A Vote for a Uniform System on Range and Woodland Inventory

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"What's in a name, that which we call a rose by any other name will smell just as sweet." This is true of many of the names being tossed about in the present discussions concerning range inventories. What do you prefer—range site, habitat type, woodland site, ecological site, ecosystem, vegetative climax, climatic climax, edaphic climax, physiographic climax, ecological climax, or a number of other words?

The discussions on vegetation classification or range/woodland inventories that have appeared recently in *Rangelands* and the *Journal of Range Management* have in my opinion been primarily a play on words and individual personal opinions. Different government agencies and, in fact, individuals with similar field experience and backgrounds have their own 'sacred cows,' and it is natural for each to defend that for which they have the most experience and knowledge. My vote is to pool our resources and get together in a united effort on one standard range/woodland/ecological inventory.

Needs for Resource Inventories

Inventories are made by different agencies for similar purposes. The USDA Soil Conservation Service makes inventories on private lands to assist farmers and ranchers to develop conservation plans which when applied on rangeland and woodland will maintain and improve forage production, wood products production, and improve or maintain range/woodland condition. The USDI Bureau of Land Management makes inventories on lands they administer to aid them in developing environmental assessments, soil-vegetation evaluations, and as basic information to develop allotment grazing plans. The USDI Bureau of Indian Affairs makes rangeland inventories to give them information on rangeland/woodland productivity and to aid them in developing Indian grazing allotment plans. These three agencies have all found that range site, including ecological vegetative climax and details of soils, climate, physiographic and other related resources, has given them an adequate basis for their needed inventories. The USDA Forest Service range allotment analysis procedure apparently uses habitat type descriptions as one of its inventories.

It has been a natural tendency of SCS, BLM, and BIA to expand the range site descriptions to woodland and range-woodland areas. It has also probably been the tendency of the FS to expand the habitat type concept from use on woodland areas to rangelands. Naturally, each agency and individual working for these agencies will try to defend the inventory system he has had experience with, with little effort to study or understand other methods.

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Before I retired as state range conservationist of the SCS in Utah, with added responsibilities for woodland, we developed woodland and range-woodland site descriptions. This differed from our range site descriptions only by having woodland site index information and potential woodland production figures in board feet, cords, poles, posts or other applicable woodland inventory data. Of course the woodland species were included with the understory species as part of the total vegetation. We found these adequate for our needs and they gave us the information we needed to assist ranchers to establish woodland practices as well as rangeland practices.

A Uniform System

The monoclimax, polyclimax or polyclimatic climax theories (1) are not what we want since they are based on climax vegetation that occurs only on a well-developed or mature soils. These terms are not universally applicable due to soil disturbances that occurred, like excessive erosion or lowered water tables; and since some soils have not yet received geomorphological equilibrium, it is not possible to use these systems. It will be some time into the future before these soils will reach maturity.

The term *climax* as used in the range site description is a composite of climax vegetation, climate, soils, topography, slope, and potential production figure for all items of ecosystem for all uses. To aid in developing these descriptions the potential or original vegetation is referenced. The primary objective of this inventory system is to provide information as to the potential kind and amount of forage production as well as production units of wood products and suitability for recreation, wildlife, or other uses. It also gives the technician a range condition guide from which he can determine range condition. This then gives a basis from which the land manager can plan and apply total resource management.

Since we are including information for all land uses in our descriptions, I recommend as did Anderson(2) that we use the term *Ecological Site,* but either Anderson's or the SRM definition is adequate, probably the latter since more people have agreed to it.

Evidence for a Uniform System

From many different peoples' interpretations and with the inclusion in the descriptions of potential production and condition guides, I am proposing that habitat type is essentially the same as range site or ecological site. For example Dyksterhuis quotes Avery (3): "Range Sites are approximately equivalent to habitat-types of Daubenmire's (1968)." Dyksterhuis also quotes from Daubenmire's 1968 text(3): "All parts of the landscape that support, or are capable of supporting, what seems desirable to consider as the same type of relatively stable phytocenosis (homeogeneous as to

dominants in all layers) in the absence of disturbance, comprise one habitat type."

Hoffman(4) quotes Nichols, "If a habitat is of a type which supports, or will come to support, a particular climax community that habitat represents a particular habitat type." Hoffman states(4): "Habitat types then, denote not only the land unit but also imply ecosystems of particular characteristics and theoretically can be studied and managed as whole systems. For convenience climax vegetation (plant association) is used in identifying habitat types. Other information from each habitat, including soil profile description, edaphic characteristics, slope, exposure, elevation, possible pests, etc., add to the completeness of the description."

All of the above are included in range site descriptions. In addition the range site description has production figures and a condition guide. By use of this guide the technician can determine present range conditions as a measure of departure from the potential or climax.

I propose that range site concept is essentially the same as the habitat type concept. With very minor modifications they could be exactly the same. The name used for them should be that of the permanent features rather than vegetative names. We have found that plant species names in the site name are confusing to ranchers and other land managers. Some climax species on some sites are still present in poor condition, while on some sites in fair or poor condition the climax dominants have completely vanished. It is confusing to call the site for a plant that no longer exists.

My vote is for a uniform ecological range, woodland, or whatever use inventory system. My vote is for ecological sites as the designation for the units of this system.

(1) **Meeker and Merkel,** "Climax Theories and a Recommendation for Vegetation Classification—a Viewpoint," Journal of Range Management, Vol. 37, No. 5, Sept. 1984, pages 427-430.
(2) **E. William Anderson,** "Ecological Site/Range Site/Habitat Type—a Viewpoint," Rangelands, Vol. 5, No. 4, Aug., 1983, pages 187-188.
(3) **E.J. Dyksterhuis,** "Habitat—Type: A review," Rangelands, Vol. 5, No. 6, Dec. 1983, pages 270-271.
(4) **George R. Hoffman,** "Habitat Types: A Supportive View," Rangelands, Vol. 6, No. 6, Dec., 1984, pages 264-266.

Viewpoint: Response to the Range Inventory Standardization Committee (RISC)

Robert L. Ross

Following is a response to the Guidelines and Terms for Range Inventory and Monitoring submitted as a report of the Range Inventory Standardization Committee (RISC) to SRM in February 1983.

The suggested RISC method of range inventory is cumbersome and confusing. It is also ecologically unsound based on reasons stated in the body of this letter. It is certainly not a satisfactory replacement for the Range Site and Condition method of rangeland inventory developed by Dyksterhuis and successfully used in the field for the past 35 years.

Ranchers are the end result of range management and if we expect ranchers and field technicians to accept an inventory method it must be ecologically sound, practical and easy to understand and apply. While the Range Site and Condition method was specifically designed for these reasons, the RISC method contains none of these attributes. Therefore, it is urgent that the Society for Range Management take immediate action to stop the potentially damaging impact that the RISC report poses to range management.

I am concerned that the RISC report shows