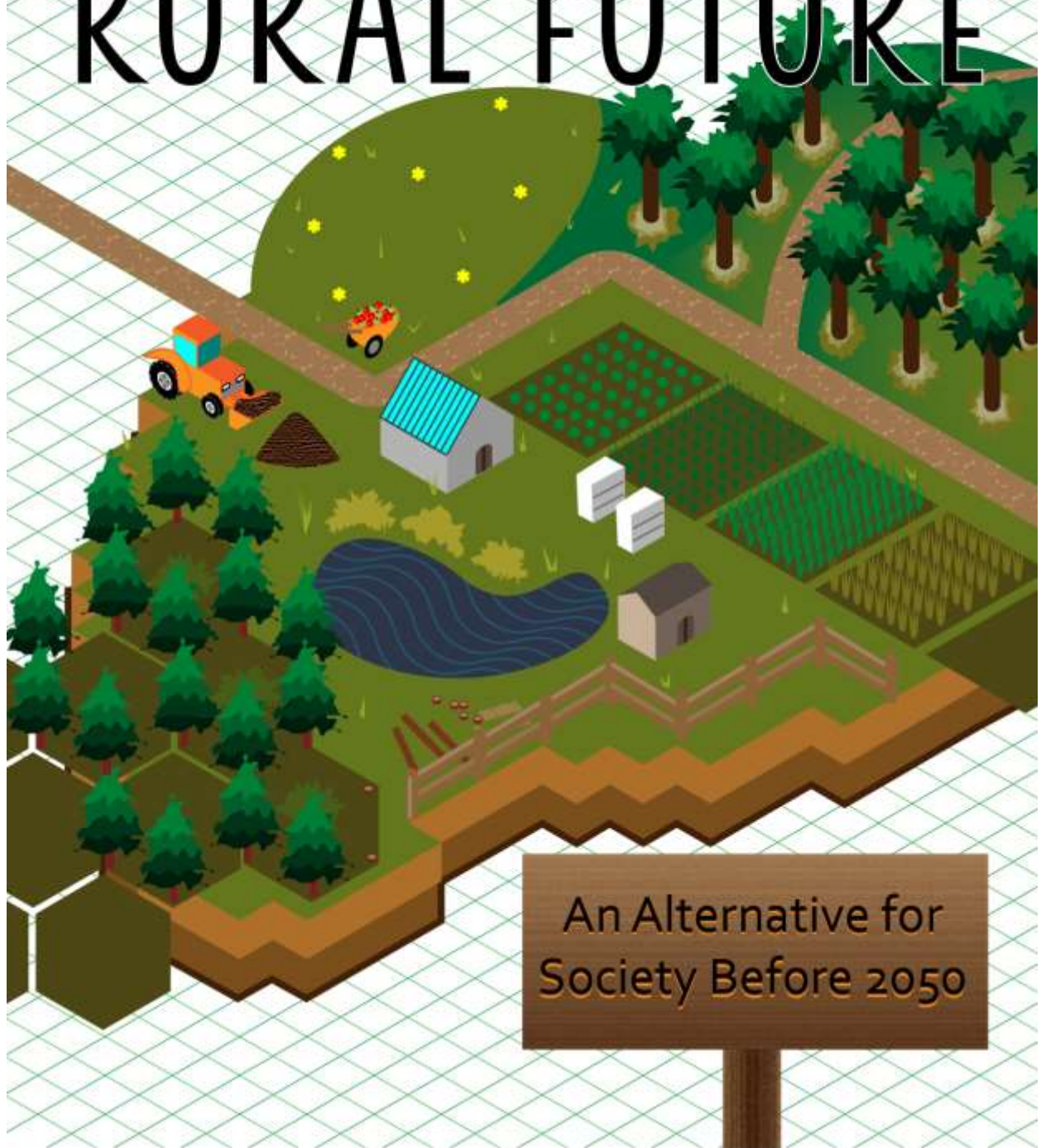


RURAL FUTURE



An Alternative for
Society Before 2050

Rural Future

An Alternative for Society Before 2050 AD

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Appendix Two

Rural System Founding Premises and Promises

We see parts of Rural System from the realm of regional poverty that may spell failure for us, but we overcome persistent negativity within the synergism of our premises, given below.

