical Dove Committee, and the reolution is for the abolishing of the committee as it is now constituted. The reason I wanted to comment was that this came up at the annual Dove Regulations Meeting in Washington during the last week in June. It was discussed there. The feeling among the Dove people is that it would be better to have technical committees set up on the basis of management units rather than on the basis of regional associations, and

* Appears in the Transactions as APPENDIX

so this was the general consensus of opinion of the people at the Dove Regulations Meeting, that the regional Dove committees as such be abolished and that in lieu thereof they establish technical committees on the basis of management units. In other words, eastern management unit, western management unit and so forth. Now right along with that at the meeting, after the regulations work was over a special meeting was held to discuss proposals for four research projects. These were brought in by members of the southeast association and they wanted to set up four tests, so to speak, of differential regulations. As I recall they wanted to test different baiting regulation; they wanted to set up an experimental season for zoning in one of the States; increased bag in one of the States; and full-day shooting in one of the States. This is all in the southeast.

Well, this came in for a great deal of disoussion, but it devolved down to the fact that in order to carry out any one of these experiments you had to have a known population unit to start with, and this we do not have on a state-basis in the case of the mourning dove. The population units that we do have, although they are big, are based again on the management units. In other words, the data to date indicates that we do have an eastern management unit population to work with, and a central and western one. So, this is about where it wound up that if you were going to run any of these special seasons or special tests, that it had to be done on the basis of the management units as they are now constituted. It might be further refined in the future, but on the basis of present data, these are the specific populations that you could work with. This is just a little background for the resolution which will be coming up, I am sure, a little later on, and that's about all I have to report for the Committee.

CHAIRMAN MOORE: I don't believe we need a motion on this particular report, because it was not a committee report. It was just information that Tom consented to give us. Does the Resolutions Committee know whether there is a resolution on that?

MR. WAYNE OLSON (Chairman of the Resolutions Committee): Yes.

MR. MOORE: There is. Well, we will just skip that until we get to it then. All right, I thank you. I turn the chair over to the President.

PRESIDENT CLARKE: Thank you very much, George.

Those of you who have driven through Ontario will know that the place is full of doves. We had a dove season a few years ago which some of us will remember for a long time. Before we have another, and I really hope that one day we do have another, there will have to be a certain amount of what in East Africa is known as "fitina" which arose there that will have to be buried. It's still a little bit too much above ground to dig in yet, but if anyone wants to come up here and band doves it might be a good idea. We actually would have a hard time getting money to enter into a

program on something that we can't shoot or can't do anything about, and isn't in any danger or anything like that. If anybody just wants to come up here and get information, why we'll make him welcome. We'll show him places where there are lots of doves. Doug Roseborough, what time is the coffee laid on? We're into the formal business meeting.

MR. ROSEBOROUGH: Ten-fifteen.

PRESIDENT CLARKE: The next item on the official program, after these reports, is the question of Time and Place. As we set these committees up in this organization, Time and Place and Nominations are so intimately linked that they pretty well work together, and the question of Time and Place is run a couple of years ahead, and it's a matter of rotation and invitation, and I wonder who has the information. Yesterday we were talking with Bill Towell about whether or not Kentucky was going to step into the rotation system for the first time. Has this been decided? Mr. Fleming can report on it, can he?

MR. FLEMING (Indiana): The time and place of our Committee responsibility we would report on now. We had invitations from Missouri, Iowa and Illinois for the 1967 meeting. The 1966 meeting, of course, is already set. In an attempt to better establish a rotation so that we would not impose on the hospitality of any member, we recommend that the invitation of the State of Iowa be accept for the 1967 meeting. I don't feel that we should go farther than that year. However, if there is any question about the rotation that seems in order following the 1967 meeting we could give that information, although Walter Scott did a very helpful thing in the last year's report in getting some of this straightened out for us. So we recommend that the invitation of the State of Iowa be accepted for the 1967 meeting.

PRESIDENT CLARKE: Is there any discussion of this recommendation?

MR. FLEMING: I move that this be accepted.

DR. SCHNEBERGER (Wisconsin): I second that motion.

PRESIDENT CLARKE: All in favour. Opposed (None). CARRIED.

MR. WALTER SCOTT (Wisconsin): I might point out that it looked like Missouri possibly was next in line. But, this is a question, and there has been some discussion about holding these meetings in conjunction with the Midwest Wildlife Conference. We're not exactly sure when that's going to take place, if it ever does, so I think this idea of just talking about '67 is about as far as we ought to go.

PRESIDENT CLARKE: Fair enough. By a little rough calculation I figure that by about 1977 we'll be seeing you all back here. Actually this doesn't seem too much of an exaggeration. This is a fairly healthy sort of an organization. It is true that of those who were at Dorset a corresponding number of years ago, we've lost Bill Harkness and Bruce Stiles and so on, but on the other hand, you can look at some others, like Tom Kimball and Clarence Cottam who aren't with us any more but, nevertheless, the spheres of activity that they've gotten into seem to be very important, and for myself I can say that although I doubt very much that I'll be in any administrative position,

if I'm anywhere around, I'll guarantee to come to the meeting.

Coffee Break.

PRESIDENT CLARKE: If you will just bring your coffees to the table and sit down, then we can get started. I call on the Chairman of the Resolutions Committee, Mr. Wayne Olson

RESOLUTIONS COMMITTEE REPORT

MR. WAYNE H. OLSON, (Commissioner, Minnesota Department of Conservation):

Thank you, Dr. Clarke. We'll try to keep this as brief as possible. Can you hear me? I don't have copies of the Resolutions for everyone. There are a few copies floating around. They were just, some of them, typed up this morning. We made as many copies as the typewriter could handle. If there are any specific questions on any of the resolutions as we go along, you might come up and take a look at the extra copies we have here, unless someone has them at your table. Much of the material that the Resolutions Committee would normally be concerned with was covered very adequately, we felt, by the Legislations Committee, and we have therefore proposed just this brief resolution on those matters.

Resolution No. 1 - Legislative Recommendations

BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners adopts the recommendations of its Legislation Committee and directs the Chairman of said Committee to repeat this action to the Chairman of the Congressional Committee considering the legislation on which recommendations are made.

Shall we adopt each of these resolutions as we go along?

PRESIDENT CLARKE: I think that would be a good idea.

MR. OLSON: I move the adoption of this resolution.

MR. MOORE: I second that motion.

PRESIDENT CLARKE: All in favour. Opposed (None). CARRIED.

MR. OLSON: These are not in any significant order. Rather, they are in the order in which they were typed I think in most of these resolutions I'll pass over the Whereas clauses and just read the resolution itself. The second resolution is in connection with the mourning dove management unit. This is the resolution which was submitted by the Technical Dove Committee.

Resolution No. 2 - Mourning Dove Management Unit - Technical Committees

WHEREAS, there are presently three regions in the United States designated as Mourning Dove Management Units; and

WHEREAS, the member states of the Association of Midwest Fish and Game Commissioners are divided in approximately equal numbers by the line separating the Eastern Mourning Dove Management Unit from the Central Mourning Dove Management Unit; and

WHEREAS, mourning dove research, management and harvest programs within these Management Units can best be effected through an association of states directly sharing the mourning dove resource;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners respectfully recommends to the International Association of Game, Fish and Conservation Commissioners that the states in the Eastern and Central Mourning Dove Management Units be joined together to form respective Management Unit Technical Committees in each Unit for the purpose of coordinating and continuing efforts to fulfill the research and management needs necessary for the wise use of the mourning dove resource; and

BE IT FURTHER RESOLVED that, contingent upon the establishment of such committees by the International Association of Game, Fish and Conservation Commissioners, the Midwest Technical Dove Committee be dissolved.

I move the adoption of this resolution.

MR. Wm. TOWELL: I second that motion.

PRESIDENT CLARKE: All in favour. Opposed (None). CARRIED.

MR. OLSON: If any of you want to discuss any of these, I am sure you will free to do so.

The reason for this special resolution on this river is that the Legislation Committee recommended support of the wild rivers bill, the St. Croix and Namekegon and Wisconsin were included in the original recommendations for inclusion in the wild rivers system. However, separate legislation has been introduced on the St. Croix, and since it is in the Midwest area we felt that a special resolution was justified.

Resolution No. 3 - St. Croix National Scenic Waterway

WHEREAS, portions of the Namekegon River in Wisconsin and the St. Croix River in Minnesota and Wisconsin have been recommended by the Wild Rivers study team for inclusion in a national system of Wild Rivers; and

WHEREAS, said rivers constitute an outstanding water recreation area;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners urges adoption of legislation pending in the Congress for the establishment of the St. Croix National Scenic Waterway;

AND BE IT FURTHER RESOLVED THAT copies of this resolution be forwarded to the authors of, and the Chairman of the Congressional Committee considering, said legislation.

I move the adoption of this resolution.

MR. T.R. EVANS: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution deals with waterfowl production areas, and I will pass over the whereas clauses (included in the transactions).

Resolution No. 4 - Waterfowl Production Areas

WHEREAS, there continues to be an urgent and growing need for the preservation of waterfowl habitat in the member states of this Association, particularly North Dakota, South Dakota, Minnesota and Nebraska; and

WHEREAS, many of the states are capable of accelerating the acquisition of waterfowl habitat if provided financial assistance;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners urges the Congress to appropriate portions of the funds available therefor to be used by the states for waterfowl production areas; and

BE IT FURTHER RESOLVED that the International Association be requested to direct its Grants-in-Aid Committee to prepare the necessary legislation in cooperation with the Bureau of Sport Fisheries and Wildlife and that an all-out effort be made by the Association to obtain passage of this legislation at the next session of Congress.

I move the adoption of this resolution.

MR. EVANS: I think there is one thing we want to consider here, and this was a part of the recommendation of the Wetlands Committee, and that is if we do want to talk in terms of a portion of the loan funds being made available as grants-in-aid to the States that we also include with that additional appropriations. Now, there is some feeling that we should leave the loan funds alone and ask for new appropriations for grants-in-aid purposes, and that I think will get a little discussion on this point. I think we might well include both, perhaps, a portion of the loan fund and other additional appropriations for this specific purpose.

MR. OLSON: The resolution, as it is worded, is not specific in tieing it to any particular fund, but merely recommends that portions of the funds available for this purpose be made available to the States. I think that would be included in the resolution as it is worded.

MR. EVANS: It is not referred to a loan fund.

MR. OLSON: Would you like to make that specific?

MR. SHIELDS: Couldn't this matter be left up to the International? The resolution goes to the International, is that correct?

MR. OLSON: Right, and requests the International to prepare legislation and support it in the next session.

MR. WALTER SCOTT: I second the motion.

MR. OLSON: Any other discussion on it?

MR. GALE: I believe the resolution is alright as it stands to go to the International, but as Tom says, it was the feeling of the Mississippi Flyway Council Habitat Committee that these funds probably should be appropriated separately.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution relates to soil conservation service projects.

Resolution No. 5 - Soil Conservation Service Projects.

WHEREAS, the Soil Conservation Service has greatly extended its program of small watershed management for flood water retention; and

WHEREAS, the Soil Conservation Service is assuming an expanding role in recommending management of privately-owned land and water for outdoor recreation purposes;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners commends the Secretary of Agriculture and the Soil Conservation Service for the progress that has been made in working with the fish and game agencies of the states, and urges that further co-operation and coordination by the Soil Conservation Service with state fish and game agencies be effected before initial planning is undertaken on such projects.

I move the adoption of this resolution.

MR. GEORGE MOORE: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON; The next resolution relates to a Greenbelt concept. This is resolution that was adopted by the Western Association and submitted to us for consideration. I will omit the Whereas clauses (included in the transactions).

Resolution No. 6 - Regarding a Greenbelt Concept.

WHEREAS, there is an increasing need for open spaces to meet the pressures and demands of rapidly expanding metropolitan and urban areas; and

WHEREAS, urban developments are frequently situated on or within a short travel distance from river courses which possess great potential for outdoor recreation development and the preservation and enhancement of fish and wildlife; and

WHEREAS, realization of such potential is now seriously threatened by accelerated industrial, agricultural and urban encroachment upon historic flood plains as a result of upstream flood control and other water developments; and

WHEREAS, recent declarations of federal policy clearly encourage full development of all resource potentials, including open spaces, in conjunction with federal water projects;and

WHEREAS, there is a need for greater recognition of fish, wildlife, recreation and other values that can be realized by establishement of "greenbelts" along river courses;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners endorses the concept of "greenbelts" along river courses, particularly near larger cities; and

BE IT FURTHER RESOLVED that the Association encourages all agencies concerned with flood control and other water developments to include, where appropriate, plans for establishment of "greenbelt" areas as a part of such projects; and

BE IT FURTHER RESOLVED that the Association recommends that appropriate state and federal agencies establish "greenbelt" or similarly designated programs within their respective organizations where such are not already in existence. The basic purpose of such programs should be to stimulate a greater recognition of the public benefits to be derived from "greenbelt" areas; and

BE IT FURTHER RESOLVED that copies of this resolution be sent to the Secretary of the Interior, Corps of Engineers, Secretary of Agriculture, and governors of states represented by membership in this Association. The Association also urges that member representatives distribute copies of this resolution to appropriate agencies and individuals of their respective states who may be able to assist in promoting the "greenbelt" concept.

I move the adoption of this resolution.

MR. BOB ELLIOTT (Colorado): I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution relates to fish and wildlife problems at Corps of Engineer projects, and also originated with the Western Association as far as our Resolutions Committee is concerned.

Resolution No. 7 - Fish and Wildlife Problems at Corps of Engineer Projects

WHEREAS, the Congress of the United States has repeatedly expressed the Nation's desire to conserve and develop fish and wildlife resources as

a part of its water-development program, initially by the passage of legislation in 1934 and, subsequently, by amendments under which the legislation was strengthened and designated as the Fish and Wildlife Coordination Act; and

WHEREAS, the Congress of the United States has recently reaffirmed its concern for the welfare of our fish and wildlife and other outdoor recreational resources by the passage of a number of measures, including the Outdoor Recreation Act, the Wilderness Act, the Land and Water Conservation Fund Act, the Refuge Revenue Sharing Act, and others; and

WHEREAS, the President, on May 15, 1962, approved for application by the Deparrments of the Interior, Army, Agriculture and Health-Education-Welfare policies, standards and procedures for use and development of water and related land resources cited as Senate Document 97, which provides that "Full consideration shall be given to the opportunity and need for outdoor recreation and fish and wildlife enhancement in comprehensive planning for water and related land use and development, and project formulation and evaluation"; and

WHEREAS, it is in the best interest of our Nation that such resources be conserved and developed; and

WHEREAS, in the past the Corps of Engineers maintains that it will consider only navigation in the issuance of permits for construction, dredging and filling activities in navigable waters of the United States; and

WHEREAS, the Corps is presently implementing a policy which would place the burden of mitigating fish and wildlife damages on the fish and wildlife agencies, except for such integral structures as fishways;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners request the Secretary of Defence to instruct the Corps of Engineers to,-

1. Respect the intent of the Congress as expressed in the Fish and Wildlife Coordination Act and rescind the interpretation of the Fish and Wildlife Coordination Act which was presented recently by the Corps before the Senate Public Works Subcommittee on Appropriations and wherein the Corps proclaimed it will not undertake fish and wildlife mitigation except for those features which it considers to be integral parts of the projects.

2. Respect Senate Document No. 97 regarding policies, standards, and procedures for use and development of water and related land resources.

3. Honor its own February 16, 1962, Joint Policy Agreement with the Department of the Interior which states, in part, that insofar as permitted by law the Department of Defence will acquire in fee as part of the reservoir project construction, such lands as are needed to meet present and future requirements for fish and wildlife as determined pursuant to the Fish and Wildlife Coordination Act.

4. Adopt a positive policy of including specific measures including the acquisition of lands in fee at Corps of Engineer projects for the conservation, development and improvement of fish and wildlife resources.

5. Adopt a positive policy of not issuing permits for dredging and filling activities in navigable waters of the United States or requiring appropriate modifications in work contemplated when such activities are expected to cause significant losses to fish and wildlife resources.

and

BE IT FURTHER RESOLVED that copies of this resolution be sent to the President, to the Director of the Bureau of the Budget, to the Secretary of Defence, Secretary of the Army, to the governors, to the legislators and to other appropriate government officials.

I move the adoption of this resolution.

MR. WILLIAM TOWELL: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution opposes a national fishing licence.

Resolution No. 8 - Opposing a National Fishing Licence

WHEREAS, the management of fisheries has been vested in the state governments; and

WHEREAS, the fisheries resource is best managed on a state basis because of widely varying habitats, species, and fishing opportunities; and

WHEREAS, licence fees and season setting are an intricate part of proper resource management;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners oppose any move for a national fishing licence.

I move the adoption of this resolution.

MR. SHIELDS: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: It appears that the resolutions committee represented a cross-section of the group, or else we decided to sidetrack all controversial issues.

The next resolution relates to a proposed tax on component parts of firearms.

Resolution No. 9 -

WHEREAS, the re-loading of shotgun, rifle and pistol ammunition by hunters and shooters has reached record proportions; and

WHEREAS, the existing 11 percent manufacturer's excise tax on sporting firearms and ammunition has made and is making significant contributions to essential wildlife programs in all of the states through the administration of the Federal Aid in Wildlife Restoration Act of 1937; and

WHEREAS, the deposit of additional monies in the Federal Aid to Wildlife Restoration Fund would enable the states to accelerate their wildlife programs so as to provide still greater public benefits to hunters who are reloading ammunition and to others:

NOW, THEREFORE, BE IT RESOLVED by the Association of Midwest Fish and Game Commissioners that the 11 percent manufacturer's tax on sporting firearms and ammunition be extended to include powder, shot, bullets, primers, metallic, plastic and paper cartridge cases, wads, and other reloading components, accessories and equipment and that the monies received therefrom be credited in the Federal Treasury to the Federal Aid to Wildlife Restoration Fund for allocation to the states on a matching grants basis under the terms of the Federal Aid in Wildlife Restoration Act of 1937.

I move the adoption of this resolution.

MR. RUSSELL STUART: I second that motion.

MR. EARL ROSE (Iowa): I would like to comment briefly on this. A similar resolution was prepared and sent to Towell for consideration by the International, and certainly we favour this, but we are going to get a lot of opposition from the manufacturers of component parts and the home-loading equipment. I've got 40 letters suggesting that archery equipment be also included. The archers in Iowa have indicated several times that they would like to be included in this. Many of our hand loaders in Iowa feel that they should be included regardless of the fact that thousands upon thousands of trap loaders are the ones that are most vociferous in opposition to this measure. I think it's thoroughly justifiable. Most of the trap shooters are hunters.

MR. EVANS (Illinois): I think I would be inclined to agree that there is justification for including these items along with the other excise tax, but I would just like to raise one question. I wonder if this is the opportune time to be proposing something like this when we have just gone through a sizable elimination of excise taxes. The elimination of the excise tax on fishing tackle and sporting arms and ammunition has ever been seriously considered, I don't think, but I just wonder if they might not be and especially if the proposed one which will raise opposition on the part of a sizable group of people, and then perhaps it would be a little more opportune to wait a few years before we tackle this sort of thing - at least throw it out for consideration.

MR. THREINEN: This is a question from someone who is relatively unknowledgeable on this subject, but I just wondered if there isn't an equivalent Canadian interest in this excise tax and its ramifications.

PRESIDENT CLARKE: Do you want to answer that, Vic?

DR. SOLMAN: I don't know that I can say anything to be very useful. We don't have the equivalent excise tax in use and there are no ear-marked funds in the Canadian government operation. We have excise tax of various types but they go into the general revenue, and so we don't have anything equivalent in use that is made up of certain excise tax revenue of the United States.

PRESIDENT CLARKE: I can say this that when they wanted to put in a waterfowl hunting licence, we told them they already made more money out of the shells than anybody else, and that a man from Ontario with a $1.00 licence blew off a $4.00 box of shells from which a dollar went to the federal government, and now they propose to come along and take a licence out of us. We suggested that maybe they didn't have to, all they had to do was to grab a bit of the money they were already making. But, as Vic says, it's not ear-marked, and I don't know whether we want to get into this thing or not. I would say off-hand that within the terms of reference our present status is that there is nothing equivalent.

DR. GUTERMUTH: I don't know, Wayne, whether I'm out of order here. If I am, why just politely rule me out.

MR. OLSON: If you are, I'm sure the chairman will raise his voice.

DR. GUTERMUTH: If not, I'd just like to comment on a few things. First, about the Canadian situation. Of course, I've always felt that these were matters that Canada itself had to resolve and they have the same perogatives, I am sure, in this organization and others like it to make resolutions when it is appropriate and proper. In that connection, though, Vic, our Treasury Department is very, very much opposed to ear-marked funds but despite the objection of the Bureau of the Budget and the Treasury Department within the United States upon a number of occasions, while it took us ten years to get some of these bills enacted, they were enacted, and they have been maintained. Now, talking about our present status, it's true,as Tom says, we just went through this matter of retaining of excise taxes when a great many of our luxury taxes were removed. We had no opposition whatsoever during this battle. The conservationists of the States asked that this fund be retained, and as you all know it was retained. Now, the major companies by formal action supported the retention of this tax. I think that the major companies would feel that this is appropriate and proper and would support this effort. It's ture that we might get some objection from what I call some of the small makers. Just what this is I'm not too sure, or just what the extent of it is. But my reaction to that is this: in this day and age a great many of the hunting fraternity are reloading. They are getting the benefits of these great game programs across the country, and as the price of shells goes up there is more and more reloading. My reaction has always been: let those people pay their proportionate share. Now, in response to the other suggestion that was made here that we might consider archery. I am personally in full accord with that suggestion. My only thought is: let's deal with these things separately. Let's not take on all of the opposition in each and every fight that we get into in conservation in this country. We'll have enough battle, Mr. Rose, from those

few people who are going to oppose measures this time from the standpoint of handloading. Let's take them on separately, and this is my suggestion to Congressman Dingell. You all know he had a Bill in like this, and I'm not sure whether his last Bill included archery. He may insist on putting it on again. If he does, my suggestion would be: let the member of Congress who introduces this legislation determine whether or not he thinks it's feasible after conferring with all the various people on the subject as to whether or not they want to put this in one package.

