



Voluntary Conservation on Private Lands

Core Concepts Linked to Historical Quotes and References

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"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value."

Theodore Roosevelt, 26th U.S. President, August 29, 1910

"The landscape of any farm is the owner's portrait of himself."

Aldo Leopold, "The Farmer As Conservationist", 1939

"From every conceivable angle - economic, social, cultural, public health, national defense - conservation of natural resources is an objective on which all should agree."

Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, 1959

"But fifty years have taught us that no single program, no single agency, no single organization can solve the nation's soil and water resource problems alone. No single approach - federal, State, or local has all the answers."

Peter C. Myers, Chief, USDA Soil Conservation Service, April 1985

1. Conservation Defined

Conservation is the “wise use and management” of natural resources, different and distinct from protection and preservation. Within a landscape or watershed, or on a farm/ranch, conservation, protection, and preservation can each play important and complementary roles.

Conservation sustains and can improve the natural resource base through active management, while ensuring its sound use for production. It is the scientific use of land; that is, the use of the land according to its capabilities, its needs, and within the limits of economic practicability so that it remains permanently productive.

Protection ensures the resource base is not degraded, but may not entail active nor managed use of the natural resource base, nor the improvement of it.

Preservation saves the natural resource base as is, but with no consumptive use of it such as for agricultural production.

T.W. Christensen

“Conservation means development as much as it does protection. I recognize the right and duty of this generation to develop and use the natural resources of our land; but I do not recognize the right to waste them, or to rob by wasteful use, the generations that come after us.” Theodore Roosevelt, 26th U.S. President, Osawatomic, Kansas, August 31, 1910.

“I agree with you that terracing is a valuable means of preventing soil erosion, but it does require discriminating use. There are undoubtedly areas where reseeded and other vegetative means may be employed more satisfactorily. There is also the possibility, in some areas, of so changing uses to which the land is now put - - putting more land in grass and trees and less in cultivated crops, for example - as to offer considerable hope.” Franklin D. Roosevelt, 32nd U.S. President, to Reverend A.C. Miller, Editor, The Arkansas Methodist, Little Rock, Arkansas - - March 22, 1935.

“Conservation, then, is keeping the resource in working order, as well as preventing over-use. Resources may get out of order before they are exhausted, sometimes while they are still abundant. Conservation, therefore, is a positive exercise of skill and insight, not merely a negative exercise of abstinence or caution.” Aldo Leopold, “The Farmer As A Conservationist”, 1939.

"This leads to the "rule of thumb" which is the basic premise of ecological conservation: the land should retain as much of its original membership as is compatible with human land-use. The land must of course be modified, but it should be modified as gently and as little as possible." Aldo Leopold, "Conservation: In Whole Or In Part", A document in rough draft by Aldo Leopold, 1944.

"The basic physical objective of soil conservation activities by Department agencies shall be the use of each acre of agricultural land within its capabilities and the treatment of each acre of agricultural land in accordance with its needs for protection and improvement." Secretary of Agriculture Charles Brannan's Memorandum 1278, February 15, 1951.

"Land must be expertly cared for if it is to be maintained in a productive state." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

Sound conservation, strong agricultural production, and reasonable economic returns are mutually compatible, not mutually exclusive. Conservation pays, and not just in the long-term.

T.W. Christensen

"Prevention, whatever the cost, is usually cheaper than the cure." Aldo Leopold, Journal of Forestry, May 1934.

"When the land does well for its owner and the owner also does well by his land - when both end up better by reason of their partnership - then we have conservation. When one or the other grows poorer, either in substance, or in character, or in responsiveness to the sun, wind, and rain, then we have something else, and it is something we do not like." Aldo Leopold, "The Farmer As Conservationist", American Forests, Volume I; 5 No. 6, June 1939.

"Many labored arguments are in print proving that conservation pays economic dividends. I can add nothing to these arguments." Aldo Leopold, "The Farmer As A Conservationist", 1939.

"Conservation often pays in the sense that the profitable components can carry the unprofitable ones, just as in any industrial enterprise, a unified purpose involves carrying profitable and unprofitable component enterprises, each necessary to the functioning of the whole." Aldo Leopold, "Conservation: In Whole Or In Part", A document in rough draft by Aldo Leopold, 1944.

"Soil conservation properly done pays back more than it costs - returns more in dollars to the individual farmer than it costs him and puts back more into the federal treasury than it takes out to supply the technical assistance furnished by the Soil Conservation Service to the soil conservation districts." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Progress in Soil Conservation", October 1951.

"It (conservation) both increases per-acre yields and lowers the cost of the production on most farms, and this, in turn, starts a whole chain of benefits, such as increased farmer income; increased taxes for support

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of local, state, and federal governments; increased trade for both rural and urban communities; and increased employment for professional, skilled, and unskilled workers.” Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, “Progress in Soil Conservation”, October 1951.