Premises, children-like, have been expensive to develop as any parent will agree. There may be elements here of a theory of rural land and water use for future societies. Premises here have been hiding or I would have found them before; silent or I might have heard them, but like bird-calls in a distant land, I would have not recognized them or their species or their nests. I want to share them with you for your use, additions, and the good of us all. You will recognize them from other chapters herein:

- The modern system of general systems theory (Chapter 2) is the only likely pathway for success in avoiding a collapse of civilization reaching profound food limits by 2050 AD. Similar stress in shortages of high quality water is estimated for 2030 AD.
- Defining “rural” is “fiddling while Rome burns.” While interesting and valuable to some, such talk can be delayed as the nation urbanizes. Rural System cautiously engages The Border Group (Chapter 11), between urban and rural.
- It is essential for resource managers to make money, i.e., reduce costs and losses, and concentrate on measurable net financial results in their decisions and careers. Adequate or increased money is likely the only currently functional, broad-scale incentive for responsible resource management.
- The football analogy needs thought and discussion. Now it is time to concentrate on a total rural and natural resource enterprise. We can be independent ... and lose something we hold in common, the vital country, and our rural regions. We need group work. The team, as in football, is essential for natural resource management success and that can be measured in the clear objective of significant, stable profitability for educated citizens.
- The *farm* is not the step to a solution, nor a single, high-value, commodity-production unit, nor even a perceived average of a list of superior farms! A distant solution is a *Conglomerate*, a single supra-regional system of many parts or subsystems. The parts are ownerships, clusters of ownerships, Corporate Service Groups primarily serving other Groups within Rural System, and Functional Groups. These separate Groups are all computer-aided and working together with a profit incentive.
- The Rural System lasting objective is to gain annual, bounded, significant profits, not farming or yields of fish or board feet of lumber. Thus, gains are to be made on each property or ownership as well as off of it, with integral attachments and service-units. Together, the complex profits need to be responsive to existing or potential markets outside the ownership, or clusters of ownerships, within the region and beyond. Maximum profits are not the lasting objective; adequate, bounded profits is the objective, and we may therefore find *continual* success, thus a surplus with which to stay within

bounds. The result will be banking, savings, and investment options in more areas, general dispersion, then studies, and then related diversification toward the same objectives, Earth-around.

- The market for products, services and benefits is now international, not neighbor-to-neighbor; we are connected by satellites. The economy of the successful farmer is much more complex than the average small family can maintain, especially now, and must include the changing economy of crops and livestock, but also changing technology, international markets, land value, college expenses, investments, family and regional health, potential catastrophe, and more.
- High technology education, with rewards centered on behavioral change, can become a base of local and expanding salaries and quality of life.
- We continue to reject “sustained” as a resource objective. I use “lasting” and have discussed “sustain, sustained, sustainable, sustainability” (Chapter 3). I fear the present rates of change in populations, environmental degradation, and many aspects of the human condition, even rural research and its results applications, and I beg others to *change them* toward precise, decided objectives for tomorrow, not to sustain them as they *now* exist!
- We have found a way to avoid many “boom-and-bust” periods using our CAT software (Chapter 4). Ecological succession models can now be processed with Microsoft Excel for diverse uses within Rural System. We work with CAT, Computer-Aided Transition software, curves describing start-up of sites after fire, flood, and soil slippage, as modified by the dominant nearness factor(s).
- The beaver premise is that, like beaver families with their secure, intensively-built dams, the animals are genetically predisposed to move upstream regularly and build a dam. Every Group within Rural System must be prepared for destruction (known and novel types), for rebuilding, and for area or basic-resource expansion. Within Groups, this premise reflects an intrinsic, “place-based” epistemology (Chapter 5) as well as a “genetic base,” with high survival value for the species.
- The more common, the surer of knowledge by “many people,” the greater is the need for intensive scrutiny, tentative rejection, and testing of a well-formulated counter hypothesis. This is described in the story about Dr. Heikkenen and his bark beetles (Chapter 8), along with recommended aspects of Rural System forestry.
- “How I know” (anything) is resolved from within the epistemological base (Chapter 5), encouraged for use herein. It aligns with the counterintuitive.
- We often use the concepts of rational robustness (Chapter 6).¹
- A systems approach to rural problems is very powerful. It can be strengthened by embracing it with useful additions of ideas about “temporarily-closed” systems (Context specific), and sequenced and layered systems, with standback, Context, and feedforward.