MR. ROBERT ELLIOTT (Colorado): Earl have you got any idea how much money this is going to raise?

MR. ROSE: I don't think anybody can calculate that, but certainly there are tons upon tons of powder and shot sold every year.

MR. OLSON: Dan Poole, I think, has an estimate.

MR. POOLE: The comment has been made, Bob, that the amount that could possibly be raised through this source and the list of items to be taxed would depend on negotiations between the manufacturers and the federal government. It has been estimated that it would possibly equal the current PR appropriation annually. This is a sizable business. I'd just like to make a further comment or observation while I was on my feet. You might consider instructing the Resolutions Committee to draft a parallel-type resolution here dealing with archery rather than putting it in together, just draft another relating to archery.

MR. OLSON: As I understand it, Mr. Rose you did not propose to amend the present resolution?

MR. ROSE: No, it was just a suggestion. I did receive some advice that this was introduced in 1962 by Congressman Dingell and was flatly refused at that time.

DR. GUTERMUTH: He simply never got action on the Bill. There was not enough support on the part of the conservationists. Had they gone to work at that time, I think this would have become a reality.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution relates to the excise tax on pistols and revolvers.

Resolution No. 10 - Excise Tax on Pistols and Revolvers.

WHEREAS, the U.S. Congress in its recent approval of the Excise Tax Reduction Act of 1965 has retained the existing 10 percent manufacturer's excise tax on pistols and revolvers; and

WHEREAS, the approximately $2 million accruing annually from this excise tax is credited to general funds in the U.S. Treasury; and

WHEREAS, in the aforementioned Act the Congress wisely retained the existing 11 percent manufacturer's excise tax on sporting firearms and ammunition, the proceeds of which are credited to the Federal Aid to Wildlife Restoration Fund for apportionment to the States under the terms of the Pittman-Robertson Federal Aid in Wildlife Restoration Act of 1937;

NOW, THEREFORE, BE IT RESOLVED by the Midwest Association of Fish and Game Commissioners that the Federal Aid in Wildlife Restoration Act of 1937 be amended so as to receive the annual proceeds from the manufacturer's excise tax on pistols and revolvers (Revenue Act of 1954, Title 26, U.S. Code, Section 4181) for the purpose of said Federal Aid in Wildlife Restoration Act; and

BE IT FURTHER RESOLVED that such amendment authorizes the apportionment of up to 50 percent of the annual proceeds from such tax on revolvers and pistols to the States for the purpose of conducting approved hunter safety training programs and for the preparation, distribution, and development, as deemed necessary, of suitable program training materials and facilities.

I move the adoption of this resolution.

MR. WILLIAM TOWELL: I second that motion.

MR. LARRY GALE (Missouri): I wonder whether it isn't the State attempting to earmark this money for hunter safety training or any other specific purpose. I think most would prefer to maintain more flexibility rather than earmark a certain percentage for this purpose.

MR. ROSE: I wonder if the objections that have been raised concerning archery and archery equipment wouldn't apply here?

MR. OLSON: This is an existing tax as I understand it, not the imposition of a new tax, but rather the dedication of the existing tax to the wildlife fund.

DR. GUTERMUTH: If the Nation repealed all these other taxes, the conservationists requested that we leave this tax alone. This tax is already being assessed on pistols and revolvers and for some reason or another has never gone into the PR funds. We contend that many others should have gone there long ago. Governmental bodies can avoid paying this tax by executing the necessary documents, but on this matter of earmarking, here again most of your pistols and revolvers are not used for hunting purposes. I think that if we are going to convince the pistol and revolver purchasers in this country as well as the manufacturers that this fund should be included over there, we have got to give them some kind of assurance that they are going to benefit. Sooner or later they are going to repeal this tax.

DR. RALPH MacMULLAN: I wonder if in the light of the Dodd Bill, whether we shouldn't remain completely silent.

MR. POOLE: That question has been raised a number of times, Mac. I think that a number of reputable people have appeared before the Dodd Committee hearings and before the hearings in the House, and have made a very strong presentation that there is nothing dishonourable about the use of handguns, and for anyone,

duck hunters or otherwise, to think that handguns have a bad connotation would be erroneous.

DR. GUTERMUTH: We've always maintained the position that if people use handguns correctly, if they use them in sport, it is a very honourable sport that has a long tradition. We don't think we ought to govern it.

DR. MACMULLAN: I agree with that ..... I'm ready to stick it in. I think I'd be inclined right now to take the cowardly way out.

MR. EVANS (Illinois): I don't know whether this is the cowardly way out or not, Mac, but I can't help but feel that perhaps your reasons other than that perhaps we're sort of appearing a little bit hoggish here and want to go after something we don't have any real, legitimate claim to. As "Pink" said, pistols and revolvers are used in rather different ways so far as hunting is concerned. We are asking for the use of a tax here under the Federal Aid and Wildlife Restoration Act and we are asking for this tax on things which are not used in hunting at all. That may be true, but there is a tremendous amount of powder and shot used by reloaders. I dare say that at least 75 percent of it is used for trap shooting and skeet shooting, and it's not used in the field, so I just hope and pray that we're not sticking our necks out here and asking for monies under this Act which we're not really entitled to.

DR. GUTERMUTH: I'd like to make it abundantly clear to you now that the House Ways and Means Committee, which acts upon excise taxes and which also handles firearms legislation, left this tax in here. As I said to you before, when they repealed all their excise taxes of a similar nature, they left that one in on PR and for pistols for the express purpose and understanding, I think in compliance with the requests of the conservationists that it be left in there, so that it could be made equal and uniform. If we don't take advantage of this at this time, I think we are sort of kidding ourselves about this, because we've got these Committees in the mood. They left it in here - this is self-evident. They're ready to go. I think they'll consider legislation of this kind if they can get the proper support for it. If they don't, well, of course, they won't.

MR. EVANS: I withdraw my objection.

MR. TOWELL: I think you made the same point that I wanted to make. It does seem rather foolish that we would pass the preceding resolution and fail to adopt this one - where we have the existing tax, where we have an existing $2 million that could very easily with no pressure, be converted over into our Pittman-Robertson program, and, I think, especially now that the Ways and Means Committee has listened to us, that we are in an excellent position to accomplish this. Now, most of the States will not be handicapped by this apportionment of up to 50% for hunter training programs, because I think practically all of us have existing programs. This is just a means whereby we can get some federal assistance in continuing what we are already doing. This is why I don't think that the earmarking provision in this particular case is going to be a concern. I would much rather see the previous resolution withdrawn than reject this one.

MR. FLEMING: What I have to say should have been said before the last resolution was passed. I must agree with Tom Evans from Illinois that I did not feel that we should insist that those who reload for trap shooting purposes should contribute to the excise tax which goes into wildlife restoration. As has been said, most of those people who trap shoot also hunt, and when they do that they pay their share of this tax. I think it's a double tax on the fellow who also wants to go out and shoot a few clay pigeons. I realize I should have said it then, but Tom's comment has spurned me a little bit. I think we should not be in favour of this sort of thing - taxing the reloader unless there is some way to separate those who reload for hunting purposes and those who reload simply for trap shooting. I see no more connection between the fellow whose favourite recreation is trap shooting and taxing him for a wildlife program than I do the fellow who plays golf or something like that. I just wanted to express that feeling.

MR. TOWELL: In regards to what was just said, we've been taxing the trap shooters who shoot ready-made shells for all these years.

MR. OLSON: I'd just like to say these trapshooters are much better shots, and they get much more game for their money.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution was not submitted in time to be considered by the full committee, but we prepared it nevertheless and I will read it to you for your consideration.

Resolution No. 11 -

WHEREAS, stream and river courses with associated low ponds on flood plains provide an essential ecological break in the massive expanse of agricultural land; and

WHEREAS, stream and river courses provide critical and scarce habitat for fish and wildlife resources; and

WHEREAS, stream and river courses provide fascinating and unusual aesthetic and recreational experiences in the variety of biota they support; and

WHEREAS, stream and river courses with associated wetlands and flood plains contribute importantly to maintaining ground water levels and breathing space for floods;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners does hereby implore the agencies involved in water management, particularly the Soil Conservation Service and Corps of Engineers, to discontinue the all too prevalent practice of stream channelization and to make more effective use of many imaginative practices which would retain waters in the watershed. This body opines that stream channelization will in most cases, be the antithesis of sound public policy and would hope that agencies involved would have regard for the total public welfare.

I move the adoption of this resolution.

MR. ROSE: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed?(None). CARRIED.

MR. OLSON: The next resolution relates to the Public Land Law Review Commission:

Resolution No. 12 - Public Land Law Review Commission.

WHEREAS, the Public Land Law Review Commission as established by Congress has now been organized for the purpose of making a comprehensive review of the public land laws and rules and regulations promulgated thereunder and determining whether and to what extent revisions of those laws are necessary; and

WHEREAS, the Commission has requested "the support and cooperation of all persons and groups interested in and who have a stake in the future use of the public lands";

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners convey to the President, International Association of Game, Fish and Conservation Commissioners its desire to cooperate with and support state organizations which will be presenting testimony to the Public Land Law Review Commission in an effort to ensure that hunting, fishing and other outdoor recreational interests will be recognized and provided for in the recommendation of the Commission; and

BE IT FURTHER RESOLVED THAT we request the International Association of Game, Fish and Conservation Commissioners to investigate the advisability of employing competent legal assistance, to review all matters under consideration by the Commission to compile pertinent data and prepare testimony for the Association and its members.

I move the adoption of this resolution.

MR. R. ELLIOTT: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: The next resolution also was submitted too late for review by the entire Committee:

Resolution No. 13 -

WHEREAS, the United States Department of Agriculture's payment of subsidies and providing of free technical assistance on Class III, IV and V wetlands, where a crop history can be or has been developed, and on Class I and II continues to be a stimulus to drainage of areas valuable to waterfowl and other wildlife,

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners urges that all federal assistance, technical and financial, for drainage of any areas having a substantial value for fish and wildlife be discontinued.

I move the adoption of this resolution.

MR. RUSSELL STUART: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: We have only two left. This next resolution also was not acted upon by the Resolutions Committee because it came in only this morning.

Resolution No. 14 - Save the Big Sioux River.

WHEREAS, the House of Representatives Committee on Public Works is currently considering a project which would involve the straightening of the Big Sioux River, between the town of Akron and Sioux City, Iowa; and

WHEREAS, this 55-mile stretch of river has been determined as a valuable fish, wildlife and recreational resource by the Iowa Conservation Commission; and

WHEREAS, the Governor of Iowa, the Iowa Conservation Commission and the Iowa Natural Resources Council have repeatedly gone on record as opposing this project; and

WHEREAS, the Midwest Fish and Game Commissioners and the International Association of Game, Fish and Conservation Commissioners have previously resolved that the Congress not appropriate funds to straighten any river without the prior approval of the state's fish and game department;

NOW, THEREFORE, BE IT RESOLVED that the Association of Midwest Fish and Game Commissioners requests that the House of Representatives Committee on Public Works reaffirm its position concerning the Big Sioux River and do oppose this project and not recommend it to the House of Representatives for appropriations to destroy this valuable recreational resource.

I move the adoption of this resolution.

MR. FLEMING: I second that motion.

MR. ROSE (IOWA): We have for four years been actively fighting the U.S. Army Corps of Engineers. We hope that our resolution of last year and also the International may have more impact. We are very hopeful that this body will pass it so that we can use it in our presentation before the House Public Works Committee in the next three weeks. I am hopeful that this measure can receive favourable consideration by the Appropriations Committee. This is one project where they are not allowing any litigation. Innumerable legal problems have not been solved. They are shortening our boundaries and decreasing the size of the State. You can buy the land for $7 million, and you can turn the thing over to pheasants. We don't need the land for agriculture. We're in favour of flood control. We've submitted all kinds of alternate procedures - reservoirs, watershed treatments, everything else, but we're utterly ignored. I don't think there is anyone that can beat the U.S. Corps of Engineers.

MR. OLSON: I get the impression that Mr. Rose thinks this is not a good project.

MR. SCOTT(Wisconsin): I'd like to speak in support of this, but I should like to suggest that the word "reaffirms" be just "reaffirm" without the "s". (So quoted in the Resolution).

PRESIDENT CLARKE: I think, with Mr. Rose' appeal, some of you Davids that have tackled your Goliaths before, maybe you could send him some of your rocks. All in favour? Opposed? (None). CARRIED.

MR. OLSON: This is the last resolution and this was acted on by the full committee.

Resolution No. 15 -

WHEREAS, the Province of Ontario has provided an exceptionally well-organized meeting and program for the 32nd Annual Convention of the Association of Midwest Fish and Game Commissioners; and

WHEREAS, both delegates and their families are most appreciative of the hospitality and courtesies extended by our hosts in the beautiful city of Toronto;

NOW, THEREFORE, BE IT RESOLVED that this Association expresses its gratitude and appreciation to the Province of Ontario and especially to the Ontario Department of Lands and Forests and the Honourable A. Kelso Roberts, Minister and F.A. MacDougall, Deputy Minister, the Metropolitan Toronto and Region Conservation Authority, and the Canadian National Sportsmen's Show; and

BE IT FURTHER RESOLVED that copies of this resolution be forwarded by the Secretary to each of the three above-named persons and organizations.

I move the adoption of this resolution.

MR. MOORE: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

MR. OLSON: I think we should vote on this by standing and giving a hand to the Ontario Department. (APPLAUSE).

PRESIDENT CLARKE: On behalf of all my hard-working staff who did all these things that are mentioned in this resolution and which I can endorse because I had nothing to do with it myself, as they really did it in my absence and as efficiently as you have said, I am very pleased to accept this last resolution. You know, for us Canadians it is rather interesting to watch some of these resolutions going through in our poverty-stricken condition. They remind me of an African game called bau in which there are little

hollows on a board full of chips and the point of the game is to get all of those in your hand and not leave any of them on the board. There was something about what went on here that sort of reminded me of this game.

I think the next item on our business would be the Secretary-Treasurer's report. The Secretary-Treasurer went on holidays but he stayed here till a very late hour last night - I don't know just how late - and I understand that the report is in hand and will be presented by Doug Roseborough.

MR. ROSEBOROUGH:

REPORT OF THE SECRETARY-TREASURER, ASSOCIATION OF MIDWEST FISH AND GAME COMMISSIONERS, JULY 28, 1965:

A total of $1,957.81 was received by U.S. Cashier's cheque in American funds. Exchange at the time was 7¼% and the total deposit in Canadian funds was $2,099.75. This was deposited with the Bank of Montreal on February 16, as follows:

| | | |
|---|---|---|
| Savings Account Special No. 17 | - | $1,900.00 |
| Checking Account No. 3001-783 | - | $ 199.75 |

This account required two signing officers and the following officers were authorized:

C.H.D. Clarke
D.N. Omand
Miss A. Klassen

An additional deposit of conference receipts in part on July 27 of $744.46 was made to the checking account.

Expenditures to date total $83.00 leaving a balance in the checking account of $861.21 and in the savings account of $1,900.00.

Accounts for 1965 dues will go out within the next few weeks and your co-operation in prompt settlement will be very much appreciated.

I would like to acknowledge the good work by Wally Scott in presenting a clear balance statement for the year 1964 and the invaluable assistance of Miss Agnes Klassen in assisting with the arrangements for the Conference. Financial records will be transferred to the incoming Secretary-Treasurer towards the end of this calendar year.

I move the adoption of this report respectfully submitted.

(Signed) D.N. Omand.

DR. MacMULLAN: I second that motion.

PRESIDENT CLARKE: All in favour? Opposed? (None). CARRIED.

We come to the Auditing Committee Report. Woodrow Fleming is a

man with many hats here. This is the first one - the Auditing Committee - he is on again in another capacity.

MR. WOODROW FLEMING (Indiana):

When the list of committee appointments oame to my attention, I could see obviously that mistakes had been made. I should not have my name attached to so many committees. I don't know just what happened, and I thought I would protest and get it spread a little bit more, but like all of you when you're so busy you don't do the things that just don't have to be done, so here I am again. It reminds me a little bit of a story, and I just never remember stories, but I remember a story that Gerald Eddy of Michigan told, I think,at the Higgins Lake meeting some years ago, and I won't tell the whole story, but the crux of it was this: Back in the days of King Arthur in a certain situation it became necessary for the court jester to carry a nun, who was in transit across the country, on his back across a stream. The jester made the remark, "This virgin's on the ridiculous", and if you feel sharp enough you know what I mean. I thought it was a good story then. (Laughter).

The Auditing Committee, oomposed of Tom Evans of Illinois and myself, with the able assistance of Walter Scott of Wisconsin, the past Secretary-Treasurer, met with D.N. Omand, Doug Roseborough and Miss Agnes Klassen, who have all been involved I understand in keeping the Secretary-Treasurer's work in order. It should be pointed out that these people started out, I learned last evening, with the disadvantage of having all the records of last year's meetings stolen from an airport locker in Chicago. However, the funds of the organization were not involved, and your Auditing Committee finds the records in good order, with only current obligations of this meeting unpaid. Mr. President, I move the acceptance of the Auditing Committee Report.

MR. T.R. EVANS: I second that motion.

MR. WALTER SCOTT: I'd like to mention - it's a little incorrect there, Woody, there were two packages of materials that I shipped to Canada and the paokage of importance, which was the official records and so on, was not stolen. The thieves stole the stuff that wasn't very important anyhow. Moreover, in connection with the meeting of last year, the Secretary was given permission to deposit in the Conservation Center Library in Denver all of our reoords more than three years old, which I did. Therefore, the thieves didn't get those either.

PRESIDENT CLARKE: One thing I can vouch for is that the Wisconsin cheese came through.

All in favour? Opposed?(None). Carried.

In partial explanation of my own actions, I will say I discussed the affairs of this organization all the way back from Milwaukee, on the boat anyway across Lake Michigan, and then again at the Midwest meeting. We were all in agreement that it would have been a grave error to change our Auditors at this stage, so that's how Woodrow Fleming got stuck with the Auditing Committee. I acted on, I think, very good advice.

OLD AND NEW BUSINESS

Now, is there any old business remaining to be brought forward? I don't know of any? Does anyone here know of any old business? (None). Is there any new business, any new matter that should come before us now? (None).

In that case, we come to the stage, as I was about to say before, where I can turn my presidential responsibilities over and call upon Woodrow Fleming again, as Chairman of the Nominations Committee to make his Report and to conduct what is known as an election.

In this case, afterwards, I'll ask him with his own main strength and that of any henchmen whom he may require that he conduct the new President into the Chair, and he can take over. I'll add, though, that last year the Wisconsin people decided to ship the gavel and the rest of the equipment by registered parcel post, but in the present state of the postal business here in Canada, it might be a good idea if the new President just put it in his suitcase.

MR. FLEMING: This is quite a responsibility.

NOMINATING COMMITTEE REPORT

The members of the Nominating Committee, Earl T. Rose of Iowa, Walter Scott of Wisconsin and myself, as might be suspected, have chosen certainly the most fitting person for our nomination for President next year: Mr. George C. Moore, Director of the Kansas Fish and Game Commission; for Vice-President: Everett Speaker, Conservation Director from Iowa; and for Secretary-Treasurer: Mr. John Polson, also of Kansas of the I. & E. Division.

If I'm to carry on the election, are there other nominations? (None).

If not, I move that these nominations be accepted.

MR. RUSSELL STUART: I second that motion.

MR. FLEMING: All in favour say "Aye". CARRIED.

Mr. Moore, Mr. Speaker and Mr. Polson are duly elected. I am going to ask Mr. Earl Rose, a member of the Committee, to conduct the new President to the rostrum where he can take over. I want to pass that responsibility over.

APPLAUSE FOR THE NEW PRESIDENT.

MR. ROSE:

George, I am sure that I want to extend by hand the congratulations of the entire Association, and to wish you every success.

MR. GEORGE MOORE: Thank you, and luck, I hope. You know I have half a mind to leave this (gavel). I'm a woodworker and I've got a whole living room full of the darn things. I try to give away some of them. I guess I could leave this. It might save paying duty to get it back into the States.

Well, I want to thank the group for this honour. I consider it a real honour. I'm fairly new with the Midwest and I don't know what kind of shenanigans I pulled to get elected to the Presidency so quickly. I want to say again that I certainly have enjoyed the hospitality of the entire Department and the Province and all of the other people that have made this meeting such a wonderful meeting. I don't think that I would be able to even meet the fine time that we've had here, and in Wisconsin and Ohio in the past, but we certainly will try to do our best in Wichita some time in about a year from now.

When Doug was talking this morning about whether or not he was going to be here it reminded me of a story that I think might be appropriate - of the couple who were celebrating their fiftieth wedding anniversary and after all the people had gone home, well, they of course went to bed, and in a few minutes the old boy thought he heard his wife sniffling, so he turned around and said, "What's the matter?" She said, "Well, you used to tell me you loved me." So, he did, he turned over and he told her he loved her. He was about to go to sleep again and all of a sudden he heard her sniffle again, and he said, "Now, what's the matter?" She said, "Well, you used to cuddle me and tell me you loved me." So he turned around and took her in his arms and said, "I love you more than ever." Just about the time he dosed off he heard her again, and he said, "Now, what's the matter?" She said, "You used to bite my ears when you told me you loved me." So he jumped out of bed, and she said, "Where are you going?" He said, "I'm going to the bathroom to get my teeth." (Laughter).

