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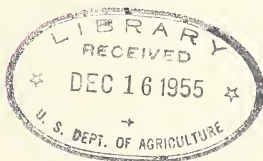
October, 1936

SOME WILDLIFE - DOMESTIC STOCK
CONSIDERATIONS AND SUGGESTIONS FOR

1. EASTERN REGIONS (7,8,9)
2. WESTERN REGIONS (1,2,3,4,5,6,10)

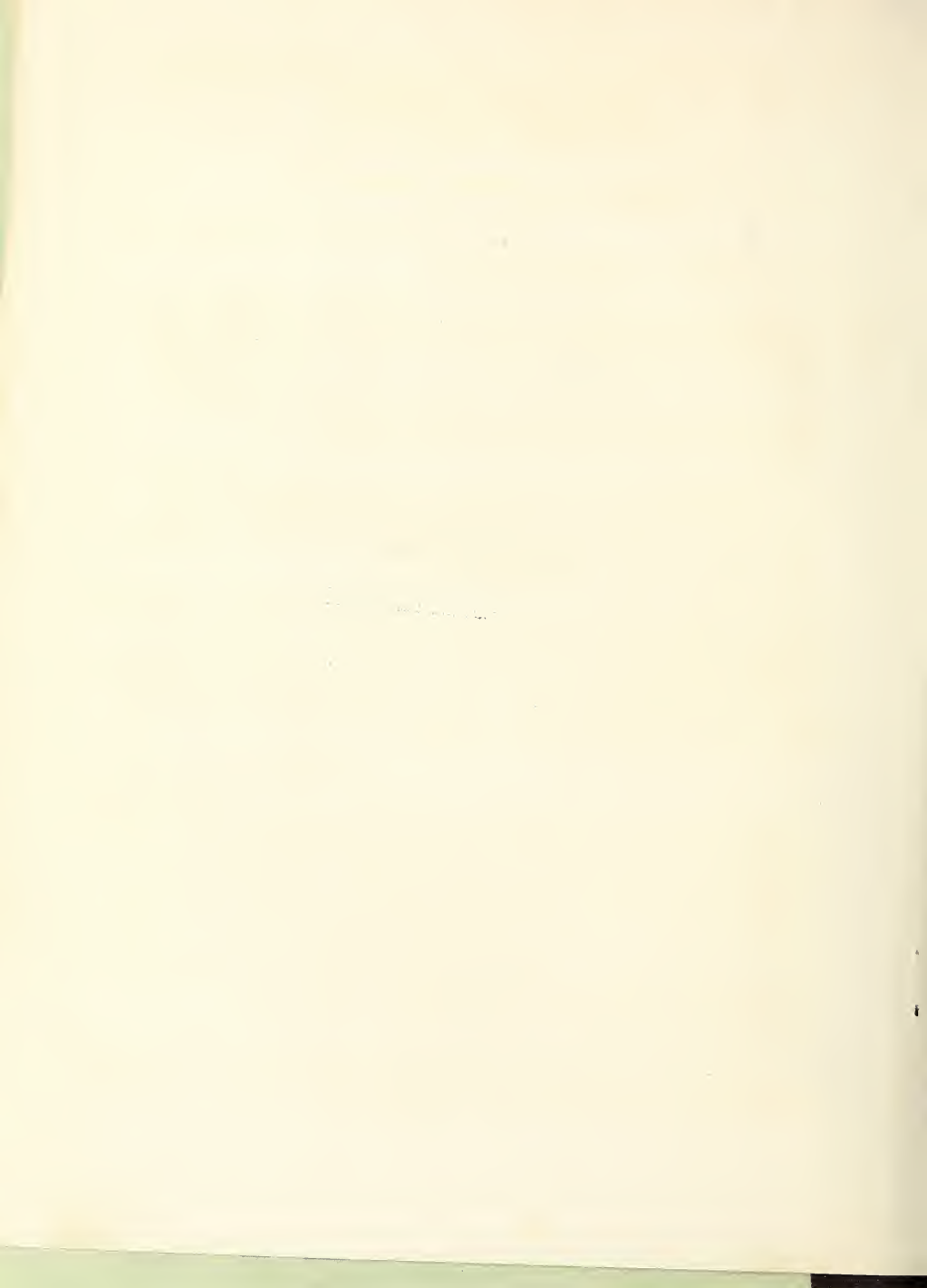
WITH ILLUSTRATIVE SUMMARY
DATA BY STATES OR REGIONS

October
1936



JOHN H. HATTON

THE EASTERN REGIONS



October 13, 1936.

Wildlife Policies in Relation to
The Distribution Study and Program

Memorandum for Mr. Dutton and Dr. Shantz

The Regional Foresters in their 1935 conference of November 18 to November 23 adopted the following policy:

"The Forest Service will recognize and define the true place of wildlife in the National Forests, and will work progressively and aggressively to create the physical conditions and establish the principles of management essential to maintain appropriate numbers of all suitable species of game animals within each region and/or administrative unit. To that end a permanent technical personnel will be developed and specific plans for wildlife formulated as rapidly as controlling circumstances will permit.

"In the execution of progress and plans of wildlife management every effort will be made to cooperate with and through State and other local agencies but the legal powers of the Federal Government will be invoked (only) when no other course of action adequately will safeguard the public interest."

The above pronouncement defines the broad objective for giving wildlife due recognition among National Forest resources and uses and also prescribes a policy for approaching the objective as it relates to cooperative administration. Until experience may indicate something different or better the stated objectives furnish an adequate foundation, it seems to me, upon which to carry on current administration adjusted to broad localities and more local situations.

While wildlife considerations were not prominently expressed in the earlier years of the National Forest movement, we could not know its principal author, Theodore Roosevelt, and not be sure he had in mind wildlife as well as other considerations in his conservation ideals and program. The subject became more audible during the period about 1912-1916, and attained special prominence beginning about 1920. Notwithstanding occasional expressions to the contrary it seems to me the Forest Service has led and anticipated rather than trailed or waited for problems to break in seeking to give increasingly more attention to wildlife considerations and opportunities in their relation to other resources and uses. Accomplishment has been hampered for various reasons many of which were apart from the Service. The Service should continue progressively to take these advanced positions.

