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THE FUTURE OF THE GREAT PLAINS RE-VISITED

GILBERT F. WHITE

The Future of the Great Plains came in the mid-1930s at the culmination of a great drought and a festering worldwide economic depression as new, ambitious Washington agencies sought to redress the accumulated wounds to people and soil. Following a series of more narrow reports, this comprehensive study presented the prevailing judgments as to what had gone wrong on the Great Plains. And it outlined a widely shared vision of what the future might hold if its social prescriptions were heeded.¹

Sceptics of the time wryly remarked that the animal on its front cover (a large bull, fig. 1) symbolized a certain disposition to talk bigger than the evidence warranted, but by and large the report was a consensus of state and national opinions then held among responsible groups. It summed up the prevailing views of a Federal inter-agency committee on the maladjustments and desirable changes in

adjustments to the resources and risks of the Great Plains against the background of the worst climate-related crisis in the history of the region.

As a green young geographer who during the preceding two years had talked with discouraged farmers stacking Russian thistles for cattle feed in the Jim River valley and had listened to local and state spokesmen telling off Federal officials in public hearings at the Nebraska capitol building and who had been a party to Washington agency wrangling over who should do what when, I recorded some of the inter-agency discussions and on the periphery helped assemble the text and supporting papers for the final document. At the close of the twenties I had helped irrigate crops subsequently consumed by grasshoppers in the Tongue River valley of Wyoming and had herded livestock for ranchers going broke. In the early thirties at the University of Chicago I had read John Wesley Powell and Isaiah Bowman, and in the classroom I had heard Harlan Barrows and Griffith Taylor discuss the iniquities or misconceptions of semiarid farmers of northern and southern hemispheres.

Looking back half a century later, it may be

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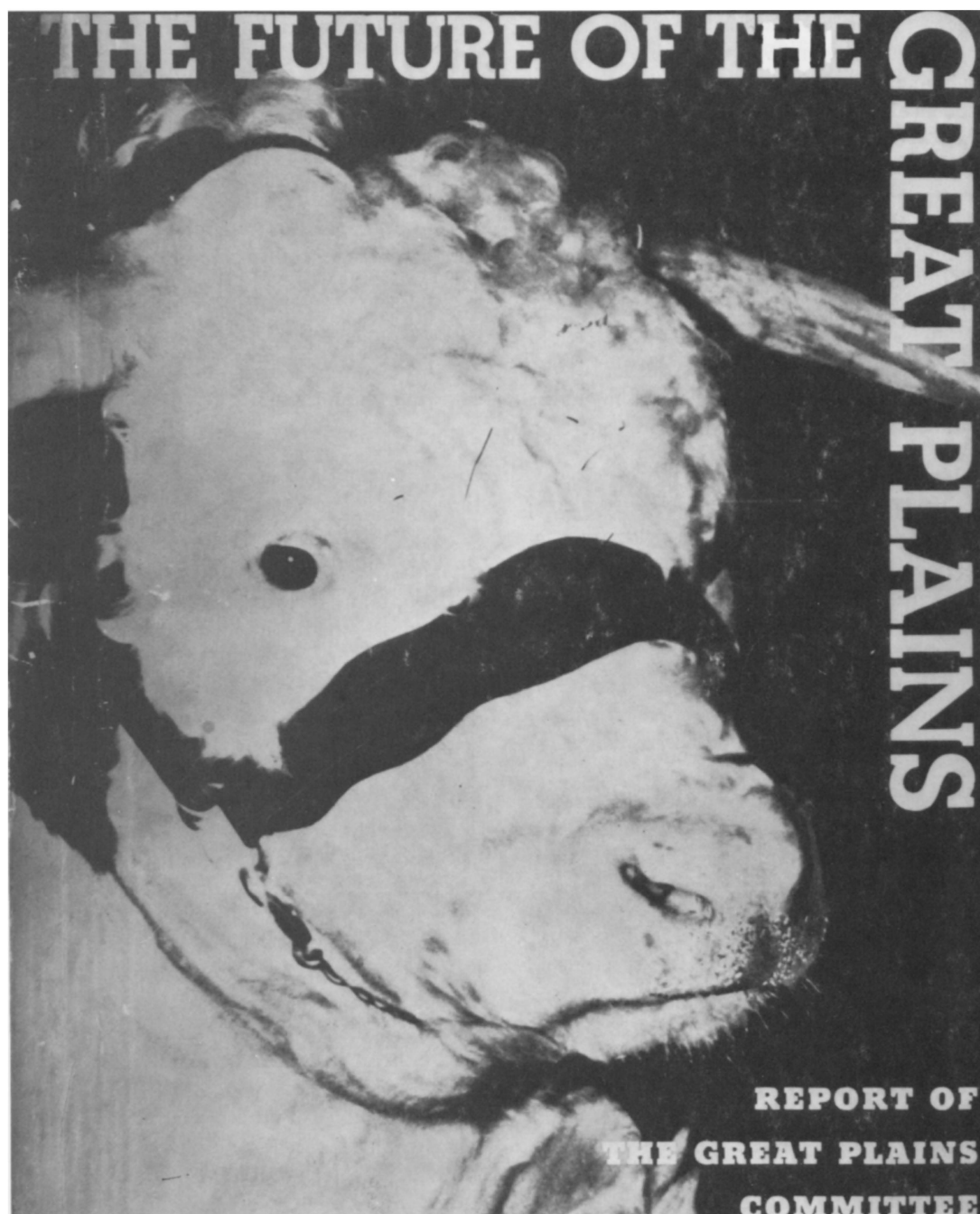