We may be around ten years from now, but we won't be able to do some of the things we've been doing, I strongly suspect, some of us anyhow.

Well, I don't know that we have anything else, unless we have any unfinished business that someone would like to mention. I have none. Unless we have something else, I'm going to invite all of you to come to Kansas. I'm inviting everybody who can come, especially these beautiful women that you had to help. We'll have to show them around. But, if there is nothing else, we adjourn.

(Meeting adjourned at noon on July 29).

LEGISLATIVE COMMITTEE REPORT

ASSOCIATION MIDWEST FISH AND GAME COMMISSIONERS

TO MEMBERS OF THE ASSOCIATION:

Attached is a report of this committee for your consideration at the annual meeting in Toronto, July 27 - 29.

With the concurrence of the officers, in addition to a majority of the member states who we talked to personally, I represented your association in testimony before the United States House of Representatives Committee on Ways and Means regarding proposals relating to firearms controls. Subsequently, my testimony as Director of the Michigan Department of Conservation and as your representative was combined with the testimony of Harold W. Glassen, who represented the International Association of Fish, Game and Conservation Commissioners.

Copies of these two testimonies are attached following the committee report.

**Legislative Committee:** Ralph A. MacMullan, Chairman
Fred E. Morr
Harry R. Woodward
William E. Towell
Wayne H. Olson
Everett B. Speaker

7/23/65

# LEGISLATION COMMITTEE REPORT

Association of Midwest Fish and Game Commissioners

July 27-29, 1965.

Many important Conservation issues are being considered by the 89th Congress. Your Legislation Committee has attempted to summarize some of the more important bills, their present status and a proposed recommendation. If the Association concurs in or modifies the committee recommendation concerning the various bills, it is suggested that the Secretary advise the appropriate Congressional Committees of the action taken. The bills reviewed include the following:

1 Amendments to Federal Firearms Act (S. 1592, H.R. 6628, 6783)

A. Purpose: As originally conceived, S. 1592 would make it illegal to transport, ship, or receive firearms in interstate commerce, except by licensed dealers. This would prevent mail-order sales and shipments of guns to individuals. The bill would also prohibit Federally licensed importers, manufacturers, or dealers of shotguns and rifles to sell these items to persons under 18 years of age. Broad authority would be granted to the Secretary of the Treasury to prepare regulations to implement the provisions of the bill. The Treasury Department has indicated that amendments will be proposed which would exclude bona fide big game guns and all ammunition from the definition of "destructive devices." Federally imposed dealer license fees would also be modified to give special consideration to gun dealers who trade only in rifles and shotguns. A further amendment would provide for a public hearing procedure before the issuance of regulations.

B. Status: Hearings have been held intermittently before the Senate Committee to investigate juvenile delinquency since last May. Hearings are currently being conducted by the House Ways and Means Committee.

C. Recommendation: This committee is strongly opposed to S. 1592 as originally proposed because it would be a major source of hardship and inconvenience to sportsmen. It is believed that the proposed amendments will make the bill much more acceptable to conservation interests. A telephone poll of the Legislation Committee authorized Ralph MacMullan, Director of the Michigan Department of Conservation, to represent the Midwest in testifying before the House Ways and Means Committee on July 23, 1965 on gun legislation (see attachment).

2. Rare and Endangered Species Bill (S 2217, H.R 9424)

A Purpose: This bill would provide a program for the conservation, protection, restoration, and propagation of selected species of native fish and wildlife, including migratory birds, that are threatened with extinction. The bill says: "A species or subspecies of native fish and wildlife shall be regarded as threatened with extinction whenever the Secretary of Interior finds, after consultation with the states, that its existence is endangered beoause its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of over-exploitation, disease, predation, or because of other factors, that its survival needs assistance." Non-game species would also be covered under this program.

B. Status: S 2217 has been referred to the Senate Committee on Commerce. The Fisheries and Wildlife Conservation Sub-committee completed hearings on H.R 9424 on July 15.

C. Recommendation: The management of resident wildlife has been a traditional prerogative and responsibility of the various states While the purpose of this proposed legislation is approved and this activity is eligible for Land and Water Conservation Fund financing, every effort must be made to insure that coordination with and approval by the state game and fish agencies is required before any proposed program is implemented.

3. Food and Agriculture Act of 1965 (H.R. 7097, S. 1702)

A. Purpose: Under Title V of the new Food and Agriculture Act, the land retirement features of the soil bank program would be expanded and extended for ten years. It is anticipated that this extension would remove about forty million acres out of crop production. Individuals taking land out of crop production under contract with the U.S. Department of Agriculture would be paid on the basis of the amount of land retired. Planting for wildlife food and cover would be cost-shared and language in the House bill would authorize an additional payment to the landowner who permits free access to his property for hunting, trapping, fishing, and hiking. A proposed amendment to Title V of the bill would retire crop land permanently to non-crop uses by authorizing a transfer of funds to federal and state agencies and also to local government units for preserving open spaces and natural beauty, the development of wildlife and recreational facilities, and the prevention of air and water pollution

B. Status: Hearings on H R. 7097 were held before the Subcommittee on Conservation and Credit, House Committee on Agriculture, in mid-May. It was favorably reported on June 24, 1965 The companion bill S 1702, which is before the Senate Committee on Agriculture and Forestry, will probably be considered in July.

C. Recommendation: The committee strongly supports Title V of the bill, which would offer new and significant benefits to wildlife.

4. Federal Water Project Recreation Act (H.R 5269, S. 1229)

A. Purpose: The bill would establish standard guide lines on the allocation of, and the reimburseability of recreation, fish and wildlife costs on federal, multiple purpose water resource projects. The Secretary of Interior would also be given certain limited authority for recreation development on existing projects under his jurisdiction. It would also allow for the charging of fees to help offset the cost of fish and wildlife recreation enhancement. It is expected that the bill would encourage non-federal development and operation of recreation and fish and wildlife enhancement features of federal administration, the project costs allocated to recreation and fish and wildlife enhancement would be absorbed by the federal government. The separable project costs allocated to these functions could be cost shared up to 50 per cent by the federal government with the states or local government bodies paying the remainder of separable cost. As defined by the Senate Committee on Interior and Insular Affairs, joint costs would, for example, include the cost of a dam to the extent that it is common to all project purposes. Examples of separable cost would be the cost of picnic tables, boat

launching ramps, lands, roads, or such project modifications as increasing the height of the dam.

B. Status: S 1229 was passed by the Senate on April 13, 1965. The bill was amended by the House and passed on May 18, 1965 A House-Senate conference committee has resolved the differences between the House and Senate versions. One change would permit the head of the construction agency to dispose of separable project lands within the ten-year period if no agreement on cost sharing is reached. The bill was cleared for the President's signature on June 28

C. Recommendation: This Committee recognizes the many good features of the bill. However, we object to the philosophy that the enhancement of recreational and fish and wildlife benefits are less in the public interest than flood control and navigational benefits, and therefore, considered separable costs to be cost shared with state and local units of government.

5. Water Quality Act of 1965 ( S. 4, H.R. 3988)

A. Purpose: Bills would amend the federal Water Pollution Control Act to establish the federal water pollution control administration to provide grants for research and development to increase grants for the construction of municipal sewage treatment works and to authorize the establishment of standards of water quality to aid in controlling and abating pollution of interstate waters. The Senate passed version (S. 4) would authorize the Secretary to prepare regulations setting forth standards of water quality and sets up a procedure whereby all interested parties would be given an opportunity to be heard. The Secretary of Health, Education and Welfare would promulgate the standards only if state and interstate groups have not developed satisfactory standards. The House passed version, H.R. 3988, requires that no state is to receive any funds-in-grants unless it files within 90 days after enactment a letter of intent that the state will establish water quality criteria to be applicable to interstate waters by June 30, 1967.

B. Status: A House-Senate conference committee will resolve the differences between the two versions of the bill. Another matter for the conference committee to resolve pertains to the establishment of a new federal Water Pollution Control Administration as provided in the House passed bill. S. 4 would transfer only law enforcement comprehensive programs, interstate water cooperate water standards and control of pollution from federal installations to a new administration Many of the national conservation organizations prefer the Senate passed version with respect to standards of quality waters. Many of the state water pollution control organizations have indicated preference for the House passed version. A widely discussed compromise is alleged to give the states two years in which to establish and enforce criteria high enough to be acceptable to the Secretary of Health, Education and Welfare.

C. Recommendation: This committee believes the proposed compromise on standards of water quality would be a satisfactory solution.

6. Conservation of Predatory Animals (H.R. 4159, H.R. 7433, H.R. 7744, S. 1952)

A. Purpose: These similar bills would establish congressional policy to recognize that the wolf, the coyote, the mountain lion, the lynx, the bobcat, the several species of bear, and other large wild carnivorous native to North America and commonly known as predatory mammals are among the wildlife resources of interest and value to the people of the United States. A position of Extension Mammal Control Agent would be established in each regional office of the Bureau of Sport Fisheries and Wildlife for the purpose of advising on the prevention of depredations by wild predatory animals upon livestock.

B Status: S 1952 is being considered by the Senate Committee on Commerce. The other bills have been assigned to the House Committee on Merchant Marine and Fisheries

C. Recommendation: Your committee approves the purpose of these bills.

7 Anadromous Fishery Program (S. 909, H R 3927)

A. Purpose: These two bills are among several bills which would authorize the Secretary of Interior to cooperate with the states in a program for the conservation, development, and enhancement of the nation's Anadromous Fishery resources. H.R. 3927 would include the Great Lakes fishes which spawn in rivers and streams. None of the other bills under consideration specifically include Great Lakes fish within the scope of development activity.

B. Status: The subcommittee on Merchant Marine and Fisheries, Senate Committee on Commerce, held hearings on S. 909 in May. The various anadromous fish bills introduced in the House were considered by the House Committee on Merchant Marine and Fisheries in early June.

C. Recommendation: H.R 3927, with its broader coverage, is preferred.

8. Construction of the Garrison Diversion Unit (H.R. 237, S. 34).

A. Purpose: These bills provide for diversion of Missouri River waters in North and South Dakota for irrigation, industrial municipal recreation purposes and for fish and wildlife enhancement. The bill authorizes 207 million dollars for construction. The initial stage of the multiple purpose diversion unit would be to irrigate 250 thousand acres, provide municipal and industrial water supplies for fourteen towns and cities and offer full development of fish and wildlife and recreational potentials. Portions of fish and wildlife and recreational enhancement costs are reimbursible.

B. Status: H R. 237 was passed by the House on June 16, 1965, S. 34 will probably pass as a similar bill was passed by the Senate in the 88th Congress

9. The Navigable Water Pollution Control Act of 1965 (S. 1908)

A Purpose: The bill would require all vessels on the Great Lakes and other navigable water to be equipped with approved sewage and refuse disposal facilities by January 1, 1970 The bill would further ban the discharge of oil into the Great Lakes and would give the Coast Guard full authority to enforce laws against ship pollutions and would simplify the prosecution of violators

B Status: The bill is being considered by the Senate Committee on Public Works.

C. Recommendation: The Legislation Committee urges the adoption of this important bill

10 Natural Beauty Programs (H.R. 8487, H.R 8489, H.R. 8491, H.R. 8493)

A. Purpose: These four bills all pertain to highway beautification. H.R. 8489 would control outdoor advertising along the interstate and primary highway systems. This bill would require that all states make provision for effective control of the erection and maintenance of outdoor advertising, signs, displays, and devices on interstate and primary systems by January 1, 1968, in order to be eligible for federal funds. H.R. 8491 would require the effective control of junk yards along federal highways. H.R. 8493 would require that 3 per cent of federal aid highway funds be used for the preservation and enhancement of natural beauty. H.R. 8487 would require that a portion of the federal funds now used for secondary roads be used for the construction of scenic and recreational roads, and roads leading to scenic and recreational areas.

B. Status: These bills are being considered by the subcommittees on Public Roads, House Committee on Public Works.

C. Recommendation: Your committee approves the purpose of these bills

11 Establishment of a Wild River System (H R 8630, S. 1446)

A. Purpose: The proposed wild rivers legislation is generally considered to be a necessary corollary to the Wilderness Act It would dedicate a limited area along certain river banks which would be administered for the purpose of water conservation, scenic, fish, wildlife and outdoor recreational values. S. 1446 would designate as wild rivers segments of the following streams: The Salmon in Idaho, the Middle Fork of the Clear Water River in Idaho, the Rogue in Oregon, the Rio Grande in New Mexico, the Green in Wyoming, and the Suwanee in Georgia and Florida. As proposed, the bill is not intended to affect state water laws, grazing, timber harvest, and mining which would continue when consistent with the purposes of the bill.

B. Status: The Senate Committee on Interior and Insular Affairs began hearings in April. H.R. 8630 is being considered by the House Committee on Interior and Insular Affairs. It differs from the Senate bill in that a portion of the Wolf River in Wisconsin would also be included for dedication as a wild river.

C. Recommendation: Your Committee heartily endorses this bill.

12. The effects of Pesticides on Fish and Wildlife (S 1623, H.R. 4157, H R. 4158)

A. Purpose: H.R 4157 would prevent or minimize injury to fish and wildlife from the use of insecticides, herbicides, fungicides and pesticides. H.R. 4158 would provide for consultation with the Fish and Wildli e Service and with state wildlife agencies before the beginning of any federal programs involving the use of pesticides or other chemicals designed for mass biological control S. 1623 is similar to H.R. 4157 The Interior Department would be authorized 3.2 million dollars for fiscal 1966 and 5 million dollars annually in 1967 and 1968 for research

B. Status: S. 1623 was passed by the Senate in late April and is now being considered by the House Committee on Merchant Marine and Fisheries, which reported favorably upon a similar proposal in the 88th Congress.

C. Recommendation: Further pesticide control and research is needed.

13. Preservation of Shore Line Areas for Public Use and Benefit (S. 98)

A. Purpose: This bill would promote the preservation for public use and benefit of certain portions of shoreline areas of the United States. Some of the areas included are Cumberland Island, Georgia; Huron Mountains, Michigan; Channel Island, California; Cape Flattery, Washington; Leadbetter Point, Washington; Mosquito Lagoon, Florida; Pigeon Point, Minnesota; Popham-St. John, Maine; Parramoure Island, Virginia; Great Salt Lake, Utah; Lake Tahoe, Nevada-California; Smith Island, North Carolina and shores of Hawaii. The bill would also authorize the Secretary of Interior to pay up to one-half of the purchase price states might have to pay to acquire areas with a ceiling of 25 million dollars placed on the authorization.

B. Status: The bill is being considered by the Senate Committee on Interior and Insular Affairs.

C Recommendation: Every effort should be made to preserve shoreline areas for public use.

14. Procedure for the Disposal of National Wildlife Refuges (H.R 8432, H.R. 8807, S 1816)

A. Purpose: These bills would amend the Migratory Bird Conservation Act with respect to the disposal of land and interest in land acquired under the act. The bills would provide that any land or interest in land approved for acquisition or use by the Migratory Bird Conservation Commission shall not be sold, terminated, transferred for any other use or otherwise disposed of with out the approval of the Commission. H.R. 8807 would provide that no land contained in the National Wildlife Refuge system shall be sold, transferred for any other use, or otherwise disposed of without the approval of the Migratory Bird Commission and payment of the fair market value of the land.

B. Status: H.R. 8432 and H.R. 8807 is being considered by the House Committee on Merchant Marine and Fisheries and S. 1816 has been referred to the Senate Committee on Commerce.

C. Recommendation: All lands proposed for disposal should be cleared with the Migratory Bird Conservation Commission. However payment of the fair market value may, in some cases, be unwarranted.

15. Establishment of Sleeping Bear Dunes National Lakeshore, Michigan (S. 936)

A. Purpose: This bill would establish a Lakeshore Recreation Area of approximately 51,000 acres. A similar bill was passed by the Senate in 1963. Hunting and fishing would be permitted in accordance with the laws of the State of Michigan.

B. Status: The Subcommittee on Parks and Recreation, Senate Interior Committee completed hearings on this bill on July 14, 1965.

C. Recommendation: We strongly urge the dedication of this unique and beautiful area as a National Lakeshore.

16. Establishment of Indiana Dunes National Lakeshore (S. 360)

A. Purpose: This Lakeshore Recreation Area would consist of approximately 11,292 acres and eleven miles of shoreline on the southern end of Lake Michigan. The 2,182 acre Indiana Dunes State Park would be acquired only with the consent of the State of Indiana. Acquisition costs are expected to be approximately $23,000,000.

B. Status: The bill was passed by the Senate on June 21, 1965 and now will be considered by the House Committee on Interior and Insular Affairs.

C Recommendation: The Indiana Dunes area, within 50 miles of 6.5 million people, should be incorporated in the system of National Recreation Areas.

Legislative Committee: Ralph A. MacMullan, Chairman
Fred E Morr
Harry R. Woodward
William E. Towell
Wayne H. Olson
Everett B. Speaker

Statement by Ralph A. MacMullan
Director, Michigan Department of Conservation
before the Committee on Ways & Means
U. S. House of Representatives
on Proposals Relating to Firearms Controls

Gentlemen: I appreciate this opportunity to speak for the Michigan Department of Conservation and the Association of Midwest Fish, Game, and Conservation Commissioners about firearms control. Because of Michigan's position in the fields of conservation and other outdoor recreation, I think our views and concerns are representative of most state conservation departments. I am pleased to be able to address you in this capacity.

Because of the diversity of firearms legislation introduced into the present Congress, I prefer to speak primarily on the effects such legislation in general can have on the management of natural resources. I feel that it is also appropriate to point out that state conservation departments have an obligation to their hunters to protect them from unreasonable regulations which may prevent hunters from freely enjoying their sport, but which may completely fail to accomplish the primary purpose of the regulations; i.e., lower the crime rate or protect game supplies.

Michigan hunters have done much to deserve the best we are able to do for them. The same is true for those in other states. Hunters have contributed more towards outdoor recreation programs than any other group. Their tax and license dollars have provided many programs of lasting benefit, not only to game, but to the general public as well. I would like to emphasize that this money has been available from no other source and no substitute revenue appears forthcoming in the foreseeable future.

Any legislation which inadvertently reduces the sales of sporting arms and ammunition may not only depress license sales, but may also significantly reduce

collections of excise taxes which are the source of revenue for the highly important Pittman-Robertson program for wildlife restoration. Since 1955 the taxes on sporting guns and ammunition have yielded an annual average of 14.8 million dollars which is reallocated to the states.

The accomplishments of the Pittman-Robertson program are noteworthy. During its first 25 years, 680,000 acres of hunting lands was acquired in the Midwest. Most of this is in areas where public hunting grounds are at a premium. This land has been developed primarily for the hunter, but fishermen fish the impoundments, nature enthusiasts enjoy the wildlife, photographers film the birds, and campers and picnickers enjoy the freedom of the areas. These uses in southern Michigan alone amount to over 500,000 man-days of recreation, and they are increasing annually.

The hunter occupies a prominent place in Michigan society. Combined sales of small and big game licenses have totaled over a million since 1950. One out of every five adult males in the state is a deer hunter. One out of every 12 persons hunts deer at least once every five years. Throughout the nation, one out of every 13 big game hunters is a Michigan deer hunter. The hunter's total contributions to Michigan's resource management and recreation programs amount to over 5 million dollars a year. Surveys show us that the Michigan deer hunter pumps about 30 million dollars into the economy each year. The small game hunter, another 40 million. Nationwide, hunters expend about 1.5 billion on all the things they do in connection with their sport.

However, in spite of the popularity of hunting and the considerable sums of money involved, the "loyalty" of many hunters is a fragile thing. It is the fickleness of the "first-day hunter" and the competition from other types of recreation that concern us. There is evidence at hand to warn us that the inconvenience caused by unwarranted firearms regulation could result in a significant decline in hunter numbers. The danger signs are plain to us in Michigan.

A survey of pheasant, rabbit, and ruffed grouse hunters indicates that approximately 15 percent in each category hunt only one day a year. Another 15 percent hunt only two days. These hunters are casuals. Any added inconvenience will probably find them at home and watching the football game on TV or taking their wives to Aunt Martha's.

Michigan small game license sales reached a peak of 750,000 in 1956. Last year, 118,000 fewer persons paid for this privilege. The overall abundance of small game has not declined to the extent that hunting is significantly poorer. Our conclusion is that other forms of recreation are wooing the casual hunter from the field.

The evidence that the outdoor recreationist is subject to the lures of other amusements is well illustrated by the trend in Michigan fishing. Resident fishing license sales have dropped steadily from 878,000 in 1954 to 704,000 in 1964. Competition from water-skiing, boating, golf, and family camping are among the factors contributing to the decrease in the number of fishermen.

In recent years, the deer hunter has been the backbone of Conservation financing in Michigan. Last year licenses sales reached a new high of 560,000; and the deer population is responding favorably to management. The deer hunter apparently is most ardent and loyal. We are certain he is the most vociferous. But even though relatively faithful, deer hunters have an annual turnover of at least 30 percent. Deer hunting can be a discouraging business and any additional restrictions will undoubtedly reduce the number of participants.