“There’s more to conservation farming than controlling erosion. It involves the prevention of all forms of soil deterioration, including erosion, more productive use of the rain that falls on the land, proper drainage and irrigation, rebuilding eroded soil, building up soil fertility, and increasing yields and farm income - all at the same time.” Robert Salter, Chief, USDA Soil Conservation Service, September 29, 1952.

“Good, permanently productive land is the basis of our wealth, our health, our happiness, and our peace - - here and abroad.” Wilbur Mills, Congressional Representative, Arkansas, Testimony on Department of Agriculture Appropriations for the Soil Conservation Service for 1957, February 27, 1956.

“The time spent in working up a farm (conservation) plan is the cheapest and most worthwhile investment a farmer can make.” Bud Mekelburg, Yuma SCD Supervisor, Colorado in “What Farmers and Ranchers Say About Conservation Plans”, in “Soil Conservation”, February 1961.

“Most farmers who carry out conservation programs on their farms are more efficient and have higher sustained incomes than they had before they began this way of farming. In practicing soil and water conservation they protect and improve the land resource base of the Nation. In addition, they add to the economic structure of their communities. Thus conservation farming makes a vital contribution to the rural-areas development.” “What is a Conservation Plan?”, USDA Soil Conservation Service/PA-629, October 1965.

“The question of the propriety of public expenditures for soil conservation on private lands should take into account the fact that not all the benefits of soil and water conservation measures accrue to the owner or operator of the tract of land on which they are installed. This is especially true in watershed situations, where flood and sediment damage to downstream lands and public improvements may be much greater than the erosion damage on individual farms where the problem begins and where it must be attacked.” D. Harper Simms, “The Soil Conservation Service”, 1970.

2. Local Leadership and the Voluntary Approach

Local leadership is vital to the success of voluntary private lands conservation efforts because local leaders know best the conditions and the agricultural setting, have the trust of the community, and operate with keen attention to local needs, expectations, and cultural norms.

T.W. Christensen

"To my knowledge there has never before been a voluntary farm program that has so rapidly captured the enthusiasm of farmers, or one that has attained such widespread popularity. There is no question about it; farmers want to do soil conservation work and they like soil conservation districts." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "A National Program of Soil Conservation" in "Journal of Soil and Water Conservation", Volume 1, No. 1, July 1946.

"We have the knowledge of how to do the job; the conservation tools have been perfected and tested; we have an organization equipped not only with the necessary technical skills, but with the knowledge and understanding to work with local people - individual farmers, community groups, organized districts and associations, city people, and industries as well." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, August 11, 1951.

"I consider the soil conservation district movement one of the most important developments in the whole history of agriculture." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"I believe that more technical assistance should be provided for the districts for maintenance of high quality work and to meet increasing demands for land treatment." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"Ours is not a layer-cake form of government but a marble cake. Each level of government makes indispensable contributions." Philip M. Glick, "The Politics of Conservation", Journal of Soil and Water Conservation, September/October 1982.

Private lands conservation should remain predominantly a voluntary approach with local leadership for its continued viability and vitality. Limited regulation has had some applicability for unique circumstances but should not grow in scope nor become the norm. There is no better proven alternative for landowner/landuser "buy-in" and "ownership" than voluntary, coordinated action to implement conservation systems that return benefits to the environment, production, and economics - - conservation systems that are site-specific, practical, sustainable, and can evolve as needs and conditions change. Because of its flexibilities and adaptabilities, the long-standing local, State, federal, and private sector partnership model works effectively as demonstrated both across the nation and across multiple generations since the late 1930s. To achieve the needed short- and long-term outcomes desired from private lands conservation, voluntary cooperation and action is essential. Within the context of voluntary conservation on private lands, no single approach, program, or entity can achieve these outcomes given the diversity and complexity of the natural resources, operations, and people.

T.W. Christensen

"I feel that the work of the Soil Erosion Service and other federal and State agencies cooperating in erosion control is slowly but surely persuading farmers that such (erosion) control is, in fact, both an individual and patriotic duty" Franklin D. Roosevelt, 32nd U.S. President, Memorandum to the Reverend A.C. Miller, Editor, "The Arkansas Methodist", Little Rock, Arkansas, March 22, 1935.

"The nature of soil erosion, the consequences which follow unrestrained soil washing and blowing, and the character of conservation measures are such that a cooperative attack on the problem appears to be the only feasible way of reaching a solution." "Soil Conservation Districts for Erosion Control", USDA Soil Conservation Service, Miscellaneous Publication No. 293, October 1937.

"National conservation action must spring from people on the land, and to a large extent, be advanced by them as individuals, with the help of government." Hugh Hammond Bennett, Chief, USDA, Soil Conservation Service, 1939.