¹ Giles Jr RH, Oderwald RG, Ezealor AU. 1993. Toward a rationally robust paradigm for agroforestry systems. *Agroforestry Systems*. 24:21-37.

- The system principle feedforward depends on forecasting and futurism, and that, for Rural System, is based on prominent, *new* ideas and developments—few of the past and present.
- Similarly, feedback (corrective and adjusting) is only reasonable with established objectives.
- We must advance data related to *sequence* of events in rural studies. Sequence often has more influence on a named dependent variable than any independent variable or suggested set of such variables.
- Computer use, especially its relations with social media, shape our cultural, technological, conceptual and creative work.
- With computers, we explore vast numbers of real and potential options, and with criteria and constraints, allow the computer to “tell us what to do” —the best, well-constrained options to meet our objectives.
- We discuss and actively question whether our work gains from Robert Reich’s 2008 book.²
- We stay alert to competition and conflict perceived for the near future: interstate game licenses; adjacent, multi-state data sharing; GMO uses; phosphorus fertilizer shortage or alternatives; increasing drug addiction, drug contamination of groundwater; saboteurs; poisons and pollution affecting wild fauna; and lack of low-cost fuels for rural work.
- We work with real things—soil, water, wood, plants, animals, produce—and we communicate often and well.
- Abiotic factors (Chapter 7), especially those within or computed from GIS data, may be and are assumed to be more dominant in rural models, over more species, areas, and periods, than sparse biological data.
- We have advanced an alternative concept for watersheds as Crescents (Chapter 7), allowing uses of GIS and land slope-aspect-elevation relations within the current form to provide useful discrimination on land and runoff.
- Drought tolerance of plants, soil surface albedo and heating, and a selection of plant varieties recognized or advertised as broad in tolerance, need to be studied for use in models.
- We use split applications of injected nitrogen in plant communities and seek an efficient procedure for doing so.
- Drones may fit well into rural land surveys, viewing proportionate allocation of vegetation types, disease notice, wildfire management, wild faunal law enforcement, and services in cattle and timber counts.
- We comprehend that we work with dynamic, complex systems that are well understood; predictable; isomorphic; and often with non-linear elements, changing with “sequence” and from slow, low-probability forces.

² Reich RB. 2008. Supercapitalism: the transformation of business, democracy, and everyday life. New York (NY): Vintage Books.