Within the Regional Foresters' declaration at the beginning of this discussion we are now ready to chart the wildlife course more definitely as it relates to domestic stock - wildlife priorities, which are among the

(Over)

main considerations in laying down a program of National Forest uses. Recreation may be considered more or less connected with wildlife on areas pertinent to both wildlife and recreation.

First, two broad territorial divisions are suggested:

1. The Eastern States as comprised in Regions 7, 8 and 9.
2. The so-called western States.

The Eastern States

For the eastern States I would give wildlife considerations general precedence over the encouragement of new domestic stock uses on any broad scale. This broad conclusion is approached through the following factors and considerations:

- (1) The character of National Forest lands and purchase areas in the States comprised in these regions with some exceptions are adapted to wildlife on a year-round basis.
- (2) The lands have been purchased because the history of their settlement and occupation has given them priority for forestry, watershed and related purposes.
- (3) We have in this general surrounding territory large urban as well as widespread agricultural populations which should have reasonably accessible outdoor facilities, and areas selected for forestry purposes should contribute as far as may be consistent to these intimate human values. Immense areas as in the Lake and some other States are of low or little value for domestic stock uses and therefore are not in demand as a rule for grazing. Efforts to use them for livestock in emergency drouth periods practically failed which should have been a fair test of their desirability.
- (4) Domestic stock uses have been small. In 1935, 389 pay permits were issued in 12 of 18 of these States having forest or purchase areas for 3,668 cattle, 16 horses and 152 swine; and for sheep and goats 100 permits for 2,345 sheep and 10 goats, an average of less than 10 head per permit in the C&H and swine class, and about 23-1/2 head per permit in the S&G class.
- (5) Free grazing by 3,043 owners in 14 of these States totalled 8,731 cattle, 261 horses, and 4,352 swine; and 11 owners grazed 63 sheep and 100 goats. Combining both paid and free grazing and both classes of stock we have an average of less than 5 head per recorded owner. The total area of the National Forests in Regions 7, 8 and 9 (1935 area table) was 12,122,238 acres on which were grazed, according

to the free and pay records, a total of 17,043 head of domestic stock, an average of 699 acres for each cow, horse, hog, sheep or goat. These records indicate the small adaptability and demand for domestic stock uses. The figures do not include quite a large number of stock now running on certain areas and not recorded, but which will come into the picture such as on the newer purchase areas in Missouri and other of the middle west States. Such areas should be thoroughly invoiced as to local social and economic needs and perhaps a special policy within the broad policy adopted for them.

- (6) Region 9 (1935 data) shows 450 pay stock all but 10 head in Wisconsin, and no open grazing excepting in Missouri. On the other hand, the States comprising the Region are estimated to have:

6,890,000 horses and mules
30,568,000 cows and calves
24,537,000 hogs and pigs
11,114,000 sheep and lambs

Apparently these States are not dependent upon National Forest areas for livestock grazing excepting in some of the newer purchase areas as in Missouri where we get into general regions better adapted to agricultural pursuits. But in such sections it would be well to consider whether the social and other advantages of local people could be better served by these new National Forest areas in other ways, and considering them in relation to the vastly greater and more important agricultural areas in these States better adapted to agricultural pursuits. In other words, we are giving a specialized forestry status to areas selected where they can best serve those purposes and not selected to revive or install agricultural or new domestic stock communities. There are plenty of other better lands for such purposes.

It is realized that wildlife uses are more difficult to control than domestic stock uses, but I am anticipating that wildlife planning, objectives and control will anticipate any problems that increased game numbers might induce. In the general policy suggested I am considering the vastly greater social contributions that the protection, development and forestry uses of these areas in Regions 7, 8 and 9, selected and set apart some of them after hundreds of years of other, we might say, unsuccessful permanent uses, will make. There will be many other ways to contribute to the welfare of local populations who happen to reside within or adjacent to these areas. Wildlife considerations will probably do as much or more for them anyway and at the same time contribute much to large population centers and the generally more productive agricultural areas within the States concerned.

It takes only a brief look at the wildlife reports of such State conservation departments as New York and Pennsylvania to visualize the tremendous importance of wildlife considerations in these States on areas adaptable to wildlife.

Notes on Region Seven National Forest and Purchase Areas

Kentucky

No present game. Domestic stock use the 355,224 acres at present in National Forests of which 50,000 acres are domestic stock winter range. Only one percent of Kentucky's livestock investment applicable to National Forests and comparative income is thus negligible from this source. Winter and summer ranges plentiful for large herds of big game. Principal deterrent is lack of law enforcement.

Maine

Forest areas year-round range for small numbers of big game present (1.5 percent bear, .3 percent deer and .2 percent of moose in State.) Use and income from domestic stock negligible. Wildlife one of the largest factors in attracting Maine's \$100,000,000, tourist business which constitutes a large percentage of total income in many small communities. See New Hampshire comments.

New Hampshire

Bear on New Hampshire areas which are year-round except for a few moose constitute 10 percent of bear, 18 percent deer, and 15 percent of moose in State. Only 400 acres of 664,300 used by domestic stock or .1 of one percent of \$74,000,000 livestock industry. Areas understocked with wildlife species. There is a definite relation between human and game populations. Sentiment favorable to game which brings in \$6,000,000 in expenditures of sportsmen.

Pennsylvania

Ten percent of bear and ten percent of deer in State on about 382,000 acres of National Forest lands. About 40,000 deer on Forest in 1935. Domestic stock use 3,000 acres in summer which is negligible - less than .1 of one percent of State's investment of some \$510,000,000 in stock, ranches and pastures. Allegheny Forest near several very large manufacturing centers and there is large demand on all forms of outdoor recreation. Deer do heavy damage to young Forests. The problem in Pennsylvania appears to be one of control of game numbers to preserve habitat - not one of expansion.

Vermont

Deer on Green Mountain National Forest area of 162,000 acres constitute ten percent of State's numbers. Area more than 50 percent year-long game range. No domestic stock uses, at least very negligible. Recreation business ranks third in State's industries.