FIG. 1. Cover of The Future of the Great Plains.

helpful to those who would assess the future of the Great Plains in 1986 to recall a bit of the ambiance of that earlier time, to outline the sequence of activities leading to the report, and to ask how certain of the judgments it eloquently embodied have stood up to the test of new evidence and studies. That exercise suggests two simple observations that may be lessons for contemporary analysts.

AMBIANCE

The conditions in which the authors of *The Future of the Great Plains* worked might be summed up as economic deterioration, crop losses, and a New Deal in Washington. The report reflects these pictorially as well as in its text. Economic distress was acute. Measured by farms mortgaged, mortgages foreclosed, delinquent taxes, farm households on relief, or curtailment of local government expenditures, the times were exceedingly hard on the Great Plains. New ways of approaching such problems were encouraged. Land use zoning in Wisconsin was attracting national attention. County land use committees were being fostered.

Crop failure, largely the result of abnormally low precipitation, had exacerbated the situation. Acreage in harvested crops had been increasing. So, too, had tenancy. Drought was more severe than in forty years. Corn and wheat yields had declined. The Great Plains were seen as the most dramatic instance of American agriculture being maladjusted to the natural environment. Dust storms had become troublesome.² The ecological pronouncements of Aldo Leopold and Paul Sears on these matters had just appeared. So also, a few years before, had Walter Webb's *The Great Plains*.

Dating from the launching of the Roosevelt administration in the spring of 1933, a new set of policies and a new set of federal agencies had been put in place. Notions of public acquisition of submarginal lands and resettlement of submarginal farmers, of providing electricity to every farm family, of controlling farm surpluses, of blanketing the arable land with soil

conservation programs, and of providing federal relief where states were financially strapped, had been applied. All of this and much more has been described by Paul Bonni-field, Marion Clawson, Leslie Hewes, Donald Worster, and others.³

It is interesting that the term *Dust Bowl* does not appear in the report except in a bibliographic reference and was not then in common use by its authors. The popularity of the phrase, with its variety of connotations, was to follow. Journalists and journalistically inclined administrators and scientists were shortly to popularize it.