The concern I express in respect to depressed license sales is shared by leaders in the conservation field. Last September the International Association of Game, Fish and Conservation Commissioners passed the following resolution in opposition to anti-firearms legislation:

RESOLUTION NO. 17

OPPOSITION TO ANTI-FIREARMS LEGISLATION

Whereas, proposals have been introduced in state legislatures and in the Congress which, if enacted, would impose greater restrictions on the purchase, possession and use of firearms ordinarily used in the pursuit of outdoor recreation by hunting or shooting; and

Whereas, such restrictive legislation, if adopted, would seriously hamper the pursuit of outdoor recreation by hunting; and

Whereas, such restrictive legislation would be inconsistent with the present and future programs of the states and of the United States in increasing and improving opportunities in the pursuit of outdoor recreation by hunting; and

Whereas, the cause of conservation would be seriously jeopardized if such restrictive legislative proposals were enacted into law, either by states or by the Congress; and

Whereas, statistics and studies have proven that such proposed restrictions with respect to firearms ordinarily used in hunting would in no way affect or reduce the crimes committed by the use of such firearms but, to the contrary, would unnecessarily disarm peaceful and law-abiding citizens to their disadvantage; and

Whereas, the right to keep and bear arms has been considered a natural and basic right of citizens throughout the long development of the common law, and is guaranteed in such documents as the English Bill of Rights of 1688, the American Bill of Rights, namely the Second Amendment to the Federal Constitution, and the constitutions of about 35 states, the preservation of which is important to citizens as the primary rights of personal security, personal liberty, and of private property; and

Whereas, the right to keep and bear arms is a personal one accorded to the individual and is not simply a collective right reserved to the militia as an organization;

Now, therefore, be it resolved by the International Association of Game, Fish and Conservation Commissioners that legislative proposals at all levels which require a license or permit to purchase or possess a firearm ordinarily used in outdoor recreation by hunting or shooting, or which leave the right to possess such a firearm dependent upon the whim or will of a public officer, or which require the registration of such a firearm, or which impose a confiscatory tax or unreasonable regulation on such firearms, or which totally prohibit the possession of such firearms - all such proposals should be vigorously opposed and rejected; and

Be it further resolved that copies of this resolution should be sent to all state legislatures, to the Senate Committee on Commerce, to the House Ways and Means Committee, and to the House Committee on Inter-state and Foreign Commerce.

A similar resolution passed by both houses of Michigan's Legislature this session emphasizes the need for adequate penalties for the misuse of firearms, asks that authority not be given at any government level to prohibit the purchase and ownership of firearms by law-abiding and responsible citizens, and points out that one-and-a-half million sportsmen could be adversely affected by improper legislation.

The State Bar of Michigan last year passed a resolution in opposition to S. 1975 after it had been amended to include shotguns and rifles. The Bar believes that such "legislation will not be a deterrent to crime but will constitute a useless annoyance to our citizens and an unnecessary restriction of their basic legal rights."

The Michigan United Conservation Clubs are unqualifiedly opposed to some proposals under consideration; S. 1592 is particularly objectionable. During informal discussions with members of Michigan law enforcement agencies, it has been universally agreed that the problem firearm is the concealable weapon, not the sporting firearm. The Ingham County Sheriff, a respected, experienced and trained law enforcement official, appeared on a panel in protest to a version of S. 1592, and stated that his firearms problems were <u>not</u> with the sporting firearms.

Michigan's gun laws are generally considered adequate to deal with the crime problems. In fact, last year the Legislature eased the restrictions on transportation of concealed weapons in automobiles. If present laws were inadequate, it would seem that a tightening would be in order rather than a relaxation.

It has been stated, reliably, in testimony on S. 1592 that there are already 20,000 laws on the books of the nation dealing with firearms. In view of this fact, it would appear that vigorous enforcement, realistic action by the courts, and recognition by the public that criminals are criminals and not misguided mischief

makers would be highly appropriate. Any new legislation should be carefully drawn so as not to disarm the honest gunner while the criminal has just another statute to ignore.

There has been a variety of legislation introduced as you well know. There is some of this that we heartily support. We support federal action which will stop the importation and distribution of ordnance-type weapons. We admit we are somewhat surprised that things like bazookas, grenades, mortars, and so forth are enjoying their present traffic. The Federal Government certainly should intervene here with a heavy hand.

We can also support or at least agree to measures which will control the movement of handguns in interstate commerce. All the law enforcement people we have consulted agree that handguns are the criminal weapon. In Michigan, a person is required to have police permission to purchase a handgun. No dealer may lawfully sell a handgun to a person who has not received this permission. However, pistols can and are sold by mail order in circumvention of this law. I believe that legislation as proposed by Senator Hickenlooper and Congressman King would serve the purpose adequately in this respect and would still not unduly hamper or inconvenience the legitimate sportsman.

The most objectionable proposals from our standpoint as a conservation agency are contained in S. 1592. I understand that some of the features that we object to most may have been amended, but I have not yet seen the amended version. We object to the high license fees for dealerships in firearms and rifle ammunition. I feel these fees are particularly discriminating and will work the utmost hardship both on the owners of small businesses in northern Michigan and on the deer hunters. The human population in Michigan is distributed in diametric opposition to the deer population. Eighty-five percent of the people live in the southern third of the state, and 90 percent of the deer live in the northern two-thirds.

The northward trek in November is almost in the nature of a pilgrimage. Many hunters buy supplies, including licenses and ammunition, after arriving up north. The $100 license fee will remove deer-hunting and .22 ammunition from the shelves of the corner stores throughout northern Michigan.

We can agree that the present licensing provisions are inadequate, but we would prefer to see restrictions enacted on the basis of the licensee's qualifications rather than on his economic status. Here again the Hickenlooper-King proposal of a ten-dollar dealers fee and exclusion of ammunition from the law seems realistic and acceptable.

We disagree strongly with the proposal to completely ban mail order sales of shotguns and rifles to anyone except federally licensed dealers. This is a most unrealistic approach to preventing crime. The small proportion of crimes committed with shotguns and rifles are usually categorized as crimes of passion or spur-of-the-moment type of action.

If we were to ban all guns, not just the mail order source, we wouldn't stop this type of violence. To stop mail order sales of sporting firearms will inconvenience thousands of legitimate sportsmen without a ghost of a chance of accomplishing the intended purpose.

We know that there are crimes committed by persons who should not have possessed firearms and that this is an ever-increasing problem. However, it must be realized that the basic problem in nearly all instances was not the use of a gun, or a knife, or a club, but that such a crime of violence occurred. Removal of firearms would not remove the underlying causes of such crimes, nor would further gun restrictions reduce the overall crime rate. In practice, restrictions on ownership are ignored by criminals while the honest man is disarmed.

Our chief concern and main reason for being here is to help formulate sound legislation which will not interfere with the activities of the legitimate hunter

and shooter; which will, in turn, not have a deleterious effect on our ability to manage our wildlife, forests, and our outdoor recreational facilities; and which will still be effective in stopping the misuse of firearms.

I suppose there is enough "early American" in me and the sportsmen I represent to make me resent unnecessary and capricious regimentation. We all know that more and more people means more and more restrictions. But perhaps the unencumbered right to purchase and own a gun represents a symbol of my heritage of personal freedom. I would give up that right if I were convinced that it would prevent the tragedies attributed to lack of firearms regulations; but I am not convinced.

Combined Statement of
Ralph A. MacMullan, Director, Michigan Department of Conservation
Harold W. Glassen, International Association of Fish, Game & Conservation Commission
before the Committee on Ways & Means
U.S. House of Representatives
on Proposals relating to Firearms Control

Gentlemen:

I am the appointed spokesman for the International Association of Fish, Game, and Conservation Commissioners and the Michigan United Conservation Clubs. Dr. MacMullan, represented here today by David Arnold, has been designated the representative of the Michigan Department of Conservation and the Association of Midwest Fish, Game, and Conservation Commissioners. As requested by your Council, Mr. Irwin, we have consolidated our testimony.

I am an attorney by profession. I am a former chairman of the Michigan Conservation Commission and have been an active member, director, or an officer of a large number of local, state, and national conservation and sportsmen's organizations. Dr. MacMullan is Director of the Michigan Department of Conservation; Mr. Arnold is a member of his staff.

Since the organizations we jointly represent are concerned with the conservation and management of natural resources, I will speak primarily on the effects that firearms control could have on these matters. I believe that this is an aspect which has not been properly stressed or considered in other testimony. I feel that it is also appropriate to point out that state conservation departments have an obligation to their hunters to protect them against unreasonable regulations which may prevent hunters from freely enjoying their sport, but which may completely fail to accomplish the primary purpose of the regulations; i.e., lower the crime rate or protect game resources.

Hunters have contributed more towards outdoor recreation programs at the state level than any other group. Their tax and license dollars have provided many projects of lasting benefit, not only to game, but to the general public as

well. I would like to emphasize that this money has been available from no other source, and no substitute revenue appears forthcoming in the foreseeable future.

The last Congress was properly known as the "Conservation Congress." No previous Congress had given as much consideration to, or accomplished so much in, the field of conservation and recreation. Since hunting and shooting are an integral part of the overall recreation program, the organizations for which I speak today offer their help and assistance to the present Congress toward preventing it from taking any action which would nullify any part of the fine advancements which have been made.

Any legislation which inadvertently reduces the sales of sporting arms and ammunition may not only depress license sales, but may also significantly reduce collections of excise taxes which are the source of revenue for the highly important Pittman-Robertson program for wildlife restoration. Since 1955, the taxes on sporting arms and ammunition have yielded an annual average of 14.8 million dollars, which is reallocated to the states. Since the beginning of this act in 1937, there has been collected and disbursed for conservation practices $268,401,966 which represent sales of more than $2½ billion in sporting arms and ammunition.

The accomplishments of the Pittman-Robertson program are noteworthy. During its first 25 years, 680,000 acres of hunting lands were acquired in the Midwest. Most of this is in areas where public hunting grounds are at a premium. This land has been developed primarily for the hunter and at his expense, but fishermen fish the impoundments, nature enthusiasts enjoy the wildlife, photographers film the birds, campers and picnickers enjoy the freedom of the areas. Non-hunting uses of these areas in southern Michigan alone amounted to over 1,600,000 man-hours in 1962. This was 1.6 times as great as the time spent by hunters; and the non-hunting use increases annually.

It follows that state conservation departments are universally short of funds because public demand precedes planning for recreation and conservation, and planning always seems beyond available monetary means of accomplishment. This is as it should be, because it would be a sad day if income caught up with and exceeded planning.

Even though hunters provide much recreational opportunity to the general public, benefits to the hunter are provided wholly from his license fees and arms taxes. The thinking sportsmen would have it no other way, for he knows he could not hope to secure an equal amount from general tax funds. And he realizes, too, that management of the game which is his primary interest is a complex matter, dependent upon many interrelations: economic, biological, and social. In practically every conservation department hunting license fees furnish an important part of all funds, not just for hunting, but for fishing, conservation education, law enforcement, and frequently the administrative expense for all activities of the department.

In many states hunting is a potent force in shaping the sociology. Michigan is an excellent example. Combined sales of small game and big game licenses have totaled over a million annually since 1950. One out of every five adult males in the state is a deer hunter. One out of every twelve persons hunts deer at least once every five years. The hunter's total contributions to Michigan's resource management and recreation programs amount to over 5 million dollars a year. Surveys show us that the Michigan deer hunter pumps about 30 million dollars into the economy each year. The small game hunter generates another $40 million. Nationwide, hunters expend about $1.5 billion on all the things they do in connection with their sport.

However, in spite of the popularity of hunting and the considerable sums of money involved, the "loyalty" of many hunters is a fragile thing. It is the fickleness of the "first-day hunter" and the competition from other types of recreation that concern us. There is evidence at hand to warn us that the

inconvenience caused by unwarranted firearms regulation could result in a significant decline in hunter numbers.

The more than 20 million persons who buy hunting licenses each year are not all dedicated or even enthusiastic sportsmen. In Michigan we find that of our hunters who seek pheasants, far and away the most popular game bird, 43 percent hunt not more than twice during the annual season. We also find that 7 percent of the deer hunters hunt not more than one day, and another 15 percent not more than two days. The days hunted are not necessarily the opening days, and the hunting is not limited because of success or its lack in killing game. We have an annual turnover of 30 percent in deer hunters. These people just mentioned are the undedicated minority who, if subjected to any added inconvenience, will stay at home and watch TV or take their wives to Aunt Martha's.

A conservative estimate in the Midwest is that one-third of the hunters are casuals, and that any fetters placed on them will discourage a substantial number from buying a license. Legislation pertaining to acquisition of a gun is a most sensitive area because most hunters, even the most indifferent, usually buy rather than borrow their guns and other equipment.

The organizations for which I speak today oppose legislation which is likely to cause any potential hunter not to indulge in his sport and hence not to buy a license. We hold no brief for the cheap weapon, and we do not support the sale of cheap handguns at any level, but we cannot say that all guns sold by mail-order are unsuitable for hunting because we know otherwise. Game hunting in this country, as distinguished from Europe and other foreign countries, has not been confined to the rich but appeals to members of all economic levels, perhaps more to the lower income group because hunting has been more readily available to them. We know that many firearms, especially those used in deer hunting, are of the "mail-order" variety.

The concern I express in respect to depressed license sales is shared by leaders in the conservation field. Last September the International Association of Game, Fish and Conservation Commissioners passed the appended resolution in opposition to anti-firearms legislations.

A similar resolution passed by both houses of Michigan's Legislature this session emphasized the need for adequate penalties for the misuse of firearms, asks that authority not be given at any government level to prohibit the purchase and ownership of firearms by law-abiding and responsible citizens, and points out that 1½ million sportsmen in Michigan alone could be adversely affected by improper legislation.

The Integrated State Bar of Michigan last year passed a resolution in opposition to S. 1975 after it had been amended to include shotguns and rifles. The Bar believes that such "legislation will not be a deterrent to crime but will constitute a useless annoyance to our citizens and an unnecessary restriction of their basic legal rights."

The Michigan United Conservation Clubs with 360 affiliates and over 60,000 members is unqualifiedly opposed to some proposals under consideration; S. 1592 is particularly objectionable. During informal discussions with members of Michigan law enforcement agencies, it has been universally agreed that the problem firearm is the concealable weapon, not the sporting firearm. The Ingham County Sheriff, a respected, experienced and trained law enforcement official, appeared on a panel in protest to a version of S. 1592, and stated that his firearms problems were <u>not</u> with sporting firearms.

The American Legion of Michigan on July 18 unanimously passed a resolution opposing S. 1592 even <u>with</u> the recent amendments proposed by the Treasury Department. This group does, however, support the King-Hickenlooper bill, which incidentally is acceptable to me and those I speak for.

In addition to the organizations named above, there are the Federation of Humane Societies and scores of local conservation clubs throughout Michigan, which

have passed resolutions against S. 1592 on the basis of its content and probably most important, on its philosophy.

It will be noted that the International Association offered no opposition to firearms legislation comparable to S. 1975 before it was amended following the great catastrophe of November 22, 1963. All organizations for which I speak do not oppose legislation of the King-Hickenlooper type and could and would support such reasonable legislation at this time. I am not unmindful that homicides are sometimes committed with the shotgun and the rifle, but it is exceedingly rare that sporting firearms are used in such felonies as armed robbery, burglary, and similar crimes committed by experienced felons. There will always be homicides of passion, and these will result whether or not a firearm is available. Such crimes of passion are very frequently committed with a knife, often with kitchen variety. Just as it is not practical or reasonable to restrict the ownership of all knives because some are used in homicides, so it is not practical or reasonable to restrict the acquisition of the sporting rifle or shotgun merely because a miniscule number are involved in homicides of passion.

If we were to ban all guns, not just the mail order source, we wouldn't stop this type of violence. To stop mail-order sales of sporting firearms will inconvenience thousands of legitimate sportsmen without a ghost of a chance of accomplishing the intended purpose.

Professional conservationists and sportsmen in general as husbands, fathers, good citizens, and taxpayers are interested in curbing crime and juvenile delinquency. No opposition need be anticipated from these groups to legislation properly designed to accomplish this purpose. Conservationists and sportsmen generally, however, will disagree with legislation which they feel unnecessarily restricts them.

As an officer of the Michigan United Conservation Clubs, I have frequently

spoken in favor of S. 14 prior to the introduction of S. 1592. When speaking in favor of S. 14, I have frequently seen sportsmen's opposition and suffered rebuff because sportsmen generally can see no reason for restrictions on the rifle and shotgun.

Our chief concern and main reason for being here is to help formulate sound legislation which will not interfere with the activities of the legitimate hunter and shooter; which will, in turn, not have a deleterious effect on our ability to manage our wildlife, forests, and our outdoor recreational facilities; and which will still be effective in stopping the misuse of firearms.

While hastily conceived legislation will inconvenience and discourage the hunter first and directly, I would like to emphasize in summary that the hunter has been a key provider in the outdoor recreation field. Discourage the hunter and nearly all users of the outdoors will suffer eventually. Hunting licenses and arms taxes provide recreation for fisherman, boaters, hikers, campers, berry pickers, dog trainers, wildflower fanciers and countless others. Legislation which dries up the funds provided by hunters can have far reaching social and economic repercussions.

I suppose there is enough "early American" in me and the organizations and sportsmen I represent to make me resent unnecessary and capricious regimentation. We all know that more and more people means more and more restrictions. But perhaps the unencumbered right to purchase and own a gun represents a symbol of my heritage of personal freedom. I would give up that right if I were convinced that it would prevent the tragedies attributed to lack of firearms regulations; but I am not convinced.

RESOLUTION NO. 17

OPPOSITION TO ANTI-FIREARMS LEGISLATION

Whereas, proposals have been introduced in state legislatures and in the Congress which, if enacted, would impose greater restrictions on the purchase, possession and use of firearms ordinarily used in the pursuit of outdoor recreation by hunting or shooting; and

Whereas, such restrictive legislation, if adopted, would seriously hamper the pursuit of outdoor recreation by hunting; and

Whereas, such restrictive legislation would be inconsistent with the present and future programs of the states and of the United States in increasing and improving opportunities in the pursuit of outdoor recreation by hunting; and

Whereas, the cause of conservation would be seriously jeopardized if such restrictive legislative proposals were enacted into law, either by states or by the Congress; and

Whereas, statistics and studies have proven that such proposed restrictions with respect to firearms ordinarily used in hunting would in no way affect or reduce the crimes committed by the use of such firearms but, to the contrary, would unnecessarily disarm peaceful and law-abiding citizens to their disadvantage; and

Whereas, the right to keep and bear arms has been considered a natural and basic right of citizens throughout the long development of the common law, and is guaranteed in such documents as the English Bill of Rights of 1688, the American Bill of Rights, namely the Second Amendment to the Federal Constitution, and the constitutions of about 35 states, the preservation of which is important to citizens as the primary rights of personal security, personal liberty, and of private property; and

Whereas, the right to keep and bear arms is a personal one accorded to the individual and is not simply a collective right reserved to the militia as an organization;

Now, therefore, be it resolved by the International Association of Game, Fish and Conservation Commissioners that legislative proposals at all levels which require a license or permit to purchase or possess a firearm ordinarily used in outdoor recreation by hunting or shooting, or which leave the right to possess such a firearm dependent upon the whim or will of a public officer, or which require the registration of such a firearm, or which impose a confiscatory tax or unreasonable regulation on such firearms, or which totally prohibit the possession of such firearms - all such proposals should be vigorously opposed and rejected; and

Be it further resolved that copies of this resolution should be sent to all state legislatures, to the Senate Committee on Commerce, to the House Ways and Means Committee, and to the House Committee on Inter-state and Foreign Commerce.

RESOLUTION

Whereas, the State Bar of Michigan is an integrated Bar and speaks officially through its duly elected Commissioners; and

Whereas, the citizens of this State look to the Bar for guidance on the import of legislation at any level; and

Whereas, proposed amendments to the Dodd Bill (S. 1975) now before Congress contemplate certain additional restrictions on the sale of firearms for hunting; and

Whereas, Michigan is one of the leaders in the sale of hunting licenses, and the restrictions proposed would hamper persons engaged in this outdoor recreational sport and thus adversely affect the best interests of the State; and

Whereas, the State Bar feels that the proposed amendments to the Dodd Bill are not in the best interests of our citizens and are an invasion of their Constitutional rights in that:

1. The State Bar believes that such legislation will not be a deterrent to crime but will constitute a useless annoyance to our citizens and an unnecessary restriction on the exercise of their basic legal rights.

2. The proposed legislation is in violation of the Second Amendment to the United States Constitution and the right to bear arms is a basic right. We believe that the right granted under the Second Amendment is one granted to the individual and not to the militia as an organization.

   United States of America vs. Jack Miller, 83rd Law Ed 1206.

   It is the view of the State Bar of Michigan that any law restricting rights granted under the Second Amendment is not a function of Congress but that any necessary regulation should be made by State statute under the police power which rests in the States and not in the Federal Government; and

Whereas, the Dodd Bill prior to November 22nd was directed only to concealable firearms and directed to the misuse thereof; and

Whereas, said Bill as amended is directed to sporting firearms, all rifles and shotguns;

Now Therefore, BE IT RESOLVED that the State Bar of Michigan oppose any amendments proposed to be made to S. 1975 since November 22, 1963.

It is further RESOLVED that Congressional representatives of this State be notified of this action.

The motion prevailed, three-fifths of the members present voting therefor.

The question being on the adoption of the concurrent resolution,

The concurrent resolution was adopted.

Reps. Edwards, Stempien, Hampton, Baker, Clark and Cooper offered the following resolution:

House Resolution No. 147.

A resolution creating a special committee to study the business of title insurance.

Whereas, A bill has been introduced in the House of Representatives to license and regulate the business of issuing title insurance policies; and

Whereas, Such policies are being used more and more as a protection against title deficiencies by homeowners; and

Whereas, Ownership of their own home is the major expenditure of most residents of this state and an inherent right in our democratic way of life; and

Whereas, The intricacies of title and the insurance thereof are matters requiring thorough knowledge, consideration and study; now therefore be it

Resolved by the House of Representatives, That there is hereby created a special committee of the House to consist of 5 members to be appointed by the Speaker to function now and during the interim between the 1965 and 1966 Regular Sessions of the Legislature, to study the need for proposed legislation licensing and regulating the business of title insurance and to report its findings and recommendations to the 1966 Legislature; and be it further

Resolved, That the committee is authorized to administer oaths, subpoena witnesses and to examine books and records of any person, partnership, association or corporation, public or private, and of any agency of the State or its political subdivisions involved in a matter properly before the committee, and may call upon the services and personnel of any agency of the State or its political subdivisions; and be it further

Resolved, That the members of the committee shall serve without compensation, but shall be entitled to actual and necessary travel and other expenses incurred in the performance of official duties, to be paid from the appropriation to the House of Representatives, not to exceed $2,500.00.