Virginia

Bear and deer on National Forests constitute about one-fifth of State total. 8,000 acres of about 650,000 used by domestic stock in summer; 1000 acres in winter. Livestock business on Forests .002 of one percent of total State valuation of some \$141,000,000, therefore negligible. Game areas decidedly understocked generally. Hunting centered mostly in grouse and turkeys. Numerous sportsmen's clubs. Surrounding communities derive large portion of annual revenue from recreation. Gratifying results are being obtained on the Big Levels wildlife management area. Local stockmen interested and cooperative. Wildlife influences a profound influence upon citizens of the State.

West Virginia

Bear in Monongahola constitute 19.2 percent and deer 23 percent of these species in State. Area used yearlong. Domestic stock on George Washington area constitute .134 percent of State income. See Virginia comments. Deer range about one-tenth stocked. Public sentiment favorable to protecting (refuge system) of all species except bear. President Roosevelt commented most favorably on wildlife importance at the Forest festival, Elkins, West Virginia, October 1, 1936.

Notes on Region Eight National Forests and Purchase Units

Alabama

Estimated 53,000 deer and 1,000 bear in State. Percentage on Forests 3.76 on year-round range. Fifteen thousand acres of Government land used by domestic stock, 175,000 in all including private. 10,000 used in winter, 125,000 in all within external boundaries of 1,621,551 gross acres. No legitimate commercial grazing on National Forests. The total income in State is \$36,208,000 on a State livestock-land investment estimated at about \$508,000,000. Depression increased importance of wildlife for many local residents as well as to those within Forest boundaries. Tax observance of game laws. Game understocking pronounced.

Arkansas

Eighteen percent of State's big game on National Forests which are year-round range. Ninety percent of acreage used by domestic stock in summer and 70 percent in winter in common with wildlife. Nine Federal game preserves with 66,984 total acres having a deer capacity of 1340. Percentage of National Forest stock on Ouachita to State whole 3.4. Ouachita shows 24 acres per head of domestic stock; Arkansas 13 acres per head. Principal values of wildlife are economic to local communities. A refuge program of limited extent being initiated primarily as educational and a forerunner toward final objective.

Florida

About 8900 (18 percent) white-tailed deer in the four divisions of the Forest and-86 (6 percent) black bear, as against 50,000 and 1,500 respectively for the State as a whole. Ranges are yearlong, but there is a noticeable shift of deer from National Forests during winter. State livestock industry including land established at an investment of \$75,000,000. Income on this from National Forests less than one percent. No conflicts between domestic stock and game from stockmen's standpoint. No cases of overstocking or range depletion by game in the entire State.

Georgia

Forests are year-round range for 354 deer, 650 turkey and 4 bear -- three percent of State's deer, one percent of turkey and negligible percent of bear. No use of Forest lands by domestic stock in winter except a few semi-wild trespass hogs. Domestic stock use about one-half of National Forest area in summer. About 40 percent more winter range would be required if carrying capacity of summer range is considered for game. A total of \$501,134,190 invested in livestock industry in State less than 5 percent of which applies to areas within National Forests from which less than one percent of the livestock income is obtained. Presence of wildlife very beneficial in the social and economic set-up of communities. A general program of wildlife development is planned through refuge systems, introductions, etc., on a wildlife management basis.

Louisiam

National Forest with gross acreage of 877,066 is year-round game range. State investment in livestock industry of \$92,978,000 applicable to National Forests, two percent. Therefore, percent of income from forests practically negligible. Recreational value of hunting important, but economic set-up of communities said not to be affected by presence or absence of game.

Mississippi

Wildlife in Mississippi in a very depleted state compared to that which once existed. About 5 percent of 5,000 deer in the State range on National Forest land winter and summer. Domestic stock uses all National Forest land excepting fence-protected plantations. Game and stock use the same lands throughout the year. Of 6,548,000 acres of pasture and range in the State about 15 percent is National Forest land. Forest permits not yet issued and percentage of income from industry not known. Among State industries cotton ranks 1, corn 2, and livestock 3. Land available for wildlife in Mississippi is 90 percent understocked and the outlook for wildlife development is exceptionally good.

North Carolina

Fifty percent of the deer, 50 percent of the bear and 100 percent of "Russian Wild Hog" of the total in State are on National Forests summer and winter. Fifty percent of a gross area of 3,588,123 acres is used by

a very small domestic stock population which is practically negligible compared to a State industry of \$69,432,056. State livestock income on the Pisgah, for instance, is given as .1 of one percent. Sportsmen spend \$5,000,000 a year in State and wildlife means many dollars to the tourist trade in mountain regions. It has long since been demonstrated that stock raising in Southern Appalachians is unwarranted and there is only a small number of cattle on National Forest areas.

Oklahoma

Forests are summer and winter game ranges and carry about ten percent of State deer population. Domestic stock use 20 percent of area in summer and 40 percent in winter with a weighted average of 1.5 percent of the State livestock industry investments. Illegal kill of game large representing 60-75 percent of the meat diet of the hill people. Increase in game protection needed. Stockmen advocate 100 percent game protection.

South Carolina

Six-tenths of one percent of South Carolina's deer population of 200,000 and bear population of 10,000 are said to occur in the National Forests which are summer and winter range. National Forests comprise about seven percent of State's gross area. Approximately three percent of the State's stock industry applies to National Forests, also three percent of income from the industry represented by \$95,328,000 annually. Sportsmen spend about \$3,751,000 per year within the State. Very few stock are at present grazed under paid permit and free grazing if not controlled in a reasonable period would reduce or deplete game food. Steps in control have been initiated through fencing under ERA program.

Tennessee

Approximately 40 percent of big game on Forests in relation to total in State which is year-round range. About 167,000 acres of 500,000 used by domestic stock in summer season. About 100 Russian hogs, 455 deer and 10 bear represent present big game population. Portion of State livestock industry applicable to National Forest areas stated as "infinitesimal", and the income from it of minor importance.

Estimated that 3 to 4 million dollars spent annually by sportsmen. State has 63 federated sportsmen's associations and sincere movement to better State game conditions is on. Fish and game resources have reached all time low.

Texas

Domestic stock and game use the 630,000 acres in National Forest in summer and stock use 100,000 acres in winter. Game none in winter, but National Forest domestic stock uses compared to total livestock investment in State of \$500,000,000 infinitesimal. National Forests still in formative stage and developments should be tied to specific localities and people when possible.