GENESIS OF THE REPORT

The Future of the Great Plains was the last in a series of government reports initiated shortly after the Roosevelt administration took office in 1933, many of them for the Department of Agriculture, the Resettlement Administration, the Federal Emergency Relief Administration, and the Works Progress Administration, to provide understanding of the degree and extent of distress in terms of crop conditions, livestock conditions, and farmer finances. As early as 1934 the Mississippi Valley Committee, the National Planning Board and its successor, the National Resources Board, and the Bureau of Agricultural Economics had offered analyses of the state of the rural economy and of possible ways of improving it.

The Public Works Administration was deluged with proposals for projects to improve resources management by building water use and control works to both relieve economic distress and create employment. The administrator, Secretary of Interior Harold Ickes, soon felt the need for some kind of advice as to how individual water projects might relate to each other and to the long-term welfare of the areas concerned. He was reluctant to put such judgments wholly in the hands of the Bureau of Reclamation or the Corps of Engineers, both of which had a stock of construction projects awaiting only money. Accordingly, he and his deputy, Colonel H. M. Waite, while

funding a number of major projects, established the Mississippi Valley Committee and a National Planning Board. The Mississippi Valley Committee put together a recommended program of works, with separate sections for the Missouri and Arkansas rivers, White and Red river basins, including all of the Great Plains as well as areas upstream and downstream.

By mid-1934 the new planning agencies had pointed out major problems of land and water use in both sets of basins. The Mississippi Valley Committee observed about the Northern Plains:

No certain formula for wide-spread agricultural success on the semiarid plains has been developed, and no easy solution is within sight. The zone seems likely to continue as an area of experimentation in land utilization, of painful trial and error.⁴

The National Resources Board in turn concluded, after reviewing "The Great Drought of 1934":

If the errors of the past are to be avoided, sound and coordinated guidance must be available. This requires a clearing house of existing information, the initiation of a unified plan of further surveys and research, and the application of accumulating knowledge to the framing of broad conservation programs for the various areas having common land and water problems.

The prevention of drought damages should claim the immediate attention of an appropriate continuing agency, and work should be begun before memory of the recent distress grows dim. Otherwise, the next severe drought will find many areas as unprepared as they were during the last one, once again direct relief on a large scale will be necessary, and again water conservation measures will be hurried and faulty.⁵

Following some improvement in precipitation conditions in 1935, the 1936 crop season

promised even more severe distress. A special Great Plains Drought Area Committee was appointed by President Roosevelt on 22 July 1936 to recommend immediate measures beyond the relief programs already under way to cope with the situation. It reported on 27 August, making suggestions for immediate action and saying it could provide more details if desired.⁶ On 17 September the president requested Morris L. Cooke to chair a new committee to report by the end of the year.

Of the eight members of the committee, four were trained in engineering, one was trained in geography, one in soils and geography, one was an agricultural economist, and one was a management analyst. The chairman set the tone for presentation of findings, emphasizing graphics and popular prose. H. S. Person supervised the compilation of the report. L. C. Gray of the Resettlement Administration provided most of the material and ideas, drawing heavily on data from the Land Utilization Division, the Soil Conservation Service; and other parts of the U.S. Department of Agriculture. John B. Bennett had major responsibility for preparing the document and completed a 322 page manuscript report on Great Plains conditions by 10 August 1936. Some of this material was used in the December report, but many of its seventy-nine figures and forty-six tables, including a manuscript map showing number of days with precipitation for each of the preceding five years on the Great Plains, did not appear.

The Water Resources Committee of the National Resources Committee provided data on drainage basin plans. The National Resources Committee also solicited judgments on drought conditions and prospects from nine state planning boards and consultants, and on water conditions from three water consultants. The county data on five indices of drought intensity had been compiled and mapped by the Works Progress Administration, and were published in January 1937.⁷ The indices were precipitation, departure from normal crop conditions, pasture conditions, change in cattle population, and per capita federal aid.