"National action may be led and aided by government, but the soil must be conserved ultimately by those who till the land and live by its product." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, 1939.

"Acts of conservation without the requisite desires and skills are futile. To create these desires and skills, and the community motive, is the task of education." Aldo Leopold, "Conservation: In Whole Or In Part", A document in rough draft by Aldo Leopold, 1944.

"...Is there an alternative to the kind of soil conservation program (voluntary, locally led) I have described? I know of only two: outright and absolute government regulation on the use and treatment of all lands, or despicable abandonment of hope. Which of these (three alternatives) do you prefer?" Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, Journal of Soil and Water Conservation, July 1946.

"Our American experience, however, has apparently developed a majority feeling to the effect that our soil conservation effort should, insofar as security permits, proceed along lines of cooperative action, with the use of compulsion at any point, at least not until there has been time for adequate education and farmer response." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"Yet, we must also recognize the fact that the people who own and use the land hold the key to conservation progress - - that conservation is not achieved by dictation but by people exercising freedom of choice, usually motivated by the opportunity to better their way of living." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Report of the Administrator, Soil Conservation Service, 1960" in "Soil Conservation", February 1961.

"If it is not the farmer's or rancher's plan, and regarded as such by him, we cannot expect it to result in sound conservation on the land." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Farm and Ranch Planning - The Base for Full Conservation" in "Soil Conservation", February 1961.

"For much of the early 1970s we heard forecasts that voluntary programs were dead, that they would never be able to cope with environmental problems. But as programs have been developed and tested, that assessment has dramatically reversed. Today in nonpoint-source pollution control programs virtually everywhere, the voluntary programs of conservation districts are being looked upon as the major thrust; regulatory programs are viewed mainly as backup efforts. We do not need to spend another 10 years relearning that voluntary programs work if they are given a chance, and our new emphasis on soil and water conservation can begin on that basis." Lyle Bauer, President, National Association of Conservation Districts, "Foreword" in "Soil Conservation Policies - An Assessment", Soil Conservation Society of America, 1979.

"We do far more through cooperative action by the federal government, the State Government, and the local government than we do separately." Philip M. Glick in "The Preparation of the Standard Soil Conservation Districts Law: An Interview with Philip M. Glick", Douglas Helms, USDA Soil Conservation Service, 1990.

"We've got a job ahead of us. And what's at stake is our voluntary approach to agriculture - the approach that makes the family farm the envy of the world. I'm convinced of that, and I will never forget a Congressional hearing where the first words directed at us were 'Please tell us why you people in agriculture shouldn't be regulated'." William Richards, Chief, USDA Soil Conservation Service, March 12, 1992.

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"And I think we can keep our voluntary system if we are proactive; if we articulate what we're for, instead of what we're against; if we look for the opportunities and rewards that come from meeting the environmental challenges; and if we use the best technology available for growing food and fiber in such a way as to protect our soil and water." William Richards, Chief, USDA Soil Conservation Service, March 17, 1992.

"I don't think we can regulate our way to sound conservation. But we can make the changes that will help this nation's private landowners do their job." Richard Rominger, Deputy Secretary of Agriculture, "Building on Leopold's Legacy", Wisconsin Academy of Sciences, Arts, and Letters; Madison, Wisconsin; October 5, 1999.

"Based on 70 years of experience, lessons learned, and success stories to date, the USDA remains a proponent of the voluntary, locally led, incentives-based approach as the principal means to help agricultural producers reduce the environmental consequences of production. Environmental regulation has a proper role, as evidenced by EPA's Concentrated Animal Feeding Operations Rule for the largest animal feeding operations, but it is largely a complementary role - providing the vehicle for regulatory authorities to address the actions of "bad actors" and/or set expectations for sensitive areas subject to the greatest environmental risk." Thomas W. Christensen, Director, Animal Husbandry and Clean Water Programs Division, USDA Natural Resources Conservation Service, "Impacts of Nonpoint Source Pollution on Drinking Water and Human Health" in "From Source Water to Drinking Water", Workshop Summary, Institute of Medicine of the National Academies, The National Academies Press, 2004.

The voluntary approach recognizes and respects the role and responsibilities of the private landowner/landuser as the decision maker. Professional conservationists serve to assist these decision makers through resource inventories and assessments, information and education, technical expertise and experience, alternative recommendations, and sometimes with financial assistance. The landowner/landuser, however, is the decision maker who is better informed and positioned to take sound conservation action(s) because of the professional conservationist's assistance.

T.W. Christensen

"In this democracy, national action to conserve soil must be generated by these millions of land users. If they are active and willing participants in such a movement, it will endure; otherwise it will fail." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, 1939.

"Many farmers - most farmers, and that means millions - need some technical help in making the change to this more efficient, easier, and more productive type of farming, and they also need moral support and encouragement." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, September 18, 1943.