Notes on Region Nine National Forests
and Purchase Areas

Illinois

Big game now almost absent - only 13 present. Yearlong range of whitetail deer formerly very abundant. Nine deer introduced in So. Illinois winter 1935-6. Conditions favorable for re-introduction. State has dense human populations.

Iowa

Present condition one of complete wildlife depletion, but environmental factors suitable to large development, and on certain purchase areas white-tailed deer could be introduced and would do very well. Recreation primary factor in Iowa areas.

Missouri

Recreational opportunities afforded by fish and game tremendous. Large centers of population; great quantities of money spent in local forest communities enjoying recreational opportunities of wildlife. More refuges indicated. 6,000 (.2 percent of State population) so-called "old squatters" in widely dispersed Clark National Forest of 1,800,000 acres. Originally overstocked with wildlife. No present conflicts between domestic stock and wildlife. Observance of game laws generally lax. Special refuges for wildlife indicated rather than general areas as an initial measure when human populations are widely distributed within areas.

North Dakota

Six thousand deer in State. 210 preserves in 250,000 acres. \$36,916.90 in revenue from game and fish licenses. Cost per deer \$40.00. Understocking of deer being only one deer per 1000 acres. Good supply of deer food. Public sentiment favorable to wildlife.

Ohio - No information available.

Michigan

Year-round range with a present population of 110,175 deer, 10 elk, 450 bear and 19 moose. Domestic stock use in summer 140,800 acres out of some 3,000,000 acres. People interested in wildlife which in places is depleting winter game range, which seems to be the principal limiting factor.

Minnesota

Game use areas year-round. Only 45,360 acres of our 4,000,000 used by domestic stock. Big game populations estimated at 84,078 deer, 1150 moose, and 597 bear. The pursuit of fish-game by sportsmen brings great wealth into the State. Many local communities rely almost entirely on the tourist business. Recreation industry second largest in State. Problems

principally Indian and law enforcement to State total 3.4 percent. Revenues in State from fishing and hunting \$106,000; from sportsmen's expenditures, \$4,000,000. Year-round climate favorable to wildlife which may be developed to many times its present status. Objectives are sustained yield. Refuges are educational and considered simply a forerunner of final objective.

Wisconsin

Approximately 95 percent of 101,980 deer and 300 bear use National Forest areas year round. Uses by domestic stock insignificant. Wildlife one of the main attractions to recreationists. Hunting licenses bring a large revenue to the State. Many outside visitors, especially from Illinois, Indiana and Ohio. Some critical overpopulation game areas.

Wildlife specialists formerly proposed a refuge plan which in its biological phases has been "tempered by an unruly amount of human nature". New progress being made toward establishment of refuges. Approaching food shortage for game must be watched and anticipated by constructive game management plans.

THE WESTERN REGIONS

The Western Regions

(1, 2, 3, 4, 5, 6 and 10)

For about twenty years thought has been given increasingly to the relative place of wildlife in the Western regions. Definite programs of field observations have been set up and large volumes of data have been accumulated and revised from year to year now for many years, particularly during the past 15 to 20 years. Game plans have been conceived and in some cases developed from these data independently and in cooperation with different agencies. There is a large and, in many cases, untouched field, however, before the Service in working out objectives cooperatively. The full possibilities have not been practically determined. They await experience and, no doubt, many discouragements will be added to those so far recorded. But the accumulation of fundamental data and their thoughtful analysis and presentation should add to the increasing instances of encouragement.

The idea of correlations of uses has been especially prominent with western Forest officers, and domestic stock-wildlife-recreational considerations kept in mind.

It is believed the time is ripe and the basic data and considerations are well enough known or locally determinable to agree upon broad policies and their adjustment to Regional and local conditions. Also Regional and local limitations and relative values based on factual data can be reasonably determined and logically presented to interested agencies and the general public. I therefore suggest for consideration the following principles:

- (1) The extensive scope of National Forest areas in the west, their varied character and versatile uses and the intimate dependency of western populations on agricultural and related pursuits require much larger relative consideration to domestic stock uses in the west with the exception of Region ten than are indicated for Regions seven, eight and nine. (See the accompanying data by States and regions.)
- (2) Such considerations should be coordinated with wildlife and recreation but should be given a priority basis considering western forage areas and used as a whole. Such priorities can be expressed in local and regional domestic stock-wildlife objectives.
- (3) There will be local situations where wildlife can be given a special or major place but the total balance and volume should weigh in the direction of domestic stock as between the two uses, both to be properly correlated with timber and watershed considerations which have still higher priority where these resources are definitely and importantly involved.
- (4) The above does not go along with the wildlife thought that would reserve the National Forest areas of the west largely or exclusively for wildlife. Such a policy would involve

not alone the National Forests, but also much of the public domain and a large proportion of present dependent ranch properties, because year-round habitat for even present numbers of wildlife depend upon such lands in large measure.

- (5) A policy of correlation with the balance in favor of domestic stock does and will make due relative provision for the important wildlife resource and the related public recreation values of National Forests and communities and local occupations that may depend in important measure upon wildlife-recreation use.

The foregoing considerations are approached through the following factors and through the accompanying suggestions for meeting our domestic stock-wildlife responsibilities:

- (a) The grazing industry of the west ranks among the first in importance to the west and in its contribution to the nation.
- (b) Therefore the livestock industry representing investments aggregating \$1,551,586,676 in Regions one-six, a relatively large percentage of which is dependent upon uses of the National Forests should be fostered and encouraged as far as may be consistent, on a sustained basis.
- (c) Agriculture as such is tied up very definitely with livestock pursuits and enforced by the general character and possibilities of the western country.
- (d) Primitive conditions of the fifteenth of seventeenth or eighteenth centuries can not be generally supplied for the wildlife in this present civilization. But wildlife through proper objectives and management can be brought a long way back from the low points in its depletion and its present status vastly improved.
- (e) This will be contingent upon basic facts, studied and intelligent cooperation, coordination and correlation and the meeting of minds with concentration on practical considerations.
- (f) The growing demands for wildlife by nearly all classes of people should be met within reasonable limitations both through supervisory-protective administration and the handling of the related resources to that end, with conflicts and jealousies in jurisdiction set aside or reduced to the practical minimum. There is a field for the

Federal Government and there is a field for the States and other agencies. All should be merged as far as practicable into an unselfish, intelligent and coordinated program. This may savor of Utopia, but it is vitally important as one of the major objectives. The Act of May 23, 1908, places definite responsibility upon the Forest Service, which, coupled with the interest and everyday working knowledge of Forest officers, should lead well toward the realization of such objective, if not its ideal accomplishment.