Throughout these efforts, there was among the principal federal agencies a vigorous competition for money, turf, and ideas. Secretary Ickes, having established the Soil Erosion Service and seen it captured the following year by Secretary of Agriculture Henry Wallace, was reluctant to cooperate with Agriculture. Both were suspicious of the Secretary of War's Corps of Engineers. Both were members of the National Resources Board and its successors, but the harmony was tense and uneasy. Thus, each representative on the emergency Great Plains Drought Area Committee and the Great Plains Committee was sensitive to the implications for his agency. However, the technical personnel had few major difficulties in arriving at agreement on most points of description or prescription.

It was very much a group enterprise, with all of the strengths of diverse experience and outlook, and all of the weaknesses of group timidity, compromise, and faddishness. At the time, some of the severe critics among those who labored long at night on the text, speculating intermittently on what, if anything, FDR would do with the findings, argued that the report lacked deliberative analysis. Indeed, it was done hastily. Some others, caught up in the process, replied that without the sense of urgency propelling the whole exercise it would have been impossible to assemble such a diverse group and to reconcile rivalries and conflicting orientations that otherwise would prevail. Public hearings were held in Bismarck, North Dakota, Dalhart, Texas, and Washington, D.C. Finally, the report was submitted without dissent and with remarkably little public controversy in its trail.

Between December 1936, and Pearl Harbor, five years later, a good many government reports were published along with more popular nonfiction and fiction that illuminated facets of the Great Plains problem. A continuing coordination committee was established and issued reports. The Bureau of Reclamation and the Corps of Engineers prepared competing reports on the Missouri Basin and compromised them in the Pick-Sloan plan. But no

similarly comprehensive assessment of the situation was undertaken: the program in *The Future of the Great Plains* was never translated fully into action, and no subsequent attempt was made to review all the conditions and activities that followed it.

THE REPORT IN BRIEF

After an opening summary and pictorial survey, the report presented three sets of statements followed by extensive supporting memoranda and appendices. The three major sections dealt with:

1. The general physical characteristics of the area: climate, especially its variability; waters, surface and ground; and soils.
2. The use and misuse of the lands and waters: current uses and factors promoting unwise uses; undesirable tendencies in land use and tenure; destructive effects on physical, vegetal, and social systems; and eleven attitudes of mind contributing to misuse.
3. A program for readjustment and development: federal action; state action; local action; needed readjustments in farm organization and practices; and organization to promote such action.

Line drawings of a hypothetical area in the Great Plains were used to convey a notion of how the region had been modified by human action and how wiser adjustments might be made in the future (figs. 2, 3, and 4). The supplemental materials dealt primarily with ways to institute the needed readjustments and cited examples of resource conservation projects and of state legislation in those directions.

I shall not attempt a retrospective appraisal of the wisdom of the recommended actions in the light of subsequent events. That could come best from the whole array of studies reflected in this issue of *Great Plains Quarterly*. I shall attempt to evaluate the correctness of those assertions about the Great Plains and its society that formed the basis for the recommended program. The distinction is between



FIG. 2. THE GREAT PLAINS OF THE PAST
As the first white settlers drove their covered wagons slowly westward across the seemingly limitless expanses of the Great Plains they found the Red Man living in rude but productive harmony with Nature. The Winter snows and Spring rains clothed the land in grass; forests covered the foothills and lined the upper reaches of clear streams; the buffalo furnished food, clothing, shelter, and other simple necessities without diminishing in number. Living as he did, the Indian could laugh at the burning sun, the strong but dustless winds. He had made his truce with them, and with the land. (*The Future of the Great Plains*)