"Efficient application of conservation measures to land requires the technician's presence out on the land." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Elements of Soil Conservation", 1947.

"This method of working out conservation farm plans according to the capacity and needs of the land is the only practical way to get the right kind of program on the land. Farmers like this cooperative method; they understand it. It makes them the final judge as to what is to be done." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "OUR AMERICAN LAND: The Story of its Abuse and its Conservation, USDA Soil Conservation Service Miscellaneous Publication No. 596, 1950.

"As early as 1935, we reached the decision that two main things were necessary to insure adequate progress: (1) That the services of trained soil conservationists should be made available to all farmers and ranchers who desired such service, to help them make the conversion to conservation farming methods; and (2) that some type of local governmental units should be established to assist in bringing about the necessary cooperative action and to place responsibility for the execution of the conservation job on the local people who were intimately associated with the conservation problems of any given community." Hugh Hammond Bennett, "Progress in Soil Conservation", October 1951.

"And that is most important of all - the fact that the farmer or rancher does have a choice and that the conservation plan is his plan, not an SCS plan. A good conservation plan is simply a record of the farmer's or ranchers decisions on how he will use and treat his land, after considering the alternatives with the conservation technician." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Farm and Ranch Planning - The Base for Full Conservation" in "Soil Conservation", February 1961.

"The goals are individual. The farms and ranches are individual. The complexities are many. Guided by sound theory, a soil map, and knowledge of how the soils respond to alternative combinations of practices, an individual plan can reduce the complexities to practical terms for efficient operation. Only with such a plan can a system be developed that makes maximum use of skills, labor, and investment of the operator." Charles E. Kellogg, "Basic Theory of Soil Conservation Plans" in "Soil Conservation", February 1961.

"What the Soil Conservation Service needed was a representative who could walk over a man's land with him, lay out a conservation plan, and come back to help him install the more difficult practices and structures." Robert J. Morgan, "Governing Soil Conservation: Thirty Years of the New Decentralization", 1966.

"Good conservation is good business, and when we make conservation more accessible -- getting the right information in the right hands at the right time -- great stewardship is inevitable." Arlen L. Lancaster, Chief, USDA Soil Conservation Service, 2006 - 2009.

"The quality of the environment depends upon the quality of the decisions made by the men and women who own and operate our private lands." Dave White, Chief, USDA Natural Resources Conservation Service, 2009 - 2012.

3. Veracity, Credibility, and Viability

Science and technical expertise/information/tools are the foundation of voluntary private lands conservation assistance and must be held to consistently high standards, be current, and instill credibility and trust. Avoid “false precision” with the use of technical tools and recognize the precision is only as good as the quality of the data and information gathered by the conservationist. Know and remain true to the assumptions and processes that underlie technical tools, their intended use, and their limitations.

T.W. Christensen

“Almost invariably, conservation farming - which, after all, is common sense farming with scientific methods - begins to show results the very first years it is applied.” Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, September 8, 1943.

“To undertake to stimulate, collect, and put to use the best scientific thought, in and out of government circles, on soil and water conservation.” Ralph H. Musser, First President of the Soil Conservation Society of America, “Why Another Society”, Journal of Soil and Water Conservation, V. 1, No. 1, July 1946.

“We must keep in mind that the proper use and treatment of land and the water associated with it calls for our best efforts in applying the sciences of soil, agronomy, forestry, biology, hydrology, hydraulics, and related fields in a coordinated program, as called for by each specific situation - that any resources conservation program is only as sound as the technology on which it is based.” Donald A. Williams, Administrator, USDA Soil Conservation Service, “Report of the Administrator, Soil Conservation Service, 1960” in “Soil Conservation”, February 1961.

“A Sand County Almanac has become the bible of modern conservation for good reason - because science talks. And it talks, more especially, the language of the tough-minded who invariably sit in the seats of political, economic, and judicial power.” J. Baird Callicott, “The Scientific Substance of the Land Ethic” in “Aldo Leopold - The Man and His Legacy”, Soil Conservation Society of America, 1987.

“As technology changes and exerts impacts on many aspects of our lives, it is essential that NRCS maintain its credibility as a source of technical advice. To do this it must possess the right skills and be responsible and adaptable, and the agency must, therefore, make every possible effort to ensure that field offices operate with as much flexibility as possible within the constraints of good management.” “Data Rich and Information Poor”, A Report to the Chief of the Natural Resources Conservation Service by the Blue Ribbon Panel on Natural Resource Inventory and Performance Management, USDA Natural Resources Conservation Service, November 1995.

"Effective stewardship depends on having science-based information and technology that are up-to-date, easily accessible, and designed to meet user needs." "Productive Lands, Healthy Environment", USDA Natural Resources Conservation Service Strategic Plan, 2005 - 2010.