- “Interactions” is a word abundant in most textbooks about ecology and the environment. I now know none, only “relations,” many, micro and instantaneous, but only for pairs. Return is not essential for a true ecological action.
- *Companion plant* emphasis in gardening has not likely reached into large-area wild faunal management. Proximity, adjacency, or nearness quanta may be more important in analyzing and modeling plant relations and community existence than any other conventional abiotic factor. Adjacency studies (e.g., of the Alpha Units in GIS maps) in the rural area may yield explanatory and predictive models.
- Organisms such as terrestrial snails are integrators of factors of some landscapes, and when located and explored using GIS may become useful; similarly, explorations of human and animal disease related to tree-hole mosquito species are needed if very old trees are favored in carbon-capture tactics.
- Synergism is a positive concept, one of enhancement of effectiveness, or as seen in an *increasing* effectiveness of two combined pesticides. We'll find its negative “sister” concept, more negative than “antagonism.”
- We cannot achieve biodiversity, for we conceive of the now-known and estimated biota, beyond meaning, comprehension, or use, such as current “light years.” We have experimented with biodiversity estimators and, by carefully selecting, can get indices to increase or decrease with the selection of estimator, not the differences in the field.
- Every act has energy cost; controlling and reducing system entropy seems desirable, even essential. To restore land... or anything, has energy costs. Lands and waters can be returned to energy collectors and storage units.
- We work for economics of scale (e.g., numbers sold x price per item per unit time yield mass production phenomena), and the positive dynamic it supports (mitigating succession, aging, depletion, maturing, competitive forces, and accidents).
- The conditions for Rural System success are such that the parts, or even the entire enterprise, need not be “blue-chip,” or able to survive alone. Each has to be reasonable (at least) because the strength and the real performance is from the Group work-unit, the “teams” or “tetrads,” with combined energy, ideas, resilience, and reliability.
- Nodes are the physical and conceptual small points of union with which we work. Primarily, “output” from one program (system) becomes “input” to another at a “node,” an event often chained, suggesting conceptually very linear systems joined, thus a “network.”
- We create useful simulations, following the paradigm of using our knowledge base and models—X becomes all of the conditions for producing a specific, profitable product, and Q becomes those numbered products (i.e., the computer “tells us what to do”).
- Computer-produced messages to staff on *timing* are especially relevant, e.g., crop seed planting, supplies being ordered, bills paid, harvests expected, system calendars, and project reports due.
- We recognize the information of history and of the rural knowledge base, and work actively within Rural System to gain, store, communicate, retrieve, and place that

knowledge into use. Rural System has a “used knowledge” emphasis, with eventual financial rewards anticipated.

- We avoid waste and loss. We do not punish or discount for waste or loss observed, but reward for well-timed and executed performance.
- We rely on strong leadership, both at System Central and Group scales, and with frequent, computer-aided communication for the diverse, often seasonal work—with VNodal being built by all employees and paid advisors.
- We articulate perceived limits or constraints throughout the system, and work to change them as needed, as well as to avoid exceeding them at a given time (exceeding constraints is associated with losses, costs, or dangers, and biological laws of minimum).
- We perceive that Rural System’s comprehensive computer system will yield insights and positive results, unexpected from the successful subsystems themselves.
- We may find great public interest, via various social media, of displayed computer action and in-field results.
 - With ecology dominant in Rural System, we study relationships and relations in general.
 n^2 – all members of a 5-person committee send at least one note to each other = 25 notes
 - $n(n-1)$ – paired for a 5-minute discussion, 20 places to sit together quietly
- We create trails, ponds, retaining walls, and tree plantations, among other features. We attempt to allow staff and others to exercise ways to personalize these most-permanent accomplishments
- We intend to exploit GIS-GPS unification further, creating “training” images with GPS-specific observations made by The Land Force and guests, using roads and trails as “learning lanes” —observations at GPS sites “not-seen” area images, “faunal-probable space,” and dynamic “mulch-depth” maps.
- “Greening interest” is reported to be slowing; hunting interest continues to decrease; fur-wearing decreases. Rural System, along with urbanization interests, can likely *gain* in diverse outdoor recreation action, rural and nature education, remembrance materials, and visits and experiences, e.g., apple processes, and diverse rural-related sciences.
- We depend on the past and its significant accomplishments in agriculture and forestry, not negating it, only fitting in units of excellence into large, “whole” systems.
- We appreciate concepts of chaos, think we understand chaos well from agroforestry and agro-ecology experiences, and expect “wins” as we continue exploring its utility.
- Economic analyses of rural lands are all-inclusive, but not crops-, forestry-, or wildlife-specific. Reasonable managers include all of their land units when buying and selling land, paying for insurance, and filing tax forms. Keeping things separate, for example, doing economic analyses of forests, as if they were not part of the total potential annual economic picture of the private landownership and adjacent properties, is patently wrong.
- We know from computer use that highly-valued products can result from abundant, low-cost or value items. We work against the rural tradition that “common” is of low value.