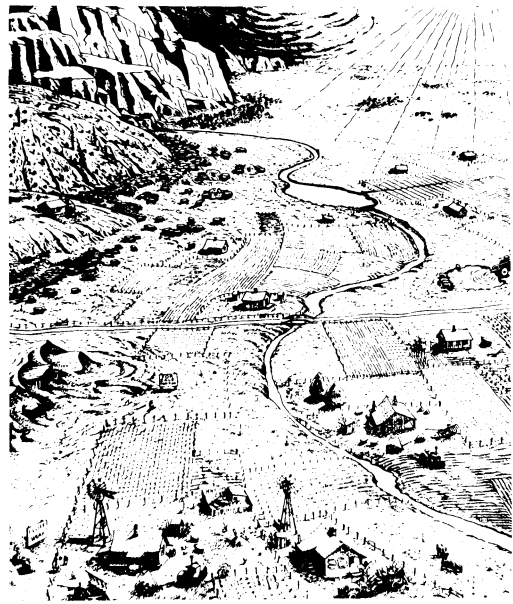


FIG. 3. THE GREAT PLAINS OF THE PRESENT

The White Man knew no truce. He came as a conqueror first of the Indian, then of Nature. Today we see foothills shorn of timber, deeply gullied, useless or rapidly losing their fertile soil under unwise cultivation; the fertile earth itself drifts with the wind in sand hills and in dust clouds; where once the grass was rank, cattle nibble it to the scorched roots; the water of streams and the ground waters too often irrigate poor land, leaving the richer thirsty; men struggle vainly for a living on too few acres; the plough ignores Nature's "Keep Off" signs; communities, for all the courage of their people, fall into decay, with poor schools, shabby houses, the sad cycle of tax sales, relief, aimless migrations. (*The Future of the Great Plains*)

judging the veracity of the statements about the Great Plains and judging the sagacity of the proposed action.

STATEMENTS ABOUT THE GREAT PLAINS ENVIRONMENT

The report asserts a series of understandings about the Great Plains environment in 1936 that may be summarized as follows:

Climate is characterized by variability that has not changed significantly since people first occupied the Plains.

Surface water resources are meager and except for a few large projects can only be conserved efficiently for more intensive use through small projects.

Ground water resources are within reach of economical pumping in a few favored areas.

Natural vegetation has been almost everywhere degraded by overgrazing but is capable of recovery under proper management.

Soil has been widely eroded by water and wind but in most instances can be restored to productivity by suitable measures.

Physical and biological features occur in distinctive combinations: it is unwarranted to generalize about them for the Great Plains as a whole, or to believe that measures suitable for one area would be suitable in others.

The description of climate variability, while far less sophisticated than those descriptions derived from later data collection and research, is not seriously flawed. The committee relied upon C. W. Thornthwaite's work for both climate history and spatial variability.⁸ Prevalent suggestions of secular trends and of periodicity were dismissed.

One key aspect of microclimatology was

not fully appreciated, the relationship of plant growth to soil moisture over periods of hours and days. The desirability of supplemental irrigation to offset periods of shortage was just beginning to be specified by Robert Horton and others.⁹ The atmospheric science was good as far as it went, and its lack of understanding of soil-water-plant linkages would have been unimportant had not technology later revised the view of how water deficits might be remedied.

Surface water storage projects were not seen as offering opportunities to alter the mix of adjustments to drought. Although some projects, such as those along the Platte Valley, had already been undertaken by PWA, and an array of proposed diversion and storage works had been listed by the Water Resources Committee of the new Natural Resources Committee, no emphasis was placed on such development.¹⁰ Small-scale projects integrated with livestock ranching improvement were thought to be more promising.