The resolution was referred to the Committee on House Policy.

Reps. Goemaere, Snyder, Constantini, Cater, Fitzgerald, Walton, Ensign, Slingerlend, Morrison, Ford, Spencer, Dingwell, Woodman and Anderson offered the following concurrent resolution:

House Concurrent Resolution No. 115.

A concurrent resolution memorializing the Congress of the United States regarding the Anti-firearms Bill.

Whereas, The anti-firearms bill currently before the Congress of the United States propose Federal control of firearms in the hands of civilians, and as currently written, constitute violation of the Second Amendment to the United States Constitution that "... the right of the people to keep and bear arms shall not be infringed."; and

Whereas, Admittedly, controls are necessary due to irresponsible or criminal elements in society illegally using firearms. That such controls should be the perogative of state and local agencies of government, that such controls properly should not be a matter for Federal control are acknowledged and forthrightly stated by the Nation's foremost experts in government, including opinions publicly stated by men of the caliber of Mr. J. Edgar Hoover; and

Whereas, The concensus of expertise in this field is that state and local laws imposing harsh and certain punishment for crimes committed while armed, combined with effective law enforcement, and firmly supported by no-nonsense courts

and juries, provide the most certain combination for adequate control; and

Whereas, As to statutes; Laws should prohibit sale of firearms to felons, drug addicts, habitual drunkards, juveniles and mental incompetents; laws should invoke strict penalties against the possession of firearms by criminals and irresponsible persons. Laws should permit responsible, law-abiding adults to own and use firearms for legal purposes; laws should not require law-abiding adult citizens to register shotguns and rifles; and laws should not grant authority to any jurisdiction, police or otherwise, at any government level, to prohibit the purchase or ownership of firearms by law-abiding and responsible citizens; and

Whereas, In Michigan, alone, more than one and a half-million sportsmen would be adversely affected by legislation proposed and now before the Congress--a figure that applies substantially to most of the other states of the Union; now therefore be it

Resolved by the House of Representatives (the Senate concurring), That the Michigan Legislature respectfully memorialize the Congress of the United States to defeat the currently proposed anti-firearms legialation of S. 1592; and be it further

Resolved, That copies of this memorial be transmitted to the President of the United States, to the President of the Senate, the Speaker of the House of Representatives and to each member of the Michigan delegation to the Congress of the United States.

The concurrent resolution was referred to the Committee on House Policy.

House adopted, Senate concurred 6/23/65.

RESOLUTION

WHEREAS, the membership in attendance at this annual meeting of the State of Michigan American Legion is well informed of the detail and provisions of the so-called Dodd Bill being S 1592, and

WHEREAS, the membership is likewise informed of the latest proposed amendments made by the United States Attorney General at the hearing before the Ways and Means Committee in the United States House of Representatives within the past two days, and

WHEREAS, said proposed amendments do not meet the basic objections of the Michigan members of the American Legion to this restrictive gun legislation in that the said bill:

1. Will make it impossible for any individual, no matter how good a citizen he may be, to purchase any sporting gun via mail order;
2. Is unnecessarily restrictive of the citizen's right to keep and bear arms granted under the Constitution of the United States in support of which our members have offered their lives in two World Wars;
3. Will interfere with hunting and shooting sports in which so many of our members participate by:
   (a) Hampering the ordinary citizen in the acquisition of a low cost firearm;
   (b) Provide the Secretary of the Treasury with broad authority which could include registration of firearms and a police or other permit to purchase;
   (c) Requiring a permit to be issued by the Secretary of the Treasury to an individual carrying a firearm across a state line on a hunting trip or shipping same for repairs;

and

WHEREAS, we resent the attempt of Government to further involve us in administrative detail by making us file applications for permits and the like believing as we do that such proposed legislation will not curb crime and that the criminal will acquire his weapon be it knife, ice-pick or firearm and that only the law abiding citizen will be disarmed; and

WHEREAS, we are convinced that the King-Hickenlooper Bill (H 1965) will accomplish the professed desires to satisfactorily supplement existing firearms control laws, now,

THEREFORE, BE IT RESOLVED, that the membership be recorded as:

A. Being unalterably opposed to S 1592 assuming adoption of proposed amendments thereto;
B. Being in favor of the King-Hickenlooper Bill

BE IT FURTHER RESOLVED that copies of this Resolution be forthwith furnished all Michigan Congressional Representatives, the President of the United States and the Honorable Wilbur M. Mills, Chairman of the Ways and Means Committee of the United States House of Representatives.

**WHEREAS, no organization has greater patriotism and allegiance to our Government than the Legion; and

SUBMITTED BY LUKE LABRE, ESCANABA POST NO. 82

UNANIMOUSLY PASSED 7/18/65

# IMPORTANCE OF ANGLING REGULATIONS

## "LIBERALIZED ANGLING"

CLARENCE F. CLARK

OHIO DIVISION OF WILDLIFE

In discussing a subject as broad as the "Importance of Angling Regulations", I must introduce the subject by imposing restrictions on the materials to be covered. In general, I am considering those regulations affecting warm-water, sport fishing and more specifically bag limits, legal lengths and closed seasons.

Generally speaking, these regulations were promulgated to give each angler a fair opportunity to take his share of the crop of fish, to permit the fish to reach maturity before they were caught, to carry over into the following year an ample broodstock, to permit the fish to spawn unmolested by man, and to prevent selective harvests which might result in an over-abundance of less desirable species.

These ideas were based upon the suppositions that each angler was capable of harvesting his fair share of the crop, that water areas could be fished out, that the increased harvest during spawning season or during winter was detrimental to the population, and that selective harvest was a primary factor in the overbalancing of fish populations. R. W. Eschmeyer, in speaking before the International Association of Fish, Game and Conservation Commissioners in 1946, stated, ". . . . we must expect the Administrator, through his fisheries investigators, to obtain basic information comparable to industries' records on production and sales, and to be guided in his regulatory program by a knowledge of the extent to which the fish crop is used".

The idea that Ohio's fish crop was not properly used, and that our lakes and ponds were underfished was expressed at the 1940 meeting of the American Fisheries Society by Dr. T. H. Langlois. To test this theory, Ohio initiated an experimental liberalized angling program in 1945. Bag limits, legal lengths, and closed seasons were removed from the angling in an 80 acre lake in southern Ohio. Harvest data obtained from this lake in 1945 resulted in removing these regulations from eight other lakes in 1946 through 1948, and from one southern Ohio stream. Hundreds of thousands of anglers were contacted during the experimental stages of this program. This creel data supported the opening of 16 additional areas in 1949 and 75 in 1950, together with seven more experimental streams. Another 30 lakes were added to those for relaxed fishing in 1951, and by 1952, all waters of the state under control of the Ohio Division of Wildlife, were opened to public angling.

The hundreds of thousands of angler contacts, during the six experimental years, provided information which led Ohio to also make efforts to obtain a greater harvest of under-used species. Rough fish, including sheepshead in Lake Erie only, carp, quillback, suckers, dogfish, buffalo, gizzard shad, and goldfish can be taken by any method other than explosives, poisons, firearms, crossbows, electricity, chemicals, seines or traps, except shad and smelt can be taken by minnow seines, dip or landing nets. We permit the use of unlimited numbers of trot lines in streams and in 10 lakes; but not more than 50 hooks or lines in any one water area. Twelve or more float lines with three single or one treble hook can be used if under control by the user.

A maximum of 50 set lines, with single hooks, and attached to permanent objects, can be used by one person. We also permit the sale of 40 catfish per day, taken from the inland fishing district of the state.

The success of Ohio's liberalized fishing program can be judged from the recommendations made by our sportsmen in their annual fish and game hearings. The sportsmen of Ohio hold annual meetings in each county, to which the general public is invited to discuss and prepare recommendations for changes in regulations. A sportsman and a farmer are elected as delegates at each county meeting to represent the county at the district meeting on the same subject. A farmer and a sportsman delegate are elected at each district meeting to carry to the State Fish Hearing the recommendations approved in the five district meetings. The subject of closed seasons, legal lengths and bag limits was not introduced into three of the five district fish hearings in 1965. In one hearing, it was recommended that liberalized angling be continued by a vote of 21 to one. In the fifth district meeting, a motion to establish an 11 inch legal length on bass was defeated by a vote of 12 to 3 as 14 other delegates sat idly by not interested enough in the motion to vote.

The private boat landing operator at Clendening Reservoir reported that 11 five pound bass had been taken by May 17 of this year and that 24 bass up to 4 pounds in size were taken by one angler in one day. Another angler took four which weighed a total of 20 pounds in one day. Six flathead catfish weighing a total of 277-3/4 pounds were also taken in this lake on June 27, 1965.

Lew Klewer, writing in the Toledo Blade on July 3, 1965 reported catches of 30 pounds or more of perch along the shore of Lake Erie. He also described excellent smallmouth bass fishing in Lake Erie in an article on June 6, 1965. We received a letter last year criticizing liberalized smallmouth bass fishing in Lake Erie which resulted in two men taking 75 in one day. This success after 12 years of liberalized angling does not indicate a shortage of fish.

The Ohio Power Company strip mine ponds in southeastern Ohio are open to public angling under a public fishing agreement. The Parkersburg News of Parkersburg, West Virginia for May 9, 1965 pictured two anglers who had taken over 100 largemouth bass from these ponds in one day, of which 43 were over 12 inches in length. The 21 taken home weighed 38 pounds. Phil Dietrick reported in the Akron Beacon Journal in May of this year, that catches of 14 to 44 bass were being made in the Portage Lakes area. The May 9, 1965 issue of the Columbus Dispatch stated that 150 largemouth bass had been registered at one of the twelve landings on Buckeye Lake. The Zanesville Record for the same month listed a harvest of 34 largemouth bass ranging from two to 5-1/2 pounds by a man and wife.

Catches of 910 crappies in one day by one person from Lake St. Marys were reported by the Celina Standard in May of 1961. The Zanesville Recorder of May 19, 1965 listed creels of 24 to 160 crappies from Piedmont Reservoir. Takes of 144 to 200 crappies taken by a couple in two fishing trips to Buckeye Lake were reported in the Columbus Dispatch for May 9, 1965. The Celina Standard for May 6, 1964, stated, "The crappie fishing has been fabulous this spring . . .'

One of the May 1965 issues of the Akron Beacon Journal reported harvests ranging from 40 to 226 bluegills and redears per person from Turkeyfoot Lake and indicated that some of the redears were one pound or larger in size. The Chillicothe Gazette for June 17, 1965 stated that white bass in Lake Erie bite so rapidly that your arms become tired from catching them. The Canton Repository on May 11, 1965 reported that crappie fishing at Mosquito Creek Reservoir was the best ever. The greatest influx of fishermen that had visited Lake St. Marys in many years because fishing was "way above par" was described in the Celina Standard on May 13, 1964.

We have oftentimes been asked if liberalized angling has resulted in a lack of larger sizes of fish. Complete liberalized angling was adopted for all Ohio waters in 1952. The state record for largemouth bass was broken in 1963, rock bass in 1962, spotted bass in 1964, white bass in 1954, bullhead in 1961, channel catfish in 1964, flathead catfish in 1962, black crappie in 1962, white crappie in 1963, muskellunge in 1964, yellow perch in 1954, and northern pike in 1961. Most of Ohio's record fish have been taken nearly 10 years after liberalized angling became a state-wide program. The Akron Beacon Journal of May 24, 1957 stated, "The Ohio collapse hasn't come yet. There is reason to doubt after five years that it will ever occur. In fact, more fish are being caught . . . . and the percentage of big ones is as great or greater than it ever was. More large bass have been caught this Spring than in any Spring within recent record." We list 1962 as a "Banner Fishing Year" for it produced a 3 pound black crappie, a 14 pound walleye, a 2 pound 12 ounce white crappie,

a 31 pound musky, a 9 pound 2 ounce largemouth bass, a 65 pound flathead catfish, and a bluegill sunfish hybrid of 2 pounds 4 ounces in weight.

Lew Klewer estimated in the July 11, 1965 issue of the Toledo Blade that nearly 500 muskies of 30 inches or larger were caught in Ohio waters last year. The record was a 36 pound 10 ounce fish measuring 51-1/2 inches. Ohio's muskie program was initiated under our liberalized angling regulations and has produced these results on the stocking of not more than an average of 6,500 three inch plus fingerlings per year during the past 11 years.

In summarizing public opinion of our program and its results, the June 10, 1965 issue of the Columbus Dispatch reported that, ". . . . there are plenty of fish in your own back yard", and asked why Ohio anglers should go elsewhere for fishing stories. "Best in Ten Years" was a headline describing fishing in the Athens Messenger on May 9, 1965; and the Warren Chronicle, May 4, 1962 described the local picture on fishing as "terrific". The Columbus Dispatch, May 28 1965, stated that " . . . more fishermen are fishing and more fish are being caught than in many a moon". Ray Murlin in the Celina Daily Standard July 4, 1965, wrote, "Although I've been convinced that their idea of liberalized fishing is okay, I"ll never admit it to them. I enjoy the controversy too well".

We admit that we have some anglers and some writers who do not agree with our liberalized program; but their criticism is usually based on the excessive catches made by individuals. The fact that excessive creels can be taken after 13 years of liberalized angling

does not appear that fishing in Ohio has gone to pot. The Athens Messenger for August 9, 1960 gave Ohio's fisheries men credit for proving their point and stated that ". . . fishing on the whole is more apt to be rewarded now than it has been since pioneer times".

Although we believe that the pleasure and relaxation derived from angling are the greatest rewards of angling, and that the methods used should be those which contribute to these objectives, we also look upon fish as a crop which should be properly harvested.

July 28, 1965

# REPORT OF MIDWEST PHEASANT COUNCIL ACTIVITIES TO THE MIDWEST ASSOCIATION OF FISH AND GAME COMMISSIONERS

By
Carl G. Trautman
Immediate Past Chairman, Midwest Pheasant Council

The 1965 meeting of the Midwest Pheasant Council was held at Kingsville, Ontario, Canada, April 6-8. This gathering constituted the council's annual business meeting and marks the official break in activities from one year to the next. It afforded the opportunity for interim committees to report their findings, to determine the status of council-sponsored projects and reports, to inspect and finalize research and management recommendations and resolutions, gain first-hand information on studies currently in progress, and to individually and collectively discuss pheasant research needs and problems. As in former years, delegates and associates greatly appreciated this once-a-year opportunity. It is hoped the Midwest Commissioners will continue to find the efforts of their fledgling organization useful, and keep its endeavors in the direction they desire.

As a brief review of the council's background and objectives -- The Midwest Association of Fish, Game, and Conservation Commissioners voted to establish this organization at their 1957 meeting. They designated 13 midwestern states (Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin, and two Canadian provinces -- Manitoba and Ontario -- to make up the council body. With Saskatchewan added later.

During the seven and one-half years the council has been active, one annual meeting has taken place in Minnesota, Ohio, Nebraska, Wisconsin, Colorado, Michigan, South Dakota, and Ontario, with an additional special meeting in Minnesota in the fall of 1959. Trips afield at the different meeting sites of past years have afforded the opportunity to observe and appraise pheasant range conditions as they exist in different parts of the Midwest. This year we were pleased to visit Pelee Island, which has a fabulous history of high pheasant populations and represents some of the best pheasant range in the Midwest.

Two basic purposes for the council's existence are (1) to eliminate unnecessary duplication in pheasant research, and (2) to increase efficiency, coordination, and integration in pheasant research. The five original objectives to serve as a guide for work to be done are (1) to prepare lists of needed research projects, and adopt mutually acceptable principles concerning the procedures for gathering and evaluating research data, (2) to agree on areas in which specialized research should be carried out, and with the concurrence of personnel in such areas, relegate such studies to the states with the best facilities and technicians for the assignments; (3) to carry out research assignments as may be directed to the council by the parent association, (4) to hold one or more annual meetings for the purpose of presentation, exchange, and discussion of research findings, and experiences on the biology and management of the pheasant, and prepare reports for presentation to the Midwest Association at its annual meeting, or by circularized reports, and (5) to conduct cooperative studies in population distribution and densities, harvest, physiology, ecology, and other studies significant in the research and management of the pheasant. Subsequent to these,

additional objectives have been suggested by members of the parent association, which in abbreviated form, specify that the (1) council should take a greater part in the drafting of regulations, recommendations, and documents relating to hunting seasons, Federal Farm programs, and pheasant winter mortality and winter feeding, with more information on the foregoing preferably disseminated in brief and timely reports, and (2) to develop pheasant breeding and late-season population status reports for providing an annual record of the Midwest range-wide population density. Council delegates and associates are constantly reminded of the existence of above purposes and objectives in order that a more consolidated overall effort will be realized toward their achievement. Since biologists as a rule already carry a full work-load in the performance of regularly scheduled duties for the agencies with whom they are associated, council affiliated research projects and activities can generally move ahead only as fast as they can be incorporated into, and be made a part of the regular itineraries. In other words, council-advised studies hopefully will become more prevalent as more of the old projects expire.

Delegates and guests convened at 7 p.m. on the 6th for an informal briefing by personnel of the Ontario Lands and Forest Staff on Ontario's wildlife resources, management of these resources, department organization and research being carried on. William A. Morris, council Vice-Chairman presided over this meeting which provided a wealth of information about the host province. A ten-page summary of the pheasant management program was distributed to those in attendance and may be obtained from the official delegate of each state and province in attendance.

The meeting was officially called to order by the Chairman at 9 a.m. on April 7, with delegates from 13 states and one province in attendance. Also, Fred Hartman, guest representative from Pennsylvania requested official representation of his state at future council meetings. Together with alternate delegates and Ontario personnel, a total of 39 persons attended.

As in the past, a brief state-by-state poll of the past fall's pheasant hunting season, over-wintering conditions, and spring breeding population prospects was conducted. With the exception of Wisconsin, Pennsylvania, and Indiana where last falls's harvest of birds was up, other states reported the harvest as having been about the same or lower. North Dakota, South Dakota, Minnesota and Colorado sustained the greatest declines. Winter was generally mild and "open" in all states except North Dakota, South Dakota, and Minnesota. Southwestern North Dakota, western Minnesota, and northwestern Iowa were hit by severe blizzards. This year's breeding populations were believed to be down over roughly the western half of the Midwest and variably unchanged or up throughout the eastern half. Declines of 50 percent and upwards were reported for Minnesota, North Dakota, South Dakota, and Iowa. In the eastern half, Wisconsin appears to have fared the best -- last fall's pheasant harvest has increased 43 percent over that of 1963 and this spring's breeding populations are higher than average in size.

An official welcome was extended to the group by Frank Walden of the Lands and Forests Department. Mr. Walden briefly outlined the functions and programs of the department, pointing out that the management policy is to make full use of existing natural resources. Annual revenue from hunting, fur, and commercial fishing amounts to

between four-to-five million dollars. These funds go into the Provincial fund, with the department being operated on funds allocated by the Provincial legislature. Pheasant management in Ontario includes a sizable pheasant stocking program on which about $60,000 are spent annually. Returns from stocked birds are low (10 percent or less for released poults, making the production cost of those bagged run at $17.95 per bird) but the program is considered worthwhile since it tends to keep private lands open to limited public hunting. A general decline in hunter-land owner relationships has been noted, and firearm restrictions are enforced by townships. As a result of frustrated and sharply curtailed public hunting opportunity on private land, the department presently operates four public shooting grounds, intends to acquire more, and encourages the establishing of privately owned shooting preserves. The fall harvest includes legalized hen-shooting since (1) there are no sound data to indicate that harvesting a quota of hens is harmful to breeding populations, and (2) as long as only a limited number are harvested, the fall kill appears to reduce natural winter losses in about the same proportion. Pheasant research is presently limited to a university study to evaluate the hardiness of game-farm-raised birds in Ontario as compared with the birds from midwestern states and provinces.

Current council Secretary, John P. Weigand, Nebraska, commented upon the necessity of updating the council mailing list. Eugene Klonglan, immediate past secretary, reminded delegates that extra copies of most council reports would be retained at his office if storage space continued to remain available. Mr. Weigand will prepare and distribute a list containing the titles of all reports

(both old and new) which are currently available and where copies may be obtained.

In order that the parent organization as well as the council members may be kept in touch with studies and research findings, delegates discussed the possibility of using the information exchange facilities of the Smithsonian Institute (Washington D.C.) as a clearing center. Arthur Eustis, U. S. Fish and Wildlife Service, Minneapolis, explained that copies of all Pittman-Robertson and Dingill-Johnson projects, current and proposed, are forwarded to the institute (Science Information Exchange) and the information is available there upon request.

Concerning the matters of (1) direct submission of research job outlines to the institute and/or council secretary; (2) issuance of a comprehensive report by the council at less than five-year intervals; and (3) the role of the council in providing the parent organization with project information, Glenn Chambers (Missouri) suggested the following points (in the form of a motion) for developing a workable system: (1) since all states under P-R already have copies of their projects submitted to the institute, it would be unnecessary for the official delegates to send another copy; (2) delegates from states having pheasant projects not financed by P-R would be responsible for forwarding job outlines and/or abstracts of such projects to the institute; and (3) the council should maintain its current comprehensive research reporting system for the convenience of the parent organization and the council. Above motion was seconded by Robert Chesness (Minnesota) but failed to be adopted. Mr. Chambers then offered to compile the next research report, and was appointed as a committee of one to develop a satisfactory

reporting system.