We move to “common” for everyone (large numbers), for all want to be “in” and “with it,” and similarly related (as in clothing, caps, insignia, or in similar action such as petting an animal and hiking with a noted group); the more the better—the more common, the more valuable... a grand reversal over many decades. We may open our “secrets” and programs to all for widespread use, because it increases brand awareness and allows *interaction with diverse parts of rural areas*, acquiring value of these areas, named contents, relations *and* the other systems. Kelley called this the “plentitude strategy”—that of creating things that have as many systems and standards flowing through them as possible. “The more networks a thing touches (linear) the more valuable (exponential) it becomes” (Kelley 42).³

- Rational investment is seen in planting a likely-valuable and likely-to-become an old forest tree (i.e., at the age of an elderly person... the expected age of 100 plus half-expectancy of a grandchild (50) is “recent historical,” not ancient). The rational investment in the tree requires investment in the tree-space of “real-estate,” for each tree and often for adjacent trees for full-expected-survival-and-growth. The conditions, the design limits, generally include for us increasing employment, increasing rural community stability, increasing insurance, reducing tax drains, increasing land value, adding tree-related faunal and soil-related enterprises, and creating a profitable system for managing human environments for diverse high-quality lives, and participating effectively in globalization. Research results and computer power make such theorizing possible, of low risk, practical, and now-essential.
- Clearly aware of costs and limits, we operate based on the highly general idea that the more opportunities are taken (diversification), the more newer opportunities (products, services, benefits, and innovations) are likely to arise.
- Replication greatly *decreases* costs of entities after the first! This is a principle and hope for Rural System itself, expanding exponentially as it becomes known, copied, or enhanced. We see it in others, encourage it and reward it *within* staff of Rural System. Rural System’s value will be expressed in the scale and spread of its applications and effects on people now and in the near future.
- We explore ways to take information to the rural outdoors and to return information for combinations in programs and decisions for action (finger-size data-storage) and drone images in the field.
- We see ourselves in an inventors’ mode, resources brought to use and profit made before being devalued by price/supply phenomena.
- We encourage employees to present concepts and inventions for new products toward building services and auxiliary companies. They likely respond well to whole-system successes.
- We allocate spare plots on ownerships for select employees to experiment with their own new ideas, practices, amendments, and structures.

³ Kelley K. 1998. *New rules for the new economy: ten radical strategies for a connected world*. New York (NY): Penguin Books.

- We are aware that we are creating an alternative, perhaps new business model, harvesting from the vast agricultural knowledge of the past for super-fast use in software to provide sustaining money for Rural System, for benefitting rural area workers and residents, and providing a working model of food supplies that can be produced for people by 2050 AD. We may benefit by subscriptions, or paid memberships of “the curious.”
- Given predictions of massive web use for the future, we begin preparing for the diverse and multilingual needs of the people of the 21st century.
- We work toward awareness and expertise in gaining competence within the animated network, one vastly interconnected with *changes* in value, location, roles, health, and other phenomena—reported and actionable for many in the public. Prices change with weather and currency, and investments are changing with corporate risk-taking, crop values are changing with the passage of import-export regulations—all information flowing in networks, and some within forest, farm, and agroforestry networks, and their logic becomes inputs in select computer programs at nodes, as in VNodal.
- The network, dominant, shares space with Rural System’s VNodal, and with PowerPlace, where manual workers are augmented by safe tools and efficient, often high-tech equipment advised by timely VNodal units. Networks are dominant, and continue to challenge Rural System developers as they “try to computerize everything for cost-effective results” and to gain others in supportive local organizations.
- We recognize, fear, and avoid sub-optimization, but acknowledge it can occur. We are gaining tactics for “creative destruction” and re-engineering, to move from the sub-optimum conditions that may arise or wound us and cause us to “start again.” Not to do so prevents us from seeing new options, even avoiding a crash. The more successful the enterprise, the more difficult the demise and restructure/restart.
- We define “liberal” as “abundant and diverse,” and even study “shake liberally” throughout our involvement with ideas, people, poets, historians, philosophers—as we expand our personal lives, we discover emerging, important ideas and concepts for ourselves and for the Rural System enterprise.
- We have to be canny about access to money and the speed of money transmission among accounts—accurately and safely. Relations to workers, salaries, and local residents need to be expressed in analyses and reports of such successes in Rural System.
- Aware of many organizations in rural areas, we tend to work toward their interests, relate them to our Groups, attempting to form alliances, sub-units, or important aids.
- Rural System, with networks, can be said to be in a constant state of turmoil and flux.
- Large-scale systems are grown, not installed (Kelley 116).⁴