Ground water resources were considered to

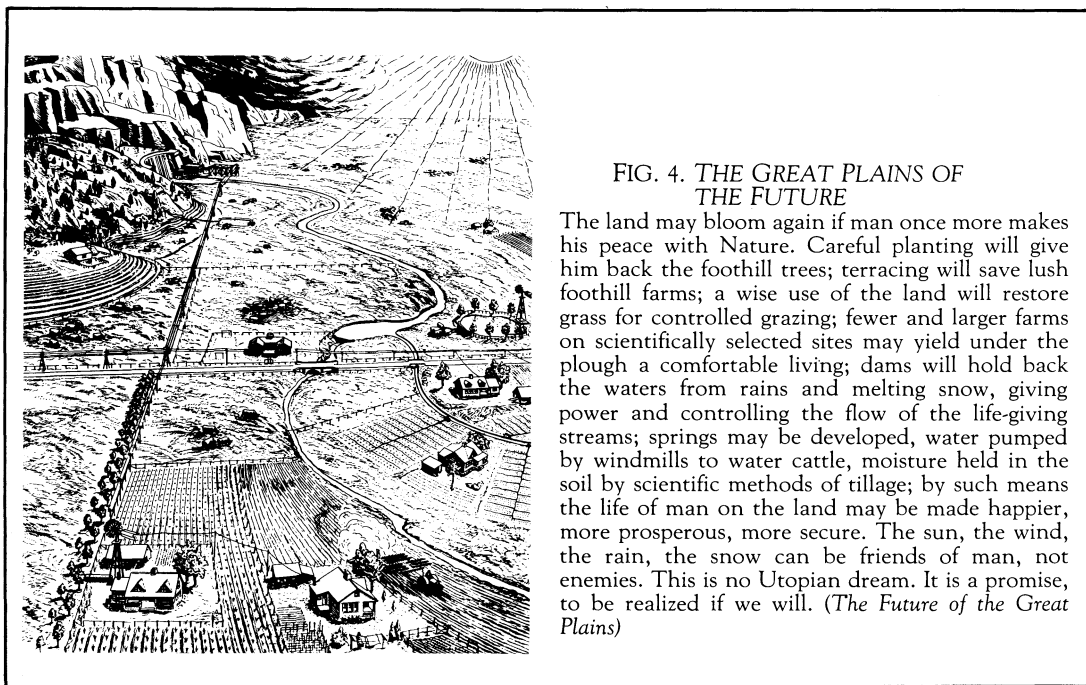


FIG. 4. THE GREAT PLAINS OF THE FUTURE

The land may bloom again if man once more makes his peace with Nature. Careful planting will give him back the foothill trees; terracing will save lush foothill farms; a wise use of the land will restore grass for controlled grazing; fewer and larger farms on scientifically selected sites may yield under the plough a comfortable living; dams will hold back the waters from rains and melting snow, giving power and controlling the flow of the life-giving streams; springs may be developed, water pumped by windmills to water cattle, moisture held in the soil by scientific methods of tillage; by such means the life of man on the land may be made happier, more prosperous, more secure. The sun, the wind, the rain, the snow can be friends of man, not enemies. This is no Utopian dream. It is a promise, to be realized if we will. (*The Future of the Great Plains*)

have local and limited significance. There was slight recognition of the extent of the great aquifers: they were considered too deep and costly to exploit to the large-scale advantage of Great Plains agriculture.

Soil and vegetation descriptions were likewise more rudimentary than would be possible now. While the early approximations of soil classification were being used to construct the first national map of soil erosion, the emphasis was on local diversity and the necessity to look closely at distinctive, unique local patterns.¹¹ For both soil and water conservation at the farm level, the adoption of suitable techniques, very much in course of experimentation, was viewed as contingent upon a viable farm economy.

H. L. Shantz's vegetation map of the Great Plains was used to define the major types, but, as with soil, local diversity was regarded as the necessary object of further, more detailed studies.¹² Degradation was believed to be present almost everywhere that cattle were grazed. Precise analysis was generally lacking.

STATEMENTS ABOUT GREAT PLAINS SOCIETY

The report dealt with the Great Plains social structure and process in two ways. It listed eleven attitudes that were widely held but in its opinion unfounded, and it focused attention on nine undesirable tendencies in land use and tenancy.

The headings for the attitudes are self-explanatory. They assert, in this order, that:

Man conquers nature.

Natural resources are inexhaustible.

Habitual practices are the best.

What is good for the individual is good for everybody.

An owner may do with his property as he likes.