Two interim committees were active prior to the Ontario meeting, Hal Swope (Colorado) and Carl Wolfe (Nebraska) on pesticide research, and Eugene Klonglan (Iowa), C. D. Besadny (Wisconsin), and Maynard Nelson (Minnesota) on council resolutions. Mr. Swope submitted a 13-page report entitled "Midwest Pheasant Council 1965 Pesticide Committee Report". This report was compiled from material obtained in reply to a letter of inquiry sent to 42 states and provinces. It provides information on locations where studies have been conducted and where some are presently in progress, and some of the results obtained. The committee concluded that nothing particularly new on pesticide-pheasant relationships had been found from that included in the 1964 report. Pesticide researchers are still struggling with the main problems of obtaining necessary equipment and developing techniques. States about to, or just having engaged in pesticide studies are Nebraska where a laboratory is being equipped and the electron-capture gas chromatography method of analysis will be used on specimens collected to obtain information on the type, rate, and extent of all pesticide applications made during 1964; Dr. Raymond Linder of South Dakota State University has begun studies in the field and with penned pheasant for determining the effects of dieldrin, ethyl-parathion and sevin on pheasant production and mortality through two generations; and Wisconsin reports that pesticide studies will get top priority if additional funds become available. The endeavor of keeping pesticide matters in correct perspective is expensive business.

Dr. Klonglan, chairman of the resolutions committee, reported upon the reasons why the 1964 Council Resolutions were rejected by

the Midwest Fish and Game Commissioners. The resolutions presented for adoption included "Treatment of Road-sides to Favor Pheasant Production", and "Pheasant Hunting Season Recommendations". Mr. M. O. Steen, (Nebraska), Chairman of the Resolutions Committee of the parent organization stated (Minutes of 1964 Annual Meeting) their rejection was "the majority decision of the committee, the reason being that the subjects discussed were subjects which were better presented to the body (Midwest Association) in the form of a report from the Pheasant Council on their findings, rather than in the form of resolutions directing, or requesting, the members of the association to adopt certain methods of management of this particular species whether or not administrately they saw fit to do so".

As related to above, C. D. Besadny (Wisconsin) suggested the resolutions be changed to report form. Dr. Klonglan concurred, and Ken Johnson (Nebraska) offered to contact Mr. Steen on ways to present council recommendations in acceptable form.

The committee comprised of C. D. Besadny (Wisconsin) and William R. Edwards (Illinois) has completed work on an assignment intended to more clearly determine the relationships between climate, landuse, and pheasant populations. The landuse aspect was analyzed by Mr. Besadny and that involving climate by Mr. Edwards, with council members contributing data from their respective states and provinces. The landuse information has been available for some time in the form of a council report, (Pheasant Population Fluctuations in Relation to Trends in Major Cultivated Crops in the Midwest, 1954-59) and Mr. Edwards has submitted his report to the Journal of Wildlife Management for publication. Bill presented a progress report on his subject at the Colorado meeting in 1962 (see council minutes of that year).

Each year several members are requested to report upon subjects of outstanding interest. This year these reports consisted of the following:

1. Nebraska special hen-harvest season by John Weigand.
2. Pheasant radio-telemetry equipment, and its use in pheasant studies by Robert Dahlgren (South Dakota).
3. Breeding and stocking results of crosses and pure strains of pheasants under experiment in Missouri by Glenn Chambers (Missouri).

To date most of the research effort has been devoted or directed toward the production of game crops and relatively little has been done in the way of finding out how to make better use of the crops. What happens during the harvest period is just as important as what happens during the production stages. There are economic and practical, as well as biological limits, to the size of game crops. Existing and probable future hunting pressures can be taken care of only by making maximum use of the resource. A thorough knowledge is necessary as to the extent a species can tolerate hunting and still not have its reproductive potential impaired. The advisibility of harvesting hen pheasants was given a trial this year in Nebraska where the Game Commission authorized a special season on hens. This experimental season was allowed in the Panhandle Region during the final nine days of the regular season. One hen was allowed daily, and five in the overall 20-bird possession limit. Hunting pressure this late in the season (January) was found to be light. A total of 207 hunters were interviewed and 196 birds examined at check stations. Two hundred, nineteen Panhandle hunters returned modified hunter questionnaires (Panhandle and two adjacent counties) and some

harvest information was obtained from standard hunter success questionnaires (statewide). Nearly all hunters participating in this special season were local residents. The special questionnaires indicated hunters averaged 2.0 cocks and 1.4 hens during the nine-day period. The average 93-day season bag size for hen-season and non-hen-season hunters was 16.0 and 5.6 birds, respectively. Hens comprised 8.8 percent of the entire bag of the hen-area hunters. Eighty-five percent of the hunters favored the hen season. Landowner reaction was 48 percent favorable, 27 percent opposed, and 20 percent indifferent. Mr. Weigand estimated that probably less than 5 percent of the Panhandle hen population was removed, and thought up to about 40 percent could be safely removed. He hopes that hen harvests can be continued and increased to the point where some effect on production could be observed and studied. How important is hunting season mortality in the life economy of a game animal? Populations of species of high reproductive potential and efficiency tend to turn over rapidly, even when little or no hunting is done.

Biotelemetry is described as an instrumental technique used for gaining and transmitting information from a living organism and its environment to a remote observer. Improvement in radio telemetry units and reduction to miniature size has proceeded rapidly over the past several years. There is widespread interest in the application of electronics to ecological research, and to the management of wildlife. South Dakota has kept in touch with the development and application of this new research tool. Mr. Dahlgren demonstrated the operation of the equipment used in pheasant tracking, which consists of a portable receiver, antenna, and a miniature transmitter. This equipment can be obtained from Sidney Markusen, Cloquet, Minne-

sota. A package deal of $1500 is adequate for small projects and includes 2 portable receivers plus antenna, 6 transmitters, and 3, 20-foot semi-portable field antenna. Combined cost of equipment and operating man-power is high, consequently large-scale studies are generally out of the picture. Cooperative studies between different agencies and states appears as the most feasible approach for gathering sample sizes having good statistical validity. There are certain "Knacks" about successfully using the equipment that are learned only with experience. Those who are contemplating telemetry studies will profit by consulting with Bob.

The Missouri pheasant breeding experiments are of outstanding interest because of a gradual realization that the problem of dwindling pheasant populations in the face of ever-intensifying agriculture will not be solved by programs designed to arouse a public consciousness in favor of large-scale habitat improvement. Rather, it could be possible that the ultimate solution may be forthcoming from intensive pheasant breeding research for developing not only hardier pheasant strains, but also a variety of strains for a variety of ecological situations.

Initial pheasant introductions (Chinese Ringneck stock) throughout Missouri in the 1930's resulted in pheasants becoming successfully established only in the northwestern four counties and in the St. Charles Bottoms. This state next turned to the Fish and Wildlife Service's Foreign Game Export Program for assistence. Through this program the Eastern Blackneck, Western Blackneck, White-Winged, Korean and Reeves pheasants were received in 1958.

Several releases of Blackneck and Blackneck -- Ringneck crosses appear to be failures. Apparently the same fate lies in store for

planting made of the Reeves pheasant in Missouri woodlands, primarily because this species domesticates too readily. On the other hand, successful establishment of the Korean pheasant appears imminent since reproduction and survival has been good. Releases of this species in two additional sites is currently planned.

One of the more significant results from the nest-temperature study also reported upon by Mr. Chambers, is that the eggs from Korean pheasants with rare exceptions exhibit superior stress-withstanding qualities when compared with other species of pheasants, including the Chinese Ringneck.

Four topics for panel discussions rounded out this year's sessions, and simulated a free interchange of ideas. These topics were the following:

a. Improving game inventory techniques: (1) Standardization of the many pheasant inventory techniques commonly in use in the various member states and provinces; (2) Small-area censusing (Eugene Klonglan, discussion chairman; Gene Woehler and Carl Trautman assisting).

b. Pheasant habitat management practices and programs: (1) Diagnosis of factors limiting pheasant productivity -- on public and private lands and on intensively studied areas; (2) Management techniques necessary to increase productivity; (3) Techniques to evaluate pheasant population response to habitat management; and (4) Costs involved in both management and evaluation. (Edward J. Frank, discussion chairman).

c. The Feed Grain Program: (1) Report of use made of research information by Minnesota for stimulating Wildlife Federation

action on Feed Grain Land Retirement Program; (2) Discussion of ideas, plans, and assignments related to subject "Using Our Research Data to Produce Better Cover on Lands Idled by Feed Grain Program" (Maynard Nelson, reporter and discussion chairman).

d. Predator relationships: (1) Types of predators involved; (2) Effect on pheasant populations; (3) Methods of control and related costs (C. D. Besadny, discussion chairman).

Discussion of the game inventory techniques topic commenced at the 1964 meeting. The types of inventory techniques used in the several states and provinces were assessed. Discussion was more concerned with the mechanics of taking counts, rather than toward evaluating the relative merits of each technique or method, although some occurred on the latter. The general concensus was that we need an attempt at standardization of many of these techniques. A special committee, consisting of Eugene Klonglan (Iowa) as committee chairman with Gene Woehler (Wisconsin), and Carl Trautman (South Dakota) assisting, was appointed in 1964 to evaluate differences in census methods and procedures between states, and make recommendations aimed at standardization.

No report of findings could be presented at the 1965 meeting because many states have not submitted samples of survey material requested, or failed to include complete instructions, explanations, etc. A check sheet of the types of surveys used by each state will be compiled and submitted to the council for approval. It is hoped that survey standardization can be accomplished by this approach. The same committee members will continue on this panel for the ensuing year.

With respect to small-area censusing, we are interested in a survey method which will provide an accurate index of local population density, rather than only of statewide density. Detailed information on this subject will be presented in the 1965 meeting minutes.

Discussion of the pheasant habitat management practices and programs topic was ably directed by Edward Frank (Wisconsin). Valuable information is anticipated from the fine study currently in progress in Wisconsin. Plans are being made to develop and circulate questionnaires for gathering and consolidating information on the various habitat restoration and improvement programs and practices employed at the present time throughout the country.

An informative and challenging discussion of the Federal Feed Grain Program was conducted by Maynard Nelson (Minnesota). Mr. Nelson and Robert Chesness have done a great deal in the past year toward exposing the weaknesses of the Feed Grain program in the role of supplying pheasant habitat. Their Midwest Wildlife Conference paper pointed out the value of small grain vegetation as pheasant nesting cover and the drastic effects the dwindling area of small grain habitat is having upon pheasant production, with no relief possible from the present "scorched earth" idle land programs. Mr. Nelson contended that "Feed Grain acreages would substantially benefit pheasants under the present one year contracts of these acres were managed similar to oats planted as a crop". The "message" was understandable and "got across" to the Minnesota Wildlife Federation. With the Federation's backing it made it all the way to Washington. When last heard from, some favorable changes had been made in the program.

The fact that the public could be influenced and led to act upon their findings represents an excellent example of an effective job in public relations. In the words of Walter P. Taylor: "Effective and helpful public relations require telling the people what is going on in such a way that they will aggressively support action for the greatest good of the largest number of people over the longest time".

Time unfortunately ran out before the predator relationships topic could be discussed by Mr. Besadny. A veteran of "bounty wars", his informative article on fox food habits in the November issue of the Wisconsin Conservation Bulletin helped us considerably in South Dakota in our battle to hold the lid on fox bounty increases. The predator and predation issues are far from being obsolete, and much more good solid factual information is needed to settle them decisively.

Interim committee appointments for the 1965-66 period are as follows:

Resolutions: C. D. Besadny, Chairman, with Maynard Nelson and Ken Johnson (Nebraska) assisting.

Standardization of Census Methods: Eugene Klonglan, Chairman with Robert Chesness, Robert Dahlgren, Carl Trautman, and Eugene Woehler assisting.

Research Information: Glenn Chambers

Pesticides: Robert Tully (Colorado), Chairman, with Hal Swope, and Carl Wolfe assisting.

Delegates from Illinois, Indiana and Missouri invited the council to have the next meeting in their states. The Illinois invitation was accepted and William Preno became the Vice-Chairman for the coming year. Since the host delegate automatically advances to the Chairmanship, William Morris will Chair the 1966 meeting, John Weigand continues as Secretary.

# MIDWEST MOURNING DOVE COMMITTEE

# REPORT

# NO. 3

# JULY 1965

The Membership Of The

MIDWEST TECHNICAL DOVE COMMITTEE

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The Membership Of the
MIDWEST TECHNICAL DOVE COMMITTEE
(Continued)

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TO: The Association of Midwest Fish & Game Commissioners

FROM: MIDWEST TECHNICAL DOVE COMMITTEE

SUBJECT: Mourning Dove Committee Report - 1965

Accomplishments of the Committee during the past year have been very limited. Foremost has been the progress made to include all Association states in the randomized system of call-count routes. This should be completed in 1966 according to present schedules.

Very few doves were banded this past year even though the Association adopted a resolution in 1964 to the effect of "urgently recommending" that each member state undertake a program of preseason (June through August) banding of adult and immature doves. Realistically, how much financial support from license dollars can be expected for banding birds which cannot be legally hunted? Nevertheless, the banding effort that would provide the mortality rate information required to properly utilize the dove resource is still urgently needed.

The Committee has submitted a resolution to the Association, which, if adopted and Management Unit Technical Committees are established, will eliminate the necessity for a Midwest Committee. If the Management Unit Committees do not materialize, the Midwest Dove Committee should be continued. The need for interstate communications in dove research and management are no less now than before. If the recommendation to form Dove Management Unit Committees is adopted, the effectiveness of the Committees will be largely contingent upon the continuing support of individual state administrators.

Each Committee member is due thanks for his participation this past year. Cooperation has been excellent and all requests for help fulfilled, a good example of what may be done by individual states and without the need for formal legislation and regulation. Finally, credit is due the U.S. Fish and Wildlife Service, Patuxent Wildlife Research Center, for providing both the data and narration for the banding and population material included in this report.

Respectfully Submitted,

Kenneth R. Russell, Chairman
Midwest Technical Dove Committee

Note: The information contined in this report may NOT be used for publication without written permission from the contributing agency, or the committee chairman.

## Call-Count Route Randomization

The most notable accomplishment of the Midwest Dove Committee has been the successful establishment of the randomized route system in eleven midwestern states. The randomization system essentially amounted to stratifying the country into similar physiographic areas, dividing each area into a number of twenty mile square blocks and then randomly choosing a predetermined number of blocks within which to establish routes. The selected blocks were then numbered at one-half mile intervals from one to eighty around the block perimeter. One of the numbers was then randomly selected to serve as one end of the route, which continued toward the center of the block.

This sytem has the advantage of allowing the assumption to be made that the routes are located in such a way as to permit representative measures of dove population levels within the regions, an assumption that could not be made reliably with the previous "management" routes.

| STATE | RANDOMIZED | YEAR |
|---|---|---|
| Colorado | Yes | 1964 |
| Illinois | Yes | 1964 |
| Indiana | No | 1966* |
| Iowa | Yes | 1964 |
| Kansas | Yes | 1963 |
| Michigan | No | 1966* |
| Minnesota | Yes | 1963 |
| Missouri | Yes | 1963 |
| Nebraska | Yes | 1963 |
| North Dakota | Yes | 1965 |
| Ohio | Yes | 1964 |
| South Dakota | Yes | 1965 |
| Wisconsin | Yes | 1963 |
| Manitoba | ? | ---- |
| Ontario | ? | ---- |

MOURNING DOVE POPULATION TRENDS

# 1965 MOURNING DOVE BREEDING POPULATION STATUS

June 1965

## ABSTRACT

The 1965 mourning dove breeding population index was established from call-count survey data from 737 comparable routes in the United States. Trends in the breeding-population indices from 1964 and 1965 are as follows:

Eastern Unit down 3%
Central Unit down 6%
Western Unit down 14%

For the entire United States, the index was down 6%.

The decreases in the indices of all three management units indicate that the breeding dove populations have not maintained their increased numbers of last year and nearly approximate those of 1963 when populations hit a 3-year low.

A comparison of the 1965 breeding-population indices with the 10-year average (1955-1964) shows the 1965 index is 1.4% lower for the Eastern Management Unit, 11% lower for the Central Management Unit and 2.5% lower for the Western Management Unit. For the entire United States, the breeding population is 7.7% below the 10-year average index.

## STATUS OF THE MOURNING DOVE, 1965

### Introduction

An annual survey of the breeding population of mourning doves by a system of call-count routes provides an index to the status of the population in the United States. Through the cooperation of State, Bureau, and independent observers, call-count routes were widely established by 1953. The hundreds of cooperators who participate in the call-count survey have contributed the data that form the basis for this report.

The call-count survey period is May 20 - June 10; a period during which dove calling activity is relatively stable, as indicated by intensive studies in eastern United States (Special Scientific Report--Wildlife No. 17). Because hunting regulations must be published 30 days prior to the hunting season, the Dove Regulations Committee can meet no later than the latter part of June. Status statistics must be summarized for consideration by this Committee. This preliminary version of the 1965 Status Report serves this purpose.

## Procedure

### The Call-count Method

Call-count routes were established after field investigations in 1950-51 demonstrated the feasibility of the technique. These investigations were reported by Foote, Peters, McGowan, Kerley, Duvall, Robbins, and Wagner (1952). Doves heard calling and doves seen are recorded on a route 20 miles in length with listening stations one mile apart. Call counts begin one-half hour before sunrise and continue for two hours. Information on the call-count method and procedures for randomly selecting call-count routes was presented by Foote, Peters, and Finkner (1958).

The call-count survey provides the only population index for doves currently available on a national and international scale. It is an index to the breeding population only and does not indicate production. This is an important limitation because a high percentage of an average fall population is composed of young of the year. In calculating trends in the breeding population, doves heard calling has been a less variable index than doves seen. Additional research is needed to understand the relationship of doves heard calling and doves seen to the actual population in various portions of the mourning dove breeding range.

### Weighting Factors

When combining data from several States to obtain breeding population indices for management units or parts of management units, it is necessary to give appropriate weight to the data from each State. This is done by multiplying the average doves heard calling per route in each State by the estimated area of dove habitat in the State to obtain a breeding population index value. These index values for each State are then added together to obtain the properly weighted breeding population index for the combination of States. This weighing procedure recognizes differences between States both in dove density and the amount of habitat. Dove habitat area was estimated in the 1958 Mourning Dove Newsletter and is listed in table 1.

### Long-Term Trends

For the purpose of showing long-term trends in the breeding population index for a State, a base year was selected and annual percentage changes have been applied to the base figure (average doves heard calling per route) to give an adjusted figure which shows the true relation of indices from year-to-year. The selection of a base year is necessary because not all routes are censused each year. From a base year, average doves heard calling per route for each State has been adjusted annually according to the percentage change from the preceding year in counts on routes covered both years. For example, 1957 was selected as a base year in Alabama. In that year, the average doves heard calling per route was 21.1. In 1958, the percentage change from 1957 in counts on comparable routes was an increase of 12.8 percent, so the base figure of 21.1 was adjusted upward by 12.8 percent to a level of 23.8. In 1959, the percentage change from 1958 in counts on comparable routes was a decrease of 21.6 percent, so the 1958 adjusted figure, or adjusted base, was decreased by 21.6 percent; i.e., from 23.8 to 18.7.

## TRENDS IN THE BREEDING-POPULATION INDEX - 1965

### Eastern Management Unit

The breeding-population index for the Eastern Unit decreased 2.6 percent from the 1964 level. Although the population appears to be down, the index is only about 6 percent below the peak index of 1960.

Hunting States showed essentially no decrease, but nonhunting States were down 12 percent from 1964. The 1965 index for the whole unit is about 1.4 percent below the 10-year average index (1955-1964).

### Central Management Unit

The Central Management Unit contains about half the breeding habitat estimated to occur in the United States and about 55 percent of the nation's mourning dove breeding population.

The breeding population index for this unit showed a decrease of 6 percent in 1965. The hunting States declined 9 percent, and the nonhunting States declined 2 percent.

The 1965 index for this unit is 11 percent less than the 10-year average.

### Western Management Unit

The index for the Western Management unit decreased 14 percent from 1964 which nearly nullified last year's gain of 19 percent. The 1965 index is 2.5 percent below the 10-year average.

## LITERATURE CITED

Foote, L.E., H.S. Peters, T.A. McGowan, C. Kerley, A.J. Duvall, C.S. Robbins, and F.H. Wagner. 1952. Investigations of methods of appraising the abundance of mourning doves. U.S. Fish and Wildlife, Special Scientific Report--Wildlife No. 17. 55 pp.

_____, H.S. Peters, and A.L. Finkner. 1958. Design tests for mourning dove call-count sampling in seven southeastern States. Jour. Wildl. Mgmt., 22(4):402-403.