⁴ Ibid.

About the Author

While many Americans are presently astonished at conditions in rural America, Robert Giles, Jr., Ph.D., has been working tirelessly for decades on planning solutions to interconnected rural problems. Dr. Giles is a Professor Emeritus of Wildlife Management at Virginia Tech where he taught for 30 years. His Bachelor of Science degree in Biology and Master of Science degree in Wildlife Management are from Virginia Tech. His Ph.D. in Zoology is from The Ohio State University.

Dr. Giles was born on May 25, 1933 in Lynchburg, Virginia. He attended E.C. Glass High School, during which he was awarded a Bausch and Lomb Science award for studies of the ring-necked pheasant. As an Eagle Scout, he was awarded the W.T. Hornaday National Award for Distinguished Service to Conservation and the James E. West Scouting Conservation Scholarship. During his undergraduate years at Virginia Tech, Dr. Giles was an editor for several magazines and the president of the V.P.I. Corps of Cadets of 6,000 students. He was also a member of seven national honorary societies.

During his time as a Professor in the Department of Fisheries and Wildlife at Virginia Tech, Dr. Giles was known for his innovative applications of computer programming and Geographic Information Systems (GIS) to land management questions well before such skills became standard practice within the field (and before GIS was a term). With the support of the Tennessee Valley Authority (TVA), he created the woodland resource management system of TVA, once used on 300 farms a year. With staff and students, he created the first wildlife information base (BOVA – Biota of Virginia database). As chairman of a local planning commission, consultant to the National Wildlife Refuge System, aid to the State Cooperation Commission, consultant for Wintergreen and several realtors, and as a landowner himself, he has developed a unique and alternative perspective on land and its management. He wrote the first plan for wildlife other-than-game for Virginia.

Dr. Giles began working on the Rural System concept in the early 1980s, but did not begin in earnest until his retirement in 1998. When asked about his aims for designing Rural System, he said, “I am now convinced that a superior demonstration of modern comprehensive natural resource management is badly needed and is now possible and most likely within the context of a new corporate rural structure. I do not want to do research. I do want demonstrations of the results of literally millions of dollars of unused research findings. I propose to bring all the power of the computer that I can to realistic and relevant use for parts of the region. This will include using that power already achieved by investments of resource agencies. I propose a system, subject to the law and to reasonable issues of cost, propriety, and community acceptance, that achieves such objectives.”

A colleague of his once said that Dr. Giles can come up with more ideas in an hour than most people can in a lifetime. His creativity is exceeded only by his humanity. Raised in Southwest Virginia, Dr. Giles knows the struggles of people in Central Appalachia, impoverished after the collapse of coal and tobacco industries. He has visited rural areas of Africa (Nigeria, Senegal, Uganda), China and India, and is well-educated in the sufferings of people in poverty worldwide.

Dr. Giles is a systems thinker. He believes that the problems faced by environmentalists and those of interest to humanitarians are interconnected, and that a system of problems must be met with a system of solutions. His career, his values, and his innovative capabilities make him

uniquely suited to tell the story of how a for-profit systems approach can best solve the rural problems of a progressive, capitalist society.

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