"...Conservation planning is a proven, science-based process to support land managers' decision-making on conservation systems that will meet their natural resources and economic objectives." Jason Weller, Chief, USDA Natural Resources Conservation Service, Testimony Before House Appropriations Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, February 26, 2016.

Results, transparency, and accountability are essential to the continued veracity and viability of the strategies and programs that support voluntary private lands conservation. Conservation plans should lead to the implementation of conservation practices/systems that perform as expected, deliver projected benefits, and instill continued confidence and credibility. Program offerings and associated criteria and procedures should be transparent, practical, and readily understood. Professional conservationists and technical support staff, both in the public and private sectors, should demonstrate a strong customer service ethic and be accountable for the integrity, quality, and responsiveness of their actions in support of the decision-makers who own and/or operate the land.

T.W. Christensen

"Unless you do your job well, and unless districts succeed, we run the risk of losing our soil. We also run the risk of inviting government land regulation or of reverting to the old ineffectual demonstration methods of the past. Neither of the alternatives is anywhere near as desirable as success with the program we now have in conservation districts." E.C. McArthur, First President of the National Association of Soil Conservation District Governing Officials, August 1946.

4. Conservation Systems Approach

Conservation on working lands is about systems of practices that work in unison to create synergy - - not about prescriptive best management practices (BMPs) and generally not about single conservation practices. BMPs may or may not: a) meet NRCS conservation practice standards, b) have the same science foundation and technical underpinning of a conservation practice and system, and 3) have the same site-specificity that is enabled by practice specifications that can be applied to practice standards that are developed through practical field trials.

T.W. Christensen

"But the application of single unrelated practices may increase the conservation risks of a whole farm or ranch instead of solving the problems if they do not fit into a coordinated plan for the entire unit." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Farm and Ranch Planning - The Base for Full Conservation" in "Soil Conservation", February 1961.

Reference: "Where Do Agricultural BMPS Come From", Thomas W. Christensen, Director, and Jeff Loser, National Leader for Clean Water Programs, Animal Husbandry and Clean Water Programs Division, USDA Natural Resources Conservation Service, Paper in "TMDL Science Issues Conference Proceedings", March 4 - 7, 2001.

Conservation systems address both on-site needs and off-site impacts. These systems provide both on-farm/ranch and off-farm/ranch environmental benefits, a key basis for the public sharing of the costs of their implementation. Other reasons for the public sharing of costs include using conservation systems to improve fish and wildlife habitat, to reduce agricultural production through land use changes in times of surplus, and to help maintain the viability and vitality of U.S. agriculture. Farmers and ranchers generally have limited to no ability to directly pass on these associated conservation system implementation costs in the commodities and products they sell.

T.W. Christensen

"How fast America adopts soil conservation measures depends mainly on how well and how widely the merits and rewards of conservation are sold. Only when the idea is sold to the point of arousing action does conservation come to reality." J.J. Case Company, "Conservation Calls for Selling", July 1946

"It of course goes without saying that economic feasibility limits the tether of what can or cannot be done for land. It always has and it always will." Aldo Leopold, "A Sand County Almanac and Sketches Here and There", 1949.

"Modern conservation does much more than safeguard land. It directly or indirectly results in a wider variety of fundamental benefits." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Progress in Soil Conservation", October 1951.

"Since society as a whole depends on the produce of the land for its present and future existence, society as a whole must share in the responsibility and costs of maintaining land in a productive state." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"The public funds we spend for private lands conservation is one of our government's wisest investments, achieving multiple conservation benefits from modest expenditures on research, technical and financial assistance, and targeted land retirement." Dan Glickman, Secretary of Agriculture, "A Conservation Legacy" in "America's Private Lands: A Geography of Hope", Program Aid 1548, December 1996 (Slightly revised June 1997).

Natural systems are a wholly integrated mixture of the resource base (soil, water, plants, air, and animals) and are greatly impacted by human actions. Conservation planning and implementation must account for this resource base integration and human actions for conservation systems to be effective and sustainable. To have the greatest beneficial impact beyond the farm or ranch, coordinated action must also be taken throughout the landscape or watershed.

T.W. Christensen

"The immediate task ahead is to agree upon a simple procedure of cooperation and coordination, whereby the engineers and agriculturalists will be working and thinking and planning along the same lines, and for a common purpose. When such a procedure is mutually understood and cooperatively put into effect, I am confident that we shall then be definitively on the way to success." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Management and Use of Agricultural Lands Including Farm Woods and Pastures", September 22, 1936.

"The coordinated use of these (conservation) measures, each being applied to that portion of the land adapted to its use, should result in the maximum conservation of both soil and water, should improve the

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wildlife environment, and should be a helpful step toward flood control." "OUR SOIL - Its Wastage - Its Preservation", USDA Soil Conservation Service, Region Seven, Issued 1936, Revised 1938.