Table 1.--Trends in doves heard calling on call-count routes, 1964 to 1965

EASTERN MANAGEMENT UNIT - HUNTING STATES

| State | Est. dove habitat (sq. mi.) | Comparable routes | Percent change in number of doves heard comp. routes | Adjusted average heard per route & indices** 1964 Heard | 1964 Index | 1965 Heard | 1965 Index | Percent Change |
|---|---|---|---|---|---|---|---|---|
| Ala. | 51,078 | 28 | - 2.76 | 20.8 | 1,062 | 20.2 | 1,032 | |
| Del. | 1,978 | 2 | +14.29 | 35.0 | 69 | 40.0 | 79 | |
| Fla. | 54,262 | 20 | - 6.69 | 16.7 | 906 | 15.6 | 846 | |
| Ga. | 58,518 | 21 | -17.59 | 31.9 | 1,867 | 26.3 | 1,539 | |
| *Ill. | 55,947 | 18 | - 3.19 | 28.7 | 1,606 | 27.8 | 1,555 | - 3.1 |
| Ky. | 40,109 | 17 | + 6.61 | 28.9 | 1,159 | 30.8 | 1,235 | |
| La. | 45,177 | 18 | -14.83 | 15.7 | 709 | 13.4 | 605 | |
| Md. | 9,393 | 12 | - 0.82 | 19.6 | 184 | 19.4 | 182 | |
| Miss. | 47,420 | 22 | + 4.80 | 24.0 | 1,138 | 25.2 | 1,195 | |
| N.C. | 44,232 | 19 | +13.13 | 30.1 | 1,331 | 34.1 | 1,508 | |
| Pa. | 23,465 | 14 | + 4.02 | 9.6 | 225 | 10.0 | 235 | |
| R.I. | ** | 3 | -33.30 | 17.9 | -- | 11.9 | -- | |
| S.C. | 30,594 | 19 | +46.69 | 29.9 | 915 | 43.9 | 1,343 | |
| Tenn. | 41,961 | 24 | + 8.04 | 21.4 | 898 | 23.1 | 969 | |
| Va. | 37,904 | 11 | -17.15 | 38.9 | 1,474 | 32.2 | 1,221 | |
| W.Va. | 16,863 | 3 | - 3.41 | 12.7 | 214 | 12.3 | 207 | |
| Sub-Total | 558,901 | 251 | | | 13,757 | | 13,751 | - .04 |

EASTERN MANAGEMENT UNIT - NONHUNTING STATES

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Conn. | 3,919 | 2 | -20.00 | 3.6 | 14 | 2.9 | 11 | |
| *Ind. | 36,205 | 13 | -26.78 | 29.5 | 1,068 | 21.6 | 782 | -26.8 |
| Me. | ** | 3 | -- | 0.0 | -- | -- | -- | |
| Mass. | 1,977 | 23 | +14.37 | 5.0 | 10 | 5.7 | 11 | |
| *Mich. | 28,511 | 12 | -39.34 | 25.7 | 733 | 15.6 | 445 | -39.3 |
| N.H. | ** | 4 | +70.00 | 5.2 | -- | 8.8 | -- | |
| N.J. | 7,522 | 7 | -15.62 | 17.1 | 129 | 14.4 | 108 | |
| N.Y. | 11,982 | 10 | + 1.33 | 22.7 | 272 | 23.0 | 276 | |
| *Ohio | 41,122 | 13 | +13.67 | 18.5 | 761 | 21.0 | 863 | +13.5 |
| Vt. | ** | 2 | 0.00 | 2.0 | -- | 0.0 | -- | |
| *Wisc. | 38,300 | 18 | + 5.41 | 18.8 | 720 | 19.8 | 758 | + 5.3 |
| Sub-Total | 169,538 | 107 | | | 3,707 | | 3,254 | -12.22 |
| Eastern Unit Total | 728,439 | 358 | | | 17,464 | | 17,005 | - 2.63 |

*Indicates states represented on the Midwest Dove Committee.

**From a base year, average doves heard calling per route for each state has been adjusted annually according to the percentage change from the preceding year on comparable routes. The index, expressed in thousands, is the product of the adjusted average doves heard per route and the estimated area of dove habitat (in thousand of square miles).

Table 1.--Trends in doves heard calling on call-count routes, 1964 to 1965 (continued)

CENTRAL MANAGEMENT UNIT - HUNTING STATES

| State | Est. dove habitat (sq. mi.) | Comparable routes | Percent change in number of doves heard comp. routes | Adjusted average heard per route & indices ** 1964 Heard | 1964 Index | 1965 Heard | 1965 Index | Percent change |
|---|---|---|---|---|---|---|---|---|
| Ark. | 52,725 | 11 | -12.23 | 27.1 | 1,429 | 23.8 | 1,255 | |
| *Colo. | 72,777 | 9 | -12.07 | 14.2 | 1,033 | 12.5 | 910 | -12.0 |
| *Kans. | 92,113 | 21 | - 9.18 | 49.0 | 4,514 | 44.5 | 4,099 | - 9.2 |
| *Mo. | 69,270 | 15 | -12.91 | 37.8 | 2,618 | 32.9 | 2,279 | -13.0 |
| N.Mex. | 109,360 | 8 | -11.76 | 35.3 | 3,860 | 31.1 | 3,401 | |
| Okla. | 69,283 | 13 | - 8.44 | 41.7 | 2,889 | 38.2 | 2,647 | |
| Texas | 263,644 | 30 | - 5.66 | 38.8 | 10,229 | 36.6 | 9,649 | |
| Sub-Total | 729,172 | 107 | | | 26,572 | | 24,240 | - 8.78 |
| CENTRAL MANAGEMENT UNIT - NONHUNTING STATES | | | | | | | | |
| *Iowa | 55,986 | 16 | -16.84 | 31.3 | 1,752 | 26.0 | 1,456 | -16.9 |
| *Minn. | 60,007 | 13 | - 9.04 | 21.1 | 1,266 | 19.2 | 1,152 | - 9.0 |
| Mont. | 124,369 | 19 | + 2.39 | 64.9 | 8,072 | 66.5 | 8,271 | |
| *Nebr. | 76,653 | 19 | -15.92 | 49.4 | 3,787 | 41.5 | 3,181 | -16.0 |
| *N.Dak. | 70,054 | 24 | +15.61 | 33.4 | 2,340 | 38.6 | 2,704 | +15.6 |
| *S.Dak. | 73,475 | 13 | -10.03 | 29.0 | 2,131 | 26.1 | 1,918 | -10.0 |
| Wyo. | 82,080 | 11 | +24.78 | 16.6 | 1,363 | 20.7 | 1,699 | |
| Sub-Total | 542,624 | 115 | | | 20,711 | | 20,381 | - 1.59 |
| Central Unit Total | 1,271,796 | 222 | | | 47,283 | | 44,621 | - 5.63 |
| WESTERN MANAGEMENT UNIT - HUNTING STATES | | | | | | | | |
| Ariz. | 113,580 | 39 | - 3.28 | 24.9 | 2,828 | 24.1 | 2,737 | |
| Calif. | 141,123 | 50 | -32.28 | 27.7 | 3,909 | 18.8 | 2,653 | |
| Idaho | 49,685 | 10 | - 6.31 | 25.4 | 1,262 | 23.8 | 1,183 | |
| Nev. | 108,704 | 12 | - 6.24 | 13.7 | 1,489 | 12.8 | 1,391 | |
| Oreg. | 72,263 | 15 | -22.02 | 18.8 | 1,359 | 14.7 | 1,062 | |
| Utah | 74,111 | 12 | + 6.18 | 12.1 | 897 | 12.8 | 949 | |
| Wash. | 46,884 | 19 | - 0.53 | 20.9 | 980 | 20.8 | 975 | |
| Western Unit Total | 606,350 | 157 | | | 12,724 | | 10,950 | -13.94 |
| U. S. Total | 2,606,585 | 737 | | | 77,471 | | 72,576 | - 6.32 |

Figure 1. Mourning Dove Management Units

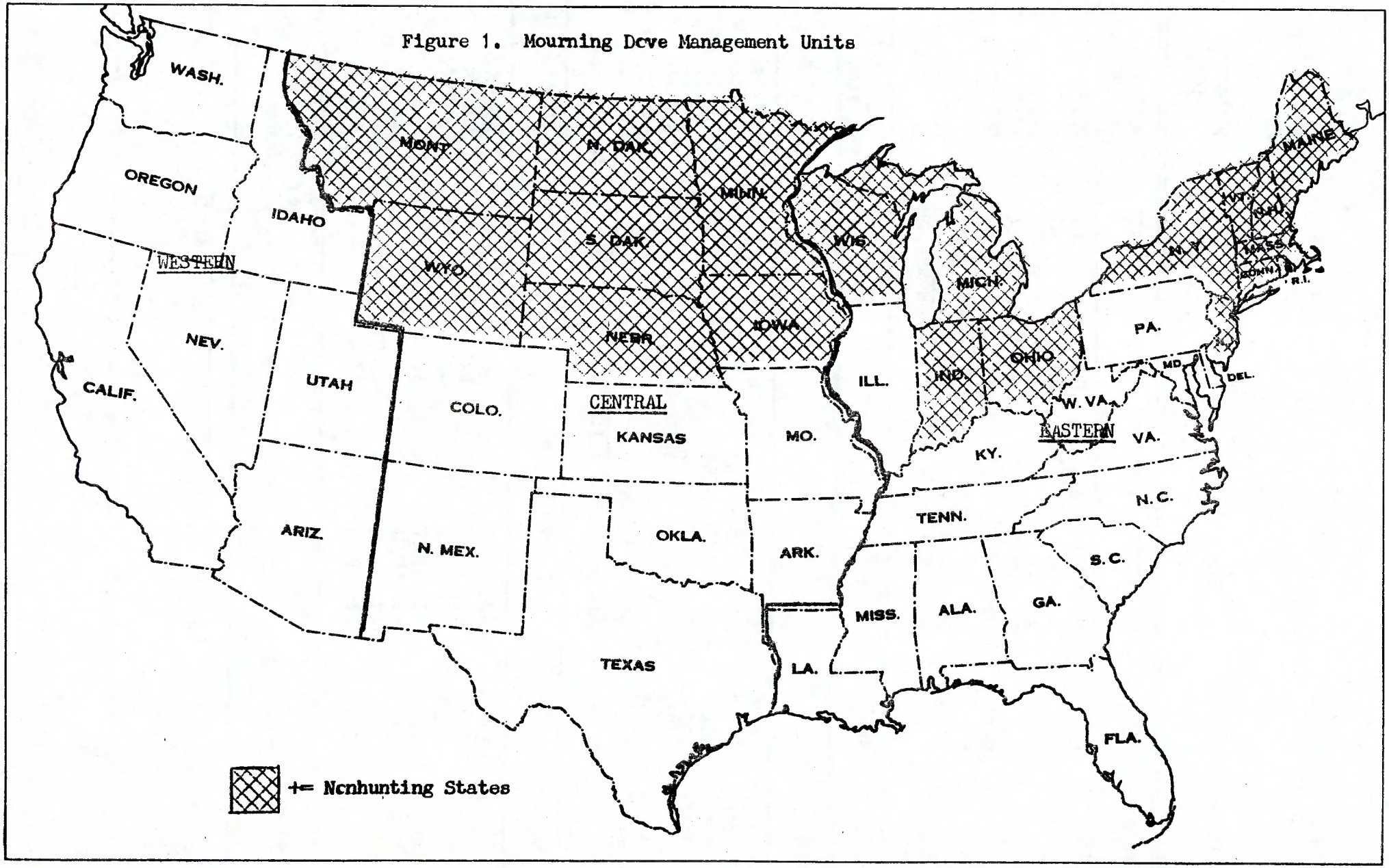


Figure 2. Trends in Breeding-population Indexes by Management Units, 1953-1965

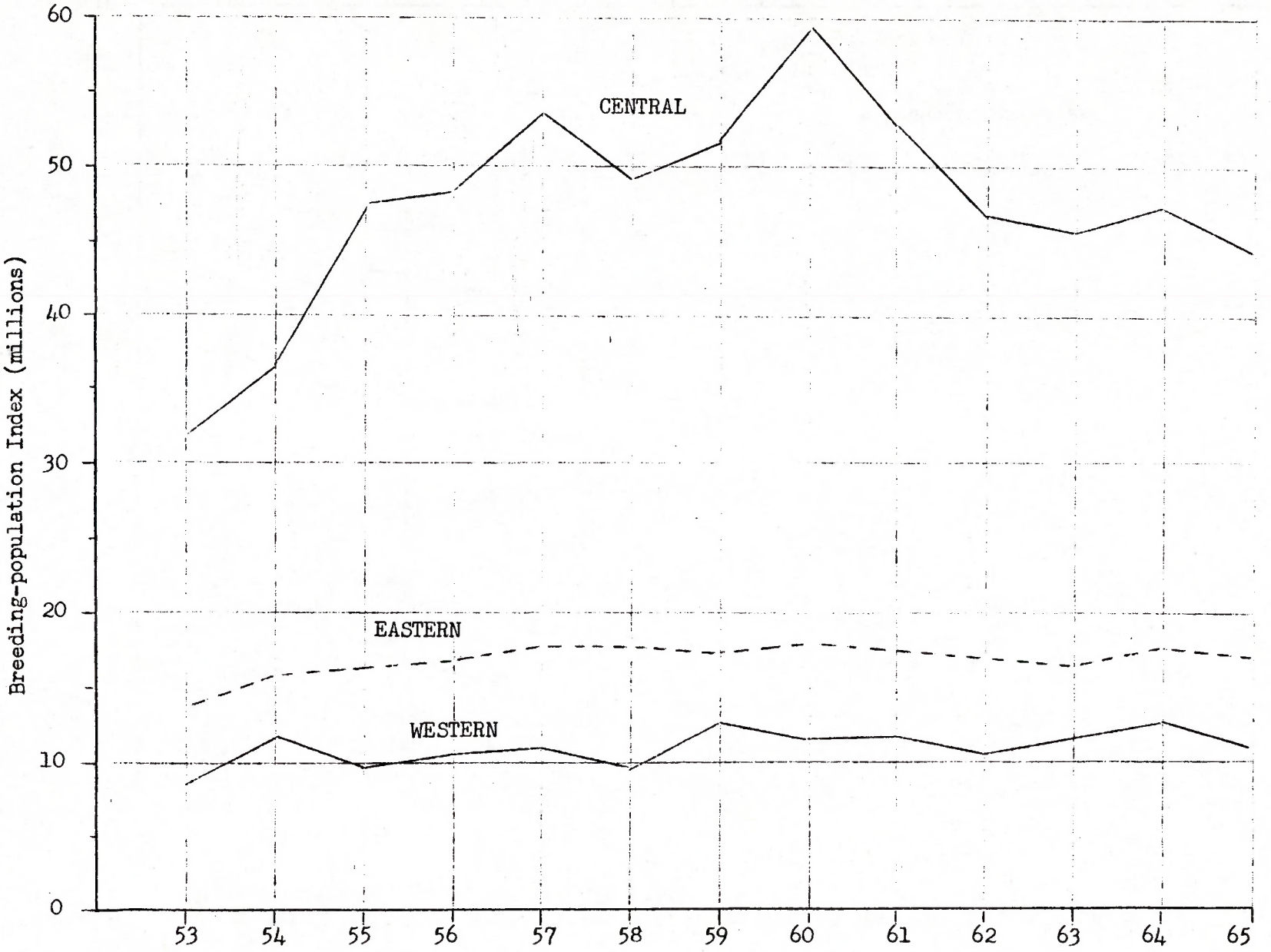
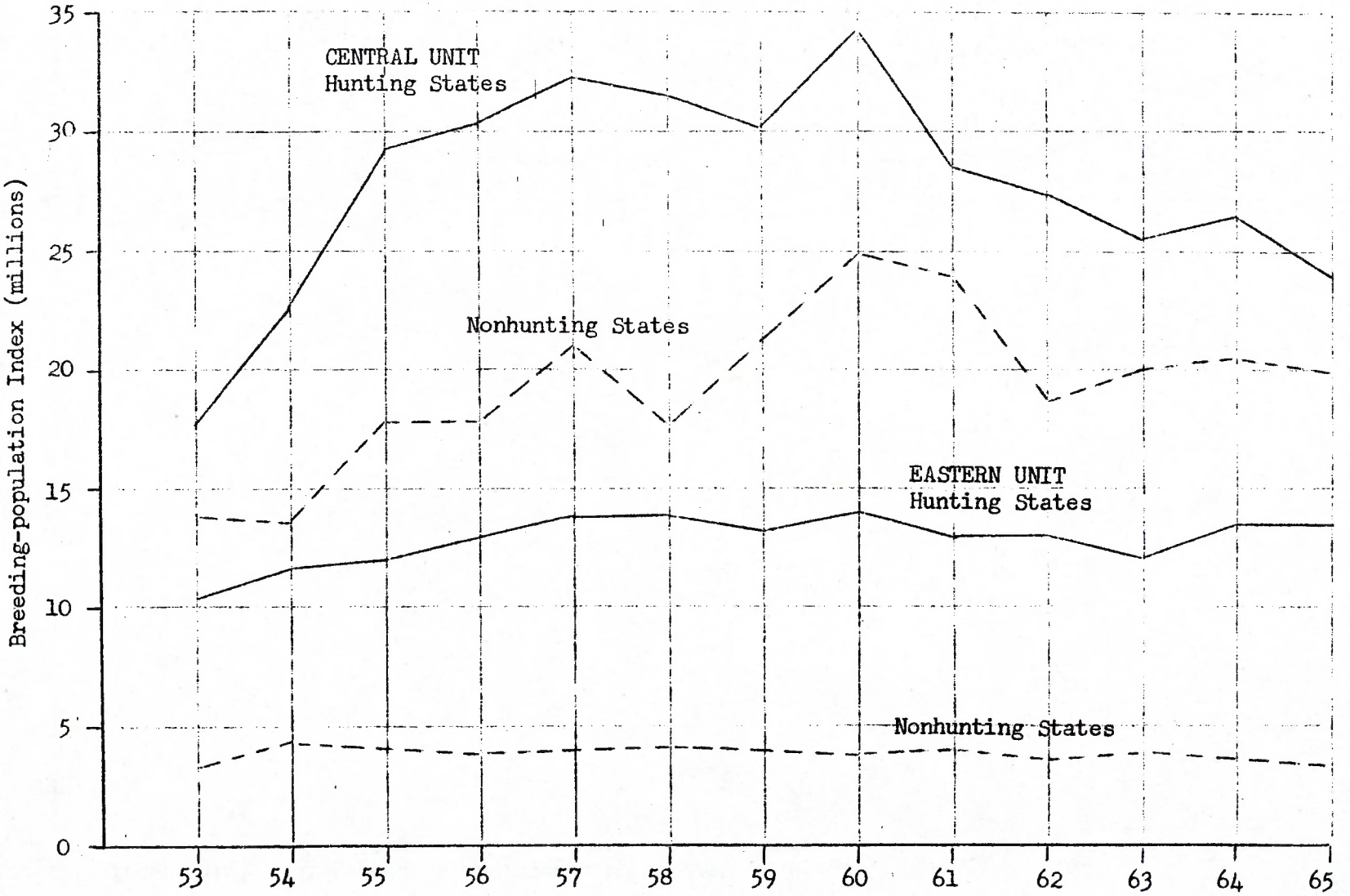


Figure 3. A Comparison of Trends in Breeding-population Indexes for Hunting and Nonhunting States within Management Units, 1953-1965



## THE STATUS OF LEGAL DOVE HUNTING IN THE MIDWEST

Dove hunting is legal in Colorado, Kansas, Missouri, Illinois and Kentucky but not in the other states belonging to the Association of Midwest Fish and Game Commissioners. In North Dakota, where dove hunting was legal in 1963 and 1964, the dove was protected by the 1965 Legislature. No immediate changes are anticipated in any of the other Association states.

DOVE BANDING ACTIVITIES

## RESULTS

Table 2 presents the numbers of birds banded during the two prescribed periods in 1963 and 1964 by hunting and nonhunting States in each management unit. The 1964-65 pre-season bandings are included and they are essentially complete, although a few banding schedules for that period may not yet have been submitted to the Bird Banding Laboratory. Recoveries were not tabulated because too few have been received to date to compute accurate recovery rates. Tables 3 and 4 show numbers of doves banded annually during 1964 and 1963 by sex and age classes.