Expanding markets will continue indefinitely.

Free competition coordinates industry and agriculture.

Land values will increase indefinitely.

Tenancy is a stepping stone to ownership.

The factory farm is generally desirable.

The individual must make his own adjustments.

In effect, the committee took exception to each of these attitudes. Its central argument was that as a result of those attitudes and of a commonly held perception of the Great Plains environment as humid rather than semiarid the region's woes had multiplied.

These woes were apparent, the committee argued, in disturbing tendencies. In land use these were overstocking of range lands, expansion of arable farming into unsuitable areas, maladjustments of water utilization to land-use requirements, and poorly balanced systems of farming. In land tenure the culprits were absentee ownership, uneconomic operating units, extensive tenancy, instability and insecurity of tenure, and the leasing system.

Although the report listed in its bibliography an analysis by Caroline Ware and Gardner Means of the problems of coordinating agriculture and industry in the American economy, it did not address directly the question of how much the observed tendencies were products of the underlying economic system.

PRESCRIPTIONS

An array of measures was recommended, many of them at the level of Federal policy, but one overriding qualification was stressed. This was the necessity of developing at the local level land and water improvement measures tailored to the distinctive combinations of climate, landform, soil, hydrology, and vegetation prevailing in each small area. The general measures at the federal and state levels included investigations and surveys, federal land acquisition, resettlement, increasing farm size, control of insect pests, water development, windbreaks, zoning land for its best use, grazing associations, erosion-control dis-

tricts, streamlining local government, and revising tax and water laws. In addition, a series of readjustments in farm organization and practices was proposed. Supporting educational work was outlined. The committee believed that if these measures were adopted a repetition of the 1934–36 distress could be avoided.

Among the notable features of these recommendations was their lack of emphasis on large water projects. The commitments had been made to Fort Peck Dam on the Missouri and for storage on the Arkansas and on the Red. Other large projects were listed with low priority in the National Resources Committee's inventory of water projects in 1936, but *The Future of the Great Plains* downplayed them and failed to endorse the scheme that later was to become the Garrison diversion project.

The full program covered a wide sphere of action as exemplified in the three diagrams of past, present, and future. It favored steps that could be taken within the scope of federal authority, with the states being expected to revise their statutes along the lines of exemplary action elsewhere.

OBSERVATIONS IN 1986

Reflecting on the assessment from the vantage point of half a century, it appears to have been relatively solid in its appraisal of natural features, except for the role of supplemental irrigation, to have underestimated the technological capacity of United States society, and to have overestimated that society's ability to carry out land use planning in the changing context of national and international political economy.

Because it assumed that there would be no significant change in the technology for water lifting and distribution, it did not anticipate the changes which low power costs, efficient pumps, and center pivots would bring to agriculture. Irrigation was thought of in terms of large, surface supplies involving heavy and probably uneconomic investment in storage or pumping works and canals and ditches. (Irrig-

ated land in the eight Great Plains states of North and South Dakota, Nebraska, Kansas, Wyoming, Montana, Colorado, and New Mexico increased from 6.5 million acres in 1940 to 7.7 million acres in 1954 and then climbed to 16.9 acres in 1978, when it leveled off.)

In retrospect, the crucial distinction among these discussions of technology was between assuming that no change would occur and asserting that there was no way of forecasting precisely what changes, if any, might occur. It would have been possible to take the latter position without making the report unduly vague, and to have done so would have kept the door open to a search for improved techniques that might change the prospect.

Even though two of the members were from Secretary Wallace's department, the dream of a magnitude change in corn yields as a result of plant breeding did not appear in their report. Selection for drought resistance was reported and encouraged—the practicability of high-yield hybrids was not. Coupled with cheap supplemental irrigation techniques, hybrids were to alter the entire view of economic application of supplemental irrigation. (Beginning in the late 1950s, corn yields in Nebraska more than doubled over the highest recorded between 1866 and 1955.)