"The land consists of soil, water, plants, and animals, but health is more than a sufficiency of these components. It is a state of vigorous self-renewal in each of them, and in all collectively. Such collective functioning of interdependent parts for the maintenance of the whole is characteristic of an organism. In this sense land is an organism, and conservation deals with its functional integrity, or health." Aldo Leopold, "Conservation: In Whole Or In Part", A document in rough draft by Aldo Leopold, 1944.

"The objective of conservation planning is a soil and water conservation program that coordinates the physical, economic, and human resources on the farm or ranch to achieve the highest personal goals of the land owner and operator, to benefit the whole community, and to meet the longtime needs of our Nation." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Soil Conservation", February 1961.

"All of this will require a different approach to natural resource management. Natural resource supplies will have to be viewed in terms of the effect each element of a farm ecosystem has on the others. Woodlands, soils, water, and energy should be managed together rather than controlled separately." Jane Yarn, Member, Council on Environmental Quality, "Natural Resources in an Age of Uncertainty" in "Soil Conservation Policies - An Assessment", Soil Conservation Society of America, 1979.

"In my remarks on balancing the short-term and long-term needs of our environment and our economy, I stated that we have to start addressing our concerns for what they are - an interlocking system of natural resources and land management systems." Galen S. Bridge, Acting Chief, USDA Soil Conservation Service, March 1993.

The application of lessons learned, the use of adaptive management, and a commitment to continuous improvement are critical to the success and long-term viability of private lands voluntary conservation efforts.

T.W. Christensen

"All adaptable means required to achieve this permanent productivity of the soil constitutes the tools of conservation, whether they are used singly or in infinite combination." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Elements of Soil Conservation", 1947.

"Adaptive management can be an effective tool for supporting agricultural conservation efforts. The principle of adaptive management requires that interventions be continuously assessed and refined to achieve maximum efficiency." Andrew Manale, Andrew Sharpley, Catherine DeLong, David Speidel, Clark Gantzer, John Peterson, Rex Martin, Clare Lindahl, and Naveen Adusumilli, "Principles and Policies for Soil and Water Conservation", Journal of Soil and Water Conservation 73(4): 96A - 99A, July/August 2018.

5. Conservation Planning

The conservation job is never done and the conservation plan is a “living” document because it is about meeting the challenge of managing natural resources in the context of continuous change, including: new technologies and innovations, improved scientific understanding, changing climate and crop varieties, farm/ranch operational changes, regulatory influences, evolving public expectations, the application of lessons learned, and dynamic economic considerations.

T.W. Christensen

“In other words, the treatment must fit not only the needs and capabilities of the land but the adaptations of the farmer as well.” Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, September 18, 1943.

“We are all aware that conservation and conservation concepts are an everchanging thing in light of new technology and farming methods. Constant vigilance is required to shed the habits of yesteryear and bend with these changing times.” Norman A. Berg, Associate Administrator, USDA Soil Conservation Service, October 6, 1969.

Conservation planning and implementation with individual landowners/landusers is both time and transaction intensive, generally requiring repeated interactions from initial assessment of resource conditions and needs, through to alternatives development and selection, to implementation over time, and including followup for improvement modifications. Given the associated workload and time demands, efficiency and effectiveness are trademarks of the highest producing field conservationists. Continuous improvement in business processes, tools, and supporting information technology systems is essential if we are to position and equip field conservationists to deliver quality products that are credible, farmer- and rancher-friendly, timely, and repeatable.

T.W. Christensen

5. Conservation Planning

"We have found there is no blanket, short-cut method for getting the conservation job done. There is no quick and easy way out." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"We cannot depend on windshield surveys and office planning to carry out a job of the complexity and magnitude of safeguarding our farmland and controlling floods." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"True communication with meaningful recommendations at the landowner level is the secret of credibility." Floyd E. Heft, Chief, Division of Soil and Water Districts, Ohio Department of Natural Resources, "Alternative Strategies for Soil Conservation Policies: A Nonfederal View" in "Soil Conservation Policies: An Assessment", Soil Conservation Society of America, 1979.

The focus of conservation planning is increasing the voluntary adoption of the right conservation systems, positioned correctly in the farm or ranch setting, using the right scope and amounts, and including the right timing and sequencing of the component conservation practices (progressive planning and implementation). Conservation systems must be practical and fit within the context of the farming or ranching operation - - its needs, its capabilities and capacity, and its economics. Conservation plans should foster ease of implementation, achievement of desired results, adaptive management, and continuous improvement.

T.W. Christensen

"There is no virtue in planning merely for the sake of planning. Unless plans can be translated into action, planning becomes a profitless mental exercise." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, 1939

"Single practice soil conservation programs have never been successful on cultivated land in terms of real and lasting conservation. They can't be successful in the great majority of cases because a single conservation practice is almost always inadequate to cope with the diverse and complicated requirements imposed by nature for sound land use and protection." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Progress in Soil Conservation", October 1951.