Suggested Approach to Working Objectives

The regions in their responses to circular letter "G, Fish and Game, Statistics" of May 19, 1936, (all in to October 24, but 1 and 6) have developed and presented the wildlife-domestic stock situation in a very clear, comprehensive and factual form - the best so far recorded in wildlife reports. Also responses to circular letter of May 15, same designation, should be mentioned, which deals more with the fishing and water resources, and the everyday work of Forest officers in wildlife. A summary of those is being published by the Wildlife Committee, House of Representatives and will be distributed shortly. It seems to me that an open-minded analysis of these regional reports can not help but lead to objectives in keeping with local and regional conditions and within practical possibilities. The accompanying brief summaries outline the high lights only, but will help illustrate the problems and opportunities and relative values.

Of first consideration is yearlong habitat of game. Winter range is principally controlling in game numbers. All the reports received show for the regions as a whole a need for additional winter range in the purchase of private lands or in the allocation of public domain both to winter wildlife habitat if present numbers of big game are to be administered on a natural, not artificial, year-round basis. There are individual Forest locations where game populations may be encouraged to increase without extending control to additional winter areas, but the general problem is inadequate winter range now in public control.

To take care of big game animals to the capacity of summer ranges assuming present numbers of domestic stock will require the acquisition or setting aside of a much larger acreage. As it is, owners of private lands are making, in many instances, the largest present contributions to winter habitat. Illustrative of this condition are the statements of four of six regions heard from that 3,653,756 additional acres of private land and public domain are needed for present numbers of big game and 11,972,902 acres to take care of what the summer ranges will support assuming stocking by present numbers of domestic stock. In other words, availability of winter ranges largely control optimum objectives in big game. These considerations are basic and suggest the following present objectives:

1. Total numbers of big game should be outlined with the practical possibilities of winter range and should not be materially encouraged beyond that point, which may change progressively, of course, as the acquisition of

winter range may be accomplished. There should be an aggressive policy toward the acquisition of winter habitat in some form.

2. Winter ranges within National Forest boundaries should have special consideration giving wildlife priority on specialized areas and on other winter areas stock more lightly with domestic stock to leave types of winter feed suitable to game to tide over the more critical periods.
3. There are large areas and acreages such as watersheds and rougher country, wilderness areas, etc., now used exclusively by game roughly expressed in 38 percent of the total National Forests, and not used by domestic stock. There will be local opportunities to set aside additional strategic areas without unduly aggravating the balance between summer and winter areas. Let's not crowd domestic stock into every little accessible spot, but leave virgin areas whether at present used by game or not. They will come in handy sometime.
4. Material encouragement of total numbers beyond a well-balanced summer-winter program should not be encouraged even though there may be an abundance of summer range.
5. Do not make wildlife introductions such as elk where they will introduce settlement damage problems that will get out of hand.
6. Prescribe objectives in numbers of elk and deer in terms of domestic stock uses in units dictated by localities or broader regions and base them principally on available winter forage somewhat as follows:
 - a. Objectives in game numbers will be to domestic stock as 1 to 3, or 1 to 4, or 1 to 8, as the case may be. For instance, in Colorado an objective of 1 to 4 or 25 percent of big game to 75 percent of domestic stock on summer ranges to 1950 was at one time indicated if proper action could be had on winter range. The ratio at that time was about 1 to 12. An objective for Wyoming was indicated at 1 to 4 to 1950 dependent upon proper control and protection of winter ranges which ratio at that time was practically reached. These were merely broad objectives. Local conditions are usually controlling.
 - b. Prepare and present to the States and local wildlife agencies the analyses of present available data looking toward agreement on objectives prescribed by this fact-finding approach to the subject. This calls for consistent follow-up and repetition and progressive factual data on changing field conditions.

- c. Adjust game management plans up or down in all practical ways to meet such objectives. Forget sentiment when reduction programs are prescribed by the factual data of the local situation.
- d. Continue to encourage emergency winter feeding for the most critical, deep snow conditions, to prevent starvation losses.
- e. Keep in mind there are lots of areas on which big game users should not be encouraged at all. Again the local situation will be determining.
- f. If available summer ranges remain consistently in excess of summer capacities and range adjustments for winter are impractical consider as a sort of last resort the adoption of the European policy of more general feeding and game farming as a possible incidental contribution and compensation for the local production of feed. This is not suggested as an active policy or program this side of 1950.
- g. The show-me trips are productive of mutual understanding and should be generally encouraged and programmed. The livestock interests should be represented on such trips.
- h. Make provision for wildlife in the distribution study in local instances of need where the winter-summer balance is not necessarily the controlling factor. With reasonable law observance and enforcement and provision for natural environment big game make satisfactory increases and the principal concern seems to be to keep them from getting out of hand or developing into local problems. With so many other factors controlling optimum objectives, with summer ranges excepting in local instances much in excess of winter provisions the relation of the distribution study to big game is not general but local and apparently will not require livestock reductions on a wide or large scale.