The ability and willingness of a democratic society to change its management processes in a few decades was completely misjudged. Fresh from achievements in establishing new agricultural adjustment programs on a national scale and sensitive to the apparent willingness of farmers and officials to modify their practices in the face of catastrophe, the committee envisaged a degree of acceptance of social change to achieve "best land use" that proved only superficial. The committee itself had identified some of the obstacles to land use planning and zoning and to adoption of measures affecting marketing and tenancy. It did not address modifications in the pricing and credit systems that would be essential to achieve the less fundamental measures.

Putting aside the prescriptions and think-

ing only of the descriptive judgments, two observations are suggested by the record in retrospect. In estimating the productive capacity of a natural resource, in this case soil and ground water, it may be gravely misleading to assume a stable or slowly changing technology. Drastic changes occurred, and they came as discontinuities rather than as gradual developments. Here, of course, is the eternal dilemma: the major discontinuities are rarely predicted, and there are no generally satisfactory ways of handling such change in analysis of basic resources. Just as the deep plough, the windmill, and barbed wire rapidly changed the productive capacity of the Great Plains in an earlier epoch, the technologies of groundwater pumping and of plant breeding fundamentally altered their capacity in later decades.

A second caution arises with respect to judgment of a society's ability to sustain rapid social change. The committee was perspicacious in listing attitudinal obstacles to readjusting the system of social controls and incentives. It did not know how to gauge their weights in relation to the possible benefits from altering state and federal policies and procedures and it assumed its recommendations would be put into practice. It felt unable to recommend basic modifications in the economic and political organization of the nation.

In an analysis that correctly described many aspects of the Great Plains, the major directions in which it went astray were in overly modest assumptions about technological change and overly optimistic assumptions about the receptivity of society to radical alterations in traditional processes.

NOTES

1. Great Plains Committee (Harlan H. Barrows;

H. H. Bennett; Morris L. Cooke, Chairman; L. C. Gray; F. C. Harrington; Richard C. Moore; John C. Page; Harlow S. Person), *The Future of the Great Plains* (Washington: U.S. Government Printing Office, 1936).

2. U.S. Treasury Department, Public Health Service, *Dust Storms and Their Possible Effect on Health* (Washington: U.S. Government Printing Office, 1935).

3. Paul Bonnifield, *The Dust Bowl* (Albuquerque: University of New Mexico Press, 1979); Marion Clawson, *New Deal Planning* (Baltimore: Johns Hopkins University Press, 1981); Leslie Hewes, "The Great Plains One Hundred Years after Major John Wesley Powell," in B. W. Blouet and M. P. Lawson, eds. *Images of the Plains* (Lincoln: University of Nebraska Press, 1975), pp. 203-14; Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979).

4. Public Works Administration, *Report of the Mississippi Valley Committee* (Washington: U.S. Government Printing Office, 1934), p. 177.

5. U.S. National Resources Board, *Report* (Washington: U.S. Government Printing Office, 1934), pp. 323-24.

6. Report of the Great Plains Drought Area Committee, August, 1936, n.p.

7. Francis D. Cronin and Howard W. Beers, *Areas of Intense Drought Distress, 1930-1936: Research Bulletin* (Washington: Works Progress Administration, 1937).

8. C. W. Thornthwaite, Chapter 5, in Carter Goodrich, et al. *Migration and Economic Opportunity* (Philadelphia: University of Pennsylvania Press, 1936).

9. U.S. National Resources Board, *Report*, p. 374. Robert E. Horton in a section of this report opened up the systematic analysis of supplemental irrigation.

10. U.S. National Resources Committee, *Drainage Basin Problems* (Washington: U.S. Government Printing Office, 1936).

11. C. F. Marbut, *Soils of the United States* (Washington: U.S. Government Printing Office, 1935).

12. H. L. Shantz, "The Natural Vegetation of the Great Plains Region," *Annals of the Association of American Geographers* 13 (1923): 81-107.