"It is true that a farm or ranch conservation plan is only the beginning and it is of little value unless the cooperators' decisions are carried out. But the importance of the plan lies in the fact that the needed land use changes and conservation practices seldom will be applied in the right way and in the right

sequence without a good plan." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Farm and Ranch Planning - The Base for Full Conservation" in "Soil Conservation", February 1961.

"A conservation plan is a state of mind. It's like a big idea you have in your head all the time; and every time you fly over your range, or ride out on horseback, or put out salt, or do any other job you always have that idea in front of you, and you're looking around to see how you're fulfilling it." Jess McGinley, Rancher with 33,000 acres in Cherry County, Nebraska in "What Farmers and Ranchers Say About Conservation Plans", in "Soil Conservation", February 1961.

"A conservation system, even though it may control erosion and runoff, or provide for orderly water management, it is not acceptable if it does not provide efficient use of costly modern equipment. Basic principles of conservation learned through the years are still sound. The key principles are being woven into new systems of conservation to meet the needs of the modern land user." Norman A. Berg, Associate Administrator, USDA Soil Conservation Service, October 6, 1969.

"Conservation practices, such as crop residue management, nutrient management, integrated pest management, grassed waterways, field borders, and buffer strips, combined into conservation systems, are proven to keep soil and nutrients in place and thereby minimize the risk of contaminated runoff leaving farm fields." Thomas W. Christensen, Director, Animal Husbandry and Clean Water Programs Division, USDA Natural Resources Conservation Service, "Impacts of Nonpoint Source Pollution" in "From Source Water to Drinking Water", Workshop Summary, Institute of Medicine of the National Academies, The National Academies Press, 2004.

6. Field Conservationists' Core Competency

Conservation planning is the professional conservationist's most essential core competency and is both a science and an art, requiring sound knowledge and experience; skill in applying the processes, the tools, and the techniques of the "trade"; and, practical experience in the implementation and maintenance of conservation practices and systems. Conservation planning requires understanding and synthesis of numerous variables and associated data, the application of scientific principles, and keen attention to the operation's needs to achieve a conservation plan that will be implemented, sustained, and improved upon over time.

T.W. Christensen

"Agricultural planning proved to be too complex a task and the responsibility too great to be left wholly in their (specialists) hands." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "Planning for a Permanent Agriculture", USDA Miscellaneous Publication 351, June 1939.

"In a sense, Soil Conservation Service technicians are land doctors, who have learned that halfway measures and improperly applied practices not only fail to get the job done but often do more harm than good over a period of years." Cal L. Ranch, "What Farmers and Ranchers Say About Conservation Plans" in "Soil Conservation", February 1961.

"The conservation planning process is systematic decision-making, based upon a logical evaluation of the alternatives for land use and treatment." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Farm and Ranch Planning - The Base for Full Conservation" in "Soil Conservation", February 1961.

"Practically all farmers need the specialized scientific assistance of experienced technicians on the ground to help them solve their more complex land and water problems." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"The heart of the soil and water conservation job in conservation districts was the conservation plan, a guide to land use and conservation treatment. Tailored to each farm or land unit, it is developed by the

farmer and a professional conservationist working together." R. Neil Sampson, "For Love of the Land: A History of the National Association of Conservation Districts, 1985.

"Everything that happens begins with our basic conservation technical assistance, and as producers decide to adopt specific plans or practices, they may build on that technical assistance by utilizing the financial assistance available from the suite of Farm Bill programs." Arlen Lancaster, Chief, USDA Natural Resources Conservation Service, January 17, 2007.

We must seek to recruit and develop field conservationists that perform with passion and perseverance (grit) and who strive to become well-rounded, balanced, "complete package" conservationists - - akin to a "5-Tool" baseball player. To use this baseball analogy, a "5-Tool" field conservationist seeks to be the "best in class" and would be proficient at:

- **"Hitting for average" (conduct efficient and effective inventory and assessment of resource conditions, and assist the farmer/rancher to plan for conservation systems consistent with his/her needs, capabilities, and available resources),**
- **"Hitting for power" (design and help the farmer/rancher implement conservation practices/systems efficiently, correctly, at the right time, and in proper sequence),**
- **"Fielding well" (carry out follow-up timely and efficiently to aid the farmer/rancher with adaptive management and continuous improvement of the conservation systems),**
- **"Throwing well" (inform, educate, promote, and sell voluntary conservation with grit and integrity to individuals, groups, partners, and other stakeholders), and**
- **"Running the bases well" (lead and supervise other professional conservationists for results, continuous learning and growth, and with accountability).**

T.W. Christensen

6. Field Conservationists' Core Competency

"In the person of the soil conservationist the nation now has a professional worker whose greatest value lies in his personal proficiency in several agricultural sciences and in his ability to bring this knowledge to bear, in proper proportion and perspective, on the everyday farm problems of soil and water conservation. To put it another way, the soil conservationist is a practical technician - a soil conservation scientist - capable of recognizing the ordinary needs of land for conservation of soil, water, and productivity, and who also has the ability to apply skillfully - scientifically - the various conservation techniques either singly or in combination, as needed." Hugh Hammond Bennett, Chief, USDA Soil Conservation Service, "A National Program of Soil Conservation" in "Journal of Soil and Water Conservation", Volume 1, No. 1, July 1946.