Table 2. PRE- AND POST-SEASON BANDINGS FOR 1963 TO 1964

EASTERN MANAGEMENT UNIT

| | Area | 1962-63 Post-Season | 1963-64 Pre-Season | 1963-64 Post-Season | 1964-65 Pre-Season | Totals |
|---|---|---|---|---|---|---|
| Hunting States | Ala. | 364 | 181 | 483 | 411 | 1,439 |
| | Del. | 1 | 11 | 2 | 2 | 16 |
| | Fla. | 63 | 239 | 272 | 855 | 1,429 |
| | Ga. | 192 | 604 | 203 | 953 | 1,952 |
| | Ill. | 10 | 265 | 0 | 91 | 366 |
| | Ky. | 9 | 230 | 50 | 364 | 653 |
| | La. | 4 | 380 | 0 | 321 | 705 |
| | Md. | 197 | 815 | 233 | 496 | 1,741 |
| | Miss. | 10 | 6 | 223 | 273 | 512 |
| | N.C. | 13 | 106 | 0 | 266 | 385 |
| | Pa. | 82 | 87 | 2 | 112 | 283 |
| | R.I. | 0 | 9 | 0 | 0 | 9 |
| | S.C. | 52 | 218 | 49 | 1,113 | 1,449 |
| | Tenn. | 289 | 690 | 24 | 1,401 | 2,404 |
| | Va. | 5 | 2 | 846 | 1,267 | 2,120 |
| | W.Va. | 1 | 1 | 0 | 3 | 5 |
| | TOTAL | 1,292 | 3,844 | 2,387 | 7,945 | 15,468 |
| Non-Hunt. States | Conn. | 8 | 37 | 3 | 17 | 65 |
| | Ind. | 8 | 36 | 0 | 1 | 45 |
| | Maine | 0 | 0 | 0 | 0 | 0 |
| | Mass. | 30 | 187 | 0 | 0 | 217 |
| | Mich. | 36 | 18 | 0 | 7 | 61 |
| | N.H. | 0 | 0 | 0 | 1 | 1 |
| | N.J. | 88 | 25 | 1 | 20 | 134 |
| | N.Y. | 11 | 14 | 22 | 32 | 79 |
| | Ohio | 383 | 322 | 8 | 14 | 727 |
| | Vt. | 0 | 0 | 0 | 0 | 0 |
| | Wisc. | 1 | 58 | 0 | 71 | 130 |
| | TOTAL | 580* | 699** | 34 | 163 | 1,476 |
| | GRAND TOTAL | 1,872* | 4,543** | 2,421 | 8,108 | 16,944 |

Table 2 (cont.)

| | Area | 1962-63 Post-Season | 1963-64 Pre-Season | 1963-64 Post-Season | 1964-65 Pre-Season | Totals |
|---|---|---|---|---|---|---|
| CENTRAL MANAGEMENT UNIT | | | | | | |
| Hunt. States | Ark. | 0 | 86 | 2 | 0 | 88 |
| | Colo. | 0 | 6 | 0 | 272 | 278 |
| | Kans. | 0 | 708 | 0 | 390 | 1,098 |
| | Mo. | 14 | 676 | 2 | 753 | 1,445 |
| | N. Mex. | 0 | 2,146 | 0 | 1,242 | 3,388 |
| | Okla. | 3 | 58 | 0 | 0 | 61 |
| | Texas | 922 | 417 | 952 | 73 | 2,364 |
| | TOTAL | 939 | 4,097 | 956 | 2,730 | 8,722 |
| Non-Hunt. States | Iowa | 1 | 74 | 0 | 906 | 981 |
| | Minn. | 0 | 104 | 0 | 138 | 242 |
| | Mont. | 0 | 94 | 0 | 1 | 95 |
| | Nebr. | 0 | 115 | 0 | 102 | 217 |
| | N. Dak. | 0 | 210 | 0 | 104 | 314 |
| | S. Dak. | 0 | 26 | 0 | 1,605 | 1,631 |
| | Wyo. | 0 | 0 | 0 | 0 | 0 |
| | TOTAL | 1 | 625*** | 0 | 2,856 | 3,482 |
| | GRAND TOTAL | 940 | 4,722*** | 956 | 5,586 | 12,204 |
| WESTERN MGMT. UNIT | Ariz. | 164 | 2,237 | 1,293 | 2,588 | 6,282 |
| | Calif. | 35 | 265 | 797 | 3,382 | 4,479 |
| | Idaho | 0 | 212 | 0 | 2,645 | 2,857 |
| | Nev. | 0 | 152 | 0 | 1,924 | 2,076 |
| | Oreg. | 13 | 74 | 268 | 341 | 696 |
| | Utah | 0 | 891 | 0 | 2,223 | 3,114 |
| | Wash. | 0 | 403 | 0 | 2,005 | 2,408 |
| | TOTAL | 212 | 4,235**** | 2,358 | 15,108 | 21,913 |
| | U.S. TOTAL | 3,024* | 13,500 * | 5,735 | 28,802 | 51,061 |

*Including 15 Washington, D.C. bandings
** " 2 Ontario, Canada "
*** " 2 Saskatchewan "
**** " 1 British Columbia "

* Includes 2 Ontario, 2 Saskatchewan, and 1 British Columbia banding

Table 3. MOURNING DOVE BANDING SUMMARY - 1964

| Location | Immature | Locals | Adult | | | Total |
|---|---|---|---|---|---|---|
| | | | Male | Female | Unk. | |
| Alabama | 186 | 5 | 233 | 174 | 678 | 1,276 |
| Arizona | 1,646 | 7 | 847 | 1,167 | 1,809 | 5,476 |
| Arkansas | 1 | 0 | 2 | 1 | 10 | 14 |
| California | 2,329 | 2 | 1,059 | 738 | 53 | 4,181 |
| Colorado | 209 | 10 | 38 | 15 | 0 | 272 |
| Connecticut | 13 | 0 | 17 | 9 | 35 | 74 |
| Delaware | 1 | 0 | 3 | 0 | 0 | 4 |
| Florida | 935 | 0 | 311 | 169 | 88 | 1,503 |
| Georgia | 619 | 4 | 384 | 301 | 32 | 1,340 |
| Idaho | 1,195 | 99 | 862 | 399 | 91 | 2,646 |
| Illinois | 20 | 59 | 30 | 17 | 6 | 132 |
| Indiana | 0 | 10 | 0 | 0 | 1 | 11 |
| Iowa | 635 | 102 | 234 | 98 | 31 | 1,100 |
| Kansas | 79 | 297 | 28 | 17 | 1 | 422 |
| Kentucky | 202 | 22 | 225 | 99 | 144 | 692 |
| Louisiana | 155 | 0 | 167 | 49 | 29 | 400 |
| Maryland | 333 | 1 | 261 | 146 | 91 | 832 |
| Michigan | 3 | 23 | 0 | 0 | 5 | 31 |
| Minnesota | 64 | 0 | 51 | 19 | 4 | 138 |
| Mississippi | 236 | 0 | 322 | 131 | 1 | 690 |
| Missouri | 303 | 4 | 321 | 145 | 40 | 813 |
| Montana | 1 | 0 | 0 | 0 | 0 | 1 |
| Nebraska | 41 | 29 | 31 | 21 | 3 | 125 |
| Nevada | 1,057 | 0 | 926 | 512 | 76 | 2,571 |
| New Hampshire | 0 | 0 | 0 | 0 | 7 | 7 |
| New Jersey | 13 | 2 | 39 | 14 | 0 | 68 |
| New Mexico | 767 | 0 | 308 | 161 | 6 | 1,242 |
| New York | 133 | 1 | 58 | 49 | 30 | 271 |
| North Carolina | 212 | 2 | 36 | 12 | 25 | 287 |
| North Dakota | 22 | 44 | 34 | 15 | 2 | 117 |
| Ohio | 4 | 66 | 4 | 4 | 24 | 102 |
| Oregon | 191 | 4 | 201 | 154 | 65 | 615 |
| Pennsylvania | 76 | 23 | 18 | 10 | 11 | 138 |
| South Carolina | 736 | 0 | 219 | 156 | 72 | 1,183 |
| South Dakota | 760 | 108 | 509 | 235 | 0 | 1,612 |
| Tennessee | 1,223 | 43 | 131 | 106 | 344 | 1,847 |
| Texas | 22 | 65 | 2,884 | 2,008 | 41 | 5,020 |
| Utah | 763 | 103 | 1,009 | 652 | 281 | 2,808 |
| Virginia | 716 | 0 | 775 | 539 | 145 | 2,175 |
| Washington | 1,736 | 0 | 126 | 143 | 0 | 2,005 |
| West Virginia | 3 | 2 | 0 | 0 | 0 | 5 |
| Wisconsin | 14 | 4 | 30 | 17 | 8 | 73 |
| TOTALS | 17,654 | 1,141 | 12,733 | 8,502 | 4,289 | 44,319 |

Table 4. MOURNING DOVE BANDING SUMMARY - 1963

| Location | Immature | Locals | Adult | | | Total |
|---|---|---|---|---|---|---|
| | | | Male | Female | Unk. | |
| Alabama | 57 | 2 | 7 | 2 | 491 | 559 |
| Arizona | 1,705 | 85 | 634 | 566 | 109 | 3,099 |
| Arkansas | 68 | 31 | 0 | 1 | 3 | 103 |
| British Columbia | 0 | 0 | 0 | 0 | 1 | 1 |
| California | 93 | 93 | 34 | 34 | 122 | 376 |
| Colorado | 3 | 8 | 3 | 2 | 2 | 18 |
| Connecticut | 44 | 0 | 11 | 11 | 59 | 125 |
| Delaware | 5 | 0 | 18 | 4 | 0 | 27 |
| Dist. of Columbia | 0 | 0 | 0 | 0 | 25 | 25 |
| Florida | 329 | 27 | 44 | 29 | 173 | 602 |
| Georgia | 470 | 4 | 214 | 140 | 229 | 1,057 |
| Idaho | 43 | 41 | 16 | 28 | 84 | 212 |
| Illinois | 78 | 150 | 45 | 20 | 55 | 348 |
| Indiana | 2 | 116 | 5 | 4 | 60 | 187 |
| Iowa | 0 | 82 | 0 | 0 | 5 | 87 |
| Kansas | 18 | 700 | 1 | 3 | 74 | 796 |
| Kentucky | 121 | 225 | 0 | 0 | 39 | 385 |
| Louisiana | 321 | 20 | 126 | 43 | 27 | 537 |
| Maryland | 780 | 0 | 546 | 391 | 172 | 1,889 |
| Massachusetts | 73 | 66 | 68 | 61 | 28 | 296 |
| Michigan | 8 | 93 | 25 | 19 | 78 | 223 |
| Minnesota | 36 | 52 | 7 | 2 | 22 | 119 |
| Mississippi | 0 | 0 | 10 | 7 | 3 | 20 |
| Missouri | 355 | 17 | 211 | 143 | 89 | 815 |
| Montana | 48 | 23 | 15 | 7 | 3 | 96 |
| Nebraska | 21 | 98 | 9 | 2 | 15 | 145 |
| Nevada | 242 | 0 | 131 | 62 | 221 | 656 |
| New Jersey | 20 | 1 | 86 | 47 | 26 | 180 |
| New Mexico | 1,056 | 31 | 690 | 358 | 11 | 2,146 |
| New York | 59 | 5 | 64 | 36 | 36 | 200 |
| North Carolina | 78 | 1 | 8 | 1 | 42 | 130 |
| North Dakota | 6 | 230 | 0 | 0 | 5 | 241 |
| Ohio | 82 | 618 | 81 | 69 | 349 | 1,119 |
| Oklahoma | 0 | 55 | 6 | 1 | 11 | 73 |
| Ontario | 0 | 3 | 0 | 0 | 1 | 4 |
| Oregon | 52 | 4 | 21 | 21 | 10 | 108 |
| Pennsylvania | 57 | 13 | 59 | 32 | 196 | 357 |
| Rhode Island | 4 | 11 | 1 | 0 | 3 | 19 |
| Saskatchewan | 0 | 2 | 0 | 0 | 0 | 2 |
| South Carolina | 161 | 6 | 125 | 56 | 52 | 400 |
| South Dakota | 7 | 24 | 1 | 1 | 4 | 37 |
| Tennessee | 532 | 93 | 102 | 51 | 821 | 1,599 |
| Texas | 128 | 216 | 1,144 | 737 | 144 | 2,369 |
| Utah | 227 | 1 | 33 | 42 | 943 | 1,246 |
| Virginia | 5 | 0 | 1 | 0 | 28 | 34 |
| Washington | 323 | 16 | 19 | 9 | 64 | 431 |
| West Virginia | 0 | 0 | 0 | 0 | 7 | 7 |
| Wisconsin | 7 | 18 | 9 | 2 | 35 | 71 |
| TOTALS | 7,724 | 3,281 | 4,630 | 3,044 | 4,977 | 23,656 |

## SPECIAL DOVE STUDIES

Studies on the mourning dove in the midwest are extremely limited and in most states only call-count routes and token banding are done. At the Missouri Coop. Wildlife Research Unit social hierarchies and the breeding behavior of penned doves are being investigated. A joint research project between the Coop. Unit and William Jewel College on dove migratory behavior is also under way.

In Colorado three special studies are being conducted.

A. Nestling doves will be banded in the vicinity of preseason bait trapping sites and aged as close as possible to the day that they were hatched. During July bait trapping of flying doves was initiated with the hope of obtaining a sizeable sample of retrapped birds banded as nestlings. This will permit an evaluation of the wing aging methods in Colorado and the assembly of a table of ages of immature doves according to wing molt pattern data.

B. Wing molt data will be collected from all immatures captured and the data will be employed in computing and charting periods and peaks of hatching.

C. Bag checks will be made in the field to determine age and sex ratios in various habitat types. Wings from immatures will be examined to determine what portion of immatures harvested are from first and second clutches. This will permit evaluation of emigration of young from nesting areas and immigration into other types of habitat. Estimated periods and peaks of hatching of each clutch group will also be computed from wing molt data and compared with hatching activity data from birds captured during the banding period. The molt data will also be used to estimate the percent of young-of-the-year doves on the wing by September 1.

# DOVE HUNTING POTENTIAL IN THE MIDWEST

The biological soundness of harvesting mourning doves is well established among conservationists. But perhaps the economic aspects of legal dove seasons have not been as closely examined as the available dove population data. In the hope of assisting conservation administrators in their efforts to secure dove hunting through legislation, a few dollars and cents figures have been rounded up and are presented here for quick reference. It should be stressed that all of the figures are approximate and are intended only to serve as guides.

The license sales listed are averages from a recent three year period. The number of dove hunters shown in the hunting states are, in some cases at least, probably reasonably accurate and based on survey information. The estimated number of hunters who would hunt doves if there were a legal season are pure speculation, but based on available data would likely amount to 10-20% of the licensed small game hunters. The 1960 National Survey of Fishing and Hunting (U.S. Bureau of Sport Fisheries and Wildlife) showed (p. 59) that 19.7% and 20.8% of all small game hunters in the South and West respectively hunted mourning doves.

Dove hunters would spend money over and above that presently being spent on hunting recreation. Shells go fast on a dove hunt and a couple boxes costing about $3.50 each would be near average depending on load and gauge. Gas and oil would take a dollar or two for a twenty or thirty mile trip. A meal and some post-hunt refreshment are common and would take another two dollars. Add to these basics items such as sun glasses ($2.00), a billed cap ($1.00), a lightweight hunting vest ($5.00), a couple candy bars and cigarettes for the field ($0.50) and perhaps a moderate privilege fee and the average expenditure for a one day hunt is pretty close to $10.00. Some hunts also require overnight accommodations (and extra meals), maybe something to take home to the kids, plus incidentals like sunburn lotion or phone calls. An average expenditure of $10.00 per dove hunter per season is probably conservative, and doesn't even include the cost of a license, gun, retriever or guide.

Those two boxes of shells mentioned earlier represent about $0.70 per dove hunter in Pittman-Robertson revenue. In a state with 50,000 dove hunters that means an extra $35,000.00, less administrative costs, enough for some quality dove management and research - or just banding.

And that's to say nothing of the half-million dollars spent at the local businesses each year. If dove hunting were legal.

Small game license sales and dove hunters in the midwest.

| | Approximate annual small-game license sales | Estimated number of dove hunters | % of license sales |
|---|---|---|---|
| Hunting States | | | |
| Colorado | 111,000 | 21,000 | 19% |
| Illinois | 478,000 | 97,000 | 20% |
| Kansas | 198,000 | 57,000 | 29% |
| Missouri | 350,000 | 25,000 | 7% |
| North Dakota* | 65,000 | 13,000 | 20% |
| Average proportion that hunted doves - - - - - - - - - - - - | | | 18% |
| Non-hunting States | | | |
| Iowa | 307,000 | 100,000** | 33% |
| Michigan | 577,000 | 100,000** | 17% |
| Minnesota | 327,000 | 33,000** | 10% |
| Nebraska | - | 50,000** | - |
| Ohio | 630,000 | 63,000** | 10% |
| South Dakota | 173,000 | 17,000** | 10% |
| Wisconsin | 375,000 | 37,000** | 10% |

*Had dove seasons in 1963 and 1964 only
**Estimated number of hunters that would hunt doves if the season were opened in that state.

## REPORT OF THE TREASURER FOR THE CALENDAR YEAR 1965

On February 3, 1965 I received the funds of the Association from the past Secretary-Treasurer Walter E. Scott of Wisconsin, in one cheque in the amount of $1,957.81 (U.S. funds). On February 16 I deposited these funds in the Bank of Montreal in two accounts - one being a savings account to which $1,900.00 was depo ted, and the other a personal checking account and $199.75 was deposited to this account. Premium at 7¾ per cent on U.S. funds amounted to $141.94.

The Treasurer's record book contains a detailed balance of receipts and disbursements, which are backed up by receipted bills and similar reference material which will be transmitted to the new Treasurer with this report. These details are not reported here except for the following summation:

Income Sources:

| | | |
|---|---|---|
| 16 member dues at $35.00 each | | $560.00 |
| 104 registration fees at $2.00 each | | 208.00 |
| * 65 banquet dinners at $4.00 each | $260. | |
| * 71 banquet dinners at $4.50 each | 319.50 | 579.50 |
| * 65 tour and lunch tickets at $1.00 each | 65. | |
| * 39 tour and lunch tickets at $2.00 each | 78. | 143.00 |
| Premium on U.S. funds received | | 75.83 |
| Interest on Savings Account | | ? |
| Approximate total income ..... | | $1,566.33 |

Major Expenses:

| | | |
|---|---|---|
| 140 dinners at $3.95 each plus tax and gratuities (4 guests) | $652.57 | |
| Coffee - 4 coffee breaks | 118.17 | |
| 114 luncheons at $1.45 each plus tax and gratuities (10 guests) | 195.26 | |
| Bus trip and tour | 112.00 | |
| Room rental (Westbury Hotel) | 136.00 | |
| Recording and typing of Proceedings | 276.45 | |
| Binding of Proceedings | 175.00 | (Approximate) |
| Checking Aocount Costs | ? | |
| Approximate total expenses..... | $1,565.45 | |

* The total registration fee, including registration, banquet, tour and luncheon, was $7.00. If purchased separately $4.50 was charged for the banquet and $2.00 each for the tour and registration. Hence, the discrepancy in charges made.

The Association's books should be balanced, all records organized and the Treasurer's book brought up-to-date for shipment to Treasurer Polson by the end of March, 1966.

Respectfully submitted,

A. Klassen
for D.N. Omand,
Secretary-Treasurer, 1965.

Dated: February 11, 1966.

APPENDIX VI

The following letter was sent to all Member States and Provinces following a meeting of the Directors of the Association of Midwest Fish and Game Commissioners, in Lansing, Michigan, during the time of the Midwest Fish and Wildlife Conference on December 7, 1965:

"Ontario Department of Lands and Forest:
"Toronto, 5, Ontario, Canada,
"December 9, 1965

"TO ALL MEMBERS OF THE ASSOCIATION OF MIDWEST FISH AND GAME COMMISSIONERS:

"A meeting of the Directors of the Association of Midwest Fish and Game Commissioners was held at Lansing in connection with the Midwest Fish and Wildlife Conference at 3:30 p.m., on Tuesday, December 7th. The following were in attendance.

| | |
|---|---|
| Daniel C. Armbruster | Chief, Ohio Division of Wildlife |
| Wm. B. Barnes | Indiana Dept. of Natural Resources, Fish & Game |
| Wilbur Boldt | Deputy Commissioner, North Dakota Game & Fish Dept. |
| Joe Bruna | Kentucky Dept. of Fish & Wildlife Resources |
| Clayton Bushong | Dept. of Game, Fish & Parks, South Dakota |
| C.H.D. Clarke | Ontario Dept. of Lands and Forests |
| Robert R. Elliott | Asst. Director, Colorado Game, Fish & Parks |
| Thomas R. Evans | Illinois Dept. of Conservation |
| C.D. Harris | Michigan Dept. of Conservation |
| Paul D. Kline | Asst. Supt., Game, Iowa State Conservation Comm. |
| George C. Moore | Director, Kansas Forestry, Fish & Game Comm. |
| Edw. Schneberger | Wisconsin Dept. of Conservation |
| Dale Whitesell | Ducks Unlimited, Chicago |

"It was recognized that several of the more senior directors were unable to attend because of urgent business concerning the International Association and this Association in Washington. Questions relating to the acceptance of wildlife benefits in land retirement from agricultural crops, the status of upland game in reservoir and river basin programs, and similar matters were deferred because of the discussions going on in Washington.

"Mr. Armbruster circulated a document relating to a judicial opinion on the question of wildlife management on lands administered by the United States Forest Service. The delegates were able to compare notes on several programs and discuss experiences during the recent special teal season and the blackbird depredation problem.

"The retiring President, C.H.D. Clarke, announced that the Proceedings of the July meeting were in an advanced state of preparation and that stationery and records would be transmitted as soon as possible to the incoming President. Funds would also be transferred as soon as all the States had paid their dues. In view of the presence of representatives of the only States that had not paid as yet, it is anticipated that this will be possible in a very short time.

"Further communications should be addressed to the incoming President: Mr. George C. Moore, Director, Kansas Forestry, Fish & Game Commission, Pratt, Kansas; and Secretary-Treasurer: Mr. John D. Polson, Chief, Information-Education, Kansas Forestry, Fish and Game Commission, Pratt, Kansas.

"I should like to take this opportunity of thanking all members for their cooperation, and look forward to seeing you at the annual meeting, which President George Moore has called for July 12, 13 and 14 in Wichita, Kansas.

(Signed)

"C.H.D. Clarke,
"Outgoing President."

CHDC:AK

ASSOCIATION OF MIDWEST FISH AND GAME COMMISSIONERS

COMMITTEES FOR 1965

## Program

Thomas R. Evans, Chairman
William Barnes
J.D. Roseborough
Laurence R. Jahn
Russell Stuart
Edw. Schneberger

## Resolutions

Wayne H. Olson, Chairman
G.W. Malaher
Wilbur Boldt
William E. Towell
Melvin O. Steen

## Auditing

Woodrow Fleming, Chairman
Thomas R. Evans

## Nominations

Woodrow Fleming, Chairman
Walter E. Scott
Earl T. Rose

## SPECIAL COMMITTEES

### Federal-State Relations

Woodrow Fleming, Chairman
Larry R. Gale
Gordon Charles
Melvin O. Steen
William T. Lodge
James T. Shields

### Legislation

Ralph A. MacMullan, Chairman
Wayne H. Olson
Harry R. Woodward
William E. Towell
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Everett B. Speaker

### Federal Aid

H.D. Ruhl, Chairman
Woodrow Fleming
Russell Stuart
G.E. Sprecher
Minor E. Clark

### Federal Farm Program

Walter Fillmore, Chairman (resigned)
Dale E. Whitesell (resigned)
Frank King
William Brabham
Robert L. Morgan

### Wetlands

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W.A. Benson
G.W. Malaher
David B. Vesall
Earl T. Rose