Domestic Stock-Wildlife Notes
on Region One National Forests

It is estimated that the National Forests in Region one furnish 85 percent of the forage used by big game animals in this area; the same percentage applies to numbers of animals compared to the totals in the States with, of course, extremely high numbers in summer and low figures in severe winters. Region one's National Forest estimates show the following numbers of big game using the Forests in summer:

State	Deer	Elk	Mt. Sheep	Mt. Goats	Moose	Antelope	Black bear	Grizzly
Montana	77,323	17,333	927	3,702	1,470	860	4,609	479
Idaho (N)	31,888	15,239	350	1,805	335	-	2,655	51
Wash. (E)	2,968	5	-	19	-	-	-	-
S. Dak.	<u>70</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>200</u>	<u>-</u>	<u>-</u>
Total	112,249	32,577	1,277	5,526	1,805	1,060	7,264	530

Remaining in Severe Winters

State	Deer	Elk	Mt. Sheep	Mt. Goats	Antelope	Black bear	Grizzly
Montana	42,536	12,808	867	3,652	500	4,609	479
Idaho (N)	23,371	12,954	270	1,445	-	2,655	51
Wash. (E)	1,226	5	-	19	-	-	-
S. Dak.	<u>45</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>50</u>	<u>-</u>	<u>-</u>
Totals	67,178	25,767	1,137	5,116	550	7,264	530

National Forests in Region one have a gross acreage of 26,651,296 and a net acreage of 22,863,504 of which 10,928,637 acres are used in summer and 202,407 in winter. Thus 52 percent of the Region one area is not used by domestic stock in summer.

Game use 22,461,439 acres within the boundaries of which 14,459,689 is used exclusively and 8,001,750 in common with domestic stock.

Domestic use only 190,667 acres in winter.

Thirty-five game preserves totalling 2,395,733 acres have a summer capacity of 86,022 head and a winter capacity of only 16,665 head of big game.

There is needed to supplement National Forest areas for winter range 1,405,966 acres of private lands and 185,597 acres of public domain - total, 1,591,563 acres.

To provide adequate winter range for all the big game animals which present summer range would support 6,386,123 acres of private and 185,597 acres of public land are needed - total 6,571,720 acres.

Private owned usable range lands in Montana comprise over 41,500,000 acres and in the 10 northern counties of Idaho 1,300,000 acres involving a total investment including livestock and improvements of \$329,281,406.95.

The National Forests furnish about 10 percent of this investment and the income from it. Livestock ranks first in Montana with a gross income of \$60,214,000; farm crops second with \$40,197,000; mining third with \$30,918,228, and lumber fourth with \$6,385,583.

From wildlife in the sale of licenses a revenue of \$226,963.70 is realized and from the expenditures of sportsmen \$1,303,820.

Some overstocking of big game on the Bitterroot, Flathead, Gallatin, and Lewis and Clark Forests - all with elk. The Region one reports describe the conditions fully on each area both historically and physically. The problem is one of reducing numbers to feed capacities. Region and State and sportsmen are getting closer to agreements through "show-me" trips over critical areas.

Domestic Stock - Wildlife Notes
on Region Two - National Forests

Numbers of big game animals on National Forests by States included in Region 2 (1936):

State	Elk	Moose	Mt. Sheep	Antelope	White-Tail Deer	Mule B & B Deer bear	Grizzly
Colorado	16,077	-	2,740	212	-	75,310 3,681	5
So. Dakota	362	-	-	12	5,050	2,425	-
Nebraska	-	-	-	-	189	-	-
Wyo. east of Cent. Divide	11,715	438	1,492	1,015	-	20,990 1,074	127
TotalR-2	28,154	438	4,232	1,239	5,050	98,914 4,755	132
% to total in States	94	100	86	7.8	98	76	92

About one-third of the elk, practically all the moose, six-sevenths of the mountain sheep and a little less than half of the deer remain on the Forests in hard winters. Elk and deer figures are increasing very rapidly, for instance, the Regional totals on elk are 28,154 and on mule deer 98,914 for 1936, whereas in 1926 they were 16,191 and 42,063 respectively, the last figure including white-tail deer which in 1936 add 5,050 to the 1936 deer estimate above.

Of 19,440,666 net acres in Region 2 National Forests, 12,827,546, or an average of 66 percent is used by domestic stock and of which net National Forest acreage only three percent is used in winter.

In summer big game use exclusively 5,419,480 acres and in common with domestic stock 13,849,742 acres or a total of 17,383,421 acres. In winter big game use 5,710,670 acres or about 20 percent of the 19,440,666 net acres in the Forests as against three percent by domestic stock.

There are 5,036,444 acres in game preserves in the National Forests, having a big game capacity of 148,430 head and a winter capacity of 55,875 head.

To care for present numbers of big game there is needed in addition to present winter ranges 378,078 acres of private land and 726,488 of public domain - total 1,104,566 acres; to care for the number of big game the summer ranges will support, assuming present numbers of domestic stock using present summer ranges, 1,305,461 acres of private and 2,622,720 acres of public domain are needed - total 3,928,181 additional acres in order to acquire control of both winter and summer game ranges. Game now use these lands in most instances, therefore, private lands are making a rather large contribution to winter game range.

Present drains on wildlife from disease and predators is slightly less in elk than from man and considerably more in deer.

Colorado National Forests provide for 38 percent of the State's livestock industry (cattle and sheep); South Dakota two percent; and Wyoming Region two Forests nine percent. Uses by horses and goats insignificant. The relative income from National Forests is approximately in the same percentages for the States mentioned.

Receipts for game licenses, \$141,000. About ten percent of Colorado population hold fishing or hunting licenses. Estimated expenditures by sportsmen \$18,264,050; about one out of four big game hunters successful in Colorado. It is stated that beaver properly managed could bring in an income of \$500,000 to \$1,000,000 in Colorado. The potential economic values of the wildlife resource are enormous but slow of recognition by the public generally and difficult to express in monetary terms.

Overstocked game areas in Region two comparatively few and those without exception are found in refuges where game have increased beyond the carrying capacity of available winter range without adequate plans of disposal. Examples of understocking include the following Forests: Montezuma, Rio Grande, San Juan, and Uncompahgre, where deer could be increased several times as each has ample summer and winter range.

Examples of overstocking are: Gunnison refuge, Colorado, and Shell Creek refuge in Wyoming.

Few stockmen in Colorado have registered serious complaints relative to provisions made on National Forests for wildlife. Some alarm expressed in Wyoming based on rumors that large grazing areas would be set apart exclusively for wildlife.

Region has given special consideration to important winter game areas within Forests. The big winter problem is outside the boundaries.

Domestic Stock - Wildlife

Notes on Region Three National Forests

Game on and off National Forests and percentage of State's totals on: antelope, 20,700, 31 percent; bear, 2,300, 92 percent; deer, 210,000, 81 percent; elk, 9,600, 62 percent; mountain sheep, 900, 33 percent; peccary, 7,600, 69 percent; squirrel, 92,000, 95 percent; turkey, 27,600, 87 percent. About three-fourths to four-fifths or more of species mentioned remain on Forests in hard winters excepting antelope which is about 16 percent.

National Forest net acreage 20,177,706 of which 91-1/2 + percent is used by domestic stock in summer and 61+ percent in winter, and of which nearly 95 percent is used by big game in summer and about 73 percent in winter.

About 900,000 acres additional of winter range needed to care for present numbers of game and to care for numbers the present National Forest summer range will support, 1,283,500 acres needed.

State livestock ranch and pasture investments \$120,226,842 (census of 1935) of which an average of 13 percent of cattle and 7 percent of sheep apply to National Forests, converting cattle and sheep to yearlong basis. Privately owned lands within National Forests account for five percent more.

Livestock income of \$42,184,000 largest State industry, mineral second and crop agriculture third. National Forest cattle business produces 13 percent and sheep 7 percent of the total State income.

Approximately 80 percent of all big game hunting in New Mexico and 90 percent in Arizona on National Forests for which game hunters spend \$1,058,490 annually.

Several cases of overpopulations of deer: two division of Coronado; Mt. Graham division of the Crook; and elk on parts of Sitgreaves and Coconino, the last from a plant of 75 elk in 1913, now increased to around 4,000.

Stockmen favorable to wildlife up to point where it comes into serious competition with domestic livestock. Drain on game animals as between man and predatory animals is about 1 - 4.

Domestic Stock - Wildlife
Notes on Region Four National Forests

r of big game animals on National Forests of Region four, by States:

	<u>Idaho</u>	<u>Nevada</u>	<u>Utah</u>	<u>Wyoming</u>	<u>Region</u>
Elk	6,500	100	3,000	25,000	34,600
Moose	300	-	-	1,700	2,000
Mt. Sheep	1,600	200	100	2,200	4,100
Mt. Goats	1,500	-	-	-	1,500
Deer	57,500	12,200	87,000	6,100	162,000
Antelope	<u>4,700</u>	<u>200</u>	<u>100</u>	<u>-</u>	<u>5,000</u>
	72,100	12,700	90,200	35,000	210,000

Average Per-
cent in re-
lation to total
in States

83 52 81 88 80

Species like elk, moose and mountain goats are about 100 percent on Forests; also mountain sheep excepting in Nevada and Utah.

Some 55 percent of the Region's big game stay on the Forests in winter.

Gross area in National Forests 30,846,951.

Net " " " " 29,192,962

Total acreage use by domestic stock summer and winter 20,775,000

Total used in hard winters 330,000

Total acreage used by game exclusively, summer, 8,228,000 of which 6,399,000 are inaccessible to livestock and 1,829,000 acres are closed to livestock, most of which inaccessible area is used by mountain sheep, mountain goats and other big game.

Acreage used in common by domestic stock and game in summer 20,445,000

Total used by game in summer 28,863,000

Exclusively by game in hard winters 361,000

By domestic stock in summer and game in hard winters 1,482,000

Established big game capacity of National Forest lands
for big game in summer considering present stocking
by domestic stock

436,600
hd.

Present numbers of big game 210,000

Winter capacity 143,800

Present winter use 116,800

Additional acres winter range needed better to care
for present numbers of big game

Private land inside and outside Forests	551,240
Public domain	<u>1,027,000</u>
Total	1,588,240

Additional acreage needed to care for what game
summer ranges will support assuming present
numbers of domestic stock and assuming adequate
game control and management

Private lands inside and outside	2,150,240
Public domain	<u>2,203,000</u>
Total	4,353,240

Livestock industry investments - in portions of States in Region including private grazing land figures for Utah only - \$233,135,330. Percentages applicable to National Forests: Idaho - 35; Nevada - 20; Utah - 26.3; Wyoming - 35. Approximate income from livestock industry same basis as above - \$50,085,269.

Percent of income from National Forests same as percentage of investments above.

Stockmen with a few minor exceptions are favorable to game and want game in reasonable numbers. What they want is a game program correlated with livestock.

Total annual expenditures by sportsmen - \$929,000

Some interior communities like Jackson, Wyoming, gained enough from tourist and hunting trade in short summer season to largely tide them over the year. No one in Jackson was on relief during the depression. 12,000 cattle in the county and 8,000 elk fed in winter, the latter consuming 3,000 tons of locally produced hay, constitute the principal sources of income.

There are some overstocking problems on livestock-game ranges viz: Beaver Ranger District Fishlake Forest is a special example where reductions in livestock have not coped with game increases. Problem is to reduce deer to sustained forage-game annual yield basis correlated with livestock uses.

Middle Fork of Salmon River, Salmon National Forest, is another problem, this one due to difficulty of harvesting normal game income on certain inaccessible primitive areas involved.

Region four is only region to date using Reg. G-20 A. It is in effect on the Moapa (Nevada) portion of the Dixie Forest which is in a State game refuge.

Domestic Stock - Wildlife
Notes on Region Five National Forests

Approximately 75 percent of the big game animals in California are found on the National Forests the greater part of the year. Species are mostly black-tail and mule deer with some bear, mountain sheep, antelope and a limited number of elk - 271,000 deer and 155 elk on the National Forests.

In summer 18,743,000 acres used by game; in winter 7,544,000 acres. Total acreage in National Forests, 19,163,818.

There are 33 State and Federal game refuges in the State of which 2,107,520 acres are in the National Forests and 129,040 outside plus 92,720 acres where forage resources are reserved exclusively for game.

Additional winter range needed to take care of present numbers, 1,098,000 acres.

Additional winter range needed to take care of numbers summer range will support under present domestic stocking, 2,725,000 acres.

Total livestock investments in State including 17,975,000 acres privately owned, \$285,500,000.

Approximate percent of this applicable to National Forests: sheep 12 percent, cattle 7 percent, representing an income from the Forests of 15 percent of a total State income of \$25,077,000, which is 2 percent of State's total income.

Sportsmen's expenditures are \$20,000,000 or approximately 1.5 percent of State's total income. Wildlife is the basis for a large percent of the recreational activities of the California people.

There are several cases of overstocking and understocking by deer - three are on winter ranges and one on summer range, the last in San Bernardino National Forest.

In general stockmen are in favor of game protection and to its increase. Exceptions are where deer have increased to the point of causing them economic loss. Two large private ranches bear the burden of winter, spring and fall feeding of 28,000 deer without a great amount of complaint from the owners.

Game has increased wherever reasonably well protected and too rapidly on parts of the Modoc, Lassen, Mendocino, and San Bernardino Forests. Grouse apparently building to another peak and waterfowl showing gratifying increase throughout local nesting areas in Northern California.

If reasonable share of forage to be used by game could be agreed upon any present cases of antagonistic attitude would disappear, according to the Regional Forester.

Domestic Stock-Wildlife Notes
on Region Six National Forests

Region six National Forests harbor 70,000 mule deer (80% of Oregon State total), 40,000 black tail deer (60%) 100 white tail deer (60%), 13,300 elk (30%), 50 mountain sheep (100%), no mountain goats, 800 antelope (5%), and 4,500 bear (50%) - a total of 128,750 animals, or an average of 65%. About 55 percent average including all the bear and mountain sheep remain on the Forests in extremely hard winters.

The State of Washington figures are as follows compared to State totals: 30,000 mule deer (85%), blacktail deer 20,000 (50%) white tail 1,600 (75%), elk 12,700 (85%), mountain sheep 10 (100%), mountain goats 5,300 (95%), antelope none, bear 8,000 (60%) - total animals 77,610, (70%).

In extremely hard winters an average of some 60 percent, including all the bear and mountain sheep, remain on the Forests.

National Forests in Region six have a gross acreage of 27,703,352 and a net of 22,590,068 of which only 206,400 acres are used by domestic stock in winter, and 10,916,600 in summer.

Big game uses are common with domestic on all the summer and winter acreage used by domestic stock and extend to 22,213,000 acres in summer and 2,594,400 in winter.

There are 33 game refuges in the Forests totalling 2,756,849 acres with a capacity of 64,000 game in summer and 15,000 in winter.

There are needed for winter range 1,725,000 acres of private land additional to present winter ranges inside the National Forests and 994,000 acres of public domain - total 2,719,000 acres. To care for number of big game animals the summer ranges will support assuming present numbers in domestic stocking 3,230,000 acres of private land and 2,030,000 of public domain - total 5,260,000 acres are needed which includes about 90,000 acres owned by the State of Washington and 984,000 acres of O. & C. lands.

Livestock investments in both States of Oregon and Washington including livestock and real estate total \$169,172,000 of which \$38,959,850 (22%) applies to the National Forests (Oregon share 25% - Washington 16% by States).

The income from the livestock industry approximates \$39,421,000 of which 22 percent relates to the National Forests (percentage relations by States as for the investments). The livestock business in Oregon constitutes 21 percent of the total State agricultural income, and in Washington, 5 percent - an average of 12 percent for the two States.

Hunting licenses to the number of 285,937 are sold in the two States bringing a revenue of \$765,915. The annual expenditures by sportsmen total for the Region \$13,000,000. A deer costs the successful hunter \$34.00 to bag and an elk \$41.00. It is estimated that the annual income from the wildlife resources including the value of the meat and other by-products totals \$28,000,000.

Big game problems are:

1. Overstocking of deer on Murder's Creek induced by the establishment of a refuge, and lack of subsequent control of increases. Malheur Forest involved mostly.
2. Rattlesnake elk problem on Snoqualmie Forest in Washington, due to ill-conceived planting and continued maintenance of a game refuge after it had outlined its usefulness. There has been strong opposition against adopting a practical program of control by both the State and sportsman's associations. It was opened to hunting fall of 1936, overriding the vehement protests of sportsmen and nature lovers.

Summary of Livestock and Ranch Investments
by Regions and Relations to National Forests

<u>Region</u>	<u>Total Investments</u>	<u>Related to Forests</u>	<u>Percent</u>
1	\$ 329,281,406	\$ 3,292,814	10%
2	* 414,271,458	(Colo. 40,214,472 --(S.Dak. 1,500,148 (Wyo. 10,032,719	38% 2% 9%
3	120,226,482	7,932,840	** 6.64%
4	233,135,350	66,850,662	29% -
5	285,500,000	28,500,000	10% -
6	<u>169,172,000</u>	<u>38,959,850</u>	<u>22% +</u>
	\$1,551,586,676	\$197,283,505	12.7%

The figures are approximations but will help to show the general importance of the livestock industry in the western States as a whole. Regions two and four show a relatively large relation to National Forest areas considering that in Colorado National Forests comprise about 20 percent of the States total area and in Utah, 14 percent.

* Farm lands not included.

** Livestock products by themselves are approximately 10 percent related to Forests.

Additional Winter Ranges Needed for Big Game

Region	For Present Numbers of Big Game		For Numbers Summer Range will support with Present Domestic stocking	
	Private Lands	Public Domain	Private Lands	Public Domain
1	1,405,966	185,597	6,386,123	185,597
2	378,078	726,488	1,305,461	2,622,720
3	422,000	* 476,000	592,000	** 691,500
4	561,240	1,027,000	2,327,000	2,203,000
5	407,000	691,000	1,029,000	1,696,000
6	<u>1,725,000</u>	<u>994,000</u>	<u>3,230,000</u>	<u>2,030,000</u>
	4,899,284	4,100,085	14,869,584	9,428,817
*	Includes	98,000 acres in Indian Reservation and 132,000 State lands.		
**	"	98,000	" " " " " "	" 192,000 " "

Domestic Stock - Wildlife
Notes on Region Ten National Forests

Total big game animals 68,640; moose and mountain sheep population small compared to total number in Alaska but are on and are stocking very accessible and attractive areas. Elk planted on Afognok Island in Chugach Forest doing well. All deer in Alaska are on National Forests. Black bear too numerous to guess proportion on Forests. Large percent of most accessible Alaska brown and grizzly inside National Forests. Domestic stock not a factor. Conservative estimate of value of game on foot, \$93,000,000 and annual return from meat and fur, \$3,300,000.

JOHN H. HATTON.