"The principle of using combinations of coordinated skills or techniques of sound agriculture is part of the basic concept of permanent soil conservation - or modern soil conservation as it is sometimes called." Hugh Hammond Bennett, Former Chief, USDA Soil Conservation Service, Lectures at NC State University, January 15, 1958 to February 12, 1959.

"All this means that a successful conservationist today must not only be a sound technician in his field, but also a student of human relations and be informed about the sociological changes that are coming so rapidly. He must understand that the people who own and use the land exert the dominant influences in determining the what and the how of a conservation program." Donald A. Williams, Administrator, USDA Soil Conservation Service, "Report of the Administrator, Soil Conservation Service, 1960" in "Soil Conservation", February 1961.

"We will need scrapping, adventurous, hard-driving soil conservationists and conservation programs in the 1980s." M. Rupert Cutler, Assistant Secretary for Natural Resources and Environment, USDA, "Alternative Strategies for Soil Conservation: A Federal View" in "Soil Conservation Policies - An Assessment", Soil Conservation Society of America, 1979.

"I believe that it is essential that SCS play an active role in setting the conservation agenda in the future. This means that SCS must continue to have a strong, well-trained and well-equipped workforce at the field level to provide high quality technical assistance and information to a varied clientele." William Richards, Chief, August 30, 1991.

"It was this combination of passion and perseverance that made high achievers special. In a word, they had grit." Angela Duckworth, "GRIT - The Power of Passion and Perseverance", May 2016.

7. Reducing the Administrative Burden

Constant diligence is essential to reduce the administrative burden on field conservationists so they can focus on the art and science of conservation planning and implementation. “Let conservationists be conservationists” - not administrators. Push the envelope to foster innovation that affords field conservationists the opportunity to spend a greater proportion of their time on conservation planning and implementation in direct support of landowners/landusers.

T.W. Christensen

“We have engineers, agronomists, soils men (and women) and technical men (and women) of all varieties visiting the (demonstration) projects but the only point where the field is weak is on administration. If this can be straightened out, I think our burden will be lightened by 50%.” William Stephenson, Chief of Operations, Soil Erosion Service, Memorandum to Hugh Hammond Bennett, Director, USDI Soil Erosion Service, June 18, 1934.

“Hold all administrative and overhead costs in all offices to the minimum consistent with efficient management, in order that the greatest possible part of the resources provided to the Service may be available for work on the land.” “Basic Policies and Functions of the Soil Conservation Service”, USDA Soil Conservation Service, August 1945.

“All administrative and technical support should be focused on helping field offices get their job done.” Wilson Scaling, Chief, USDA Soil Conservation Service, “SCS Current Developments”, March 1989.

“The Federal agencies must direct their programs and personnel for maximum effort at the field level. This means eliminating excessive and expensive administrative personnel and/or assistants by 30 to 40 percent.” Floyd E. Heft, “Alternative Strategies for Soil Conservation Policies: A Nonfederal View” in “Soil Conservation Policies: An Assessment”, Soil Conservation Society of America, 1979.

“NRCS and partner field conservationists are the backbone of our national, State, and local delivery of conservation assistance to private landowners. NRCS’ best use of limited resources for automation efforts must focus first on the field conservationists. The more we can capitalize on the strategic use of field-level information technology to return these individuals to the field, where they can work hand-in-hand with individuals, groups, and communities, the more effective NRCS and our partners will be in meeting the call to action put forth in America’s Private Lands, A Geography of Hope. Our field conservationists deserve technology tools that first and foremost help them meet customer expectations for data, information, and alternative solutions to conservation needs.” Thomas W. Christensen, Chief Information

7. Reducing the Administrative Burden

Officer, USDA Natural Resources Conservation Service, "Future Directions: A Vision of Information Technology for Field Conservationists", August 1997.

"The Conservation Delivery Streamlining Initiative (CDSI) is crucial; it is going to let our conservationist professionals spend most of their time doing what they love to do, what they were trained to do, and what we need them to do - - providing direct service to our customers." Jason Weller, Acting Chief, USDA Natural Resources Conservation Service, "Next Steps with NRCS", Email Message to All NRCS Employees, December 5, 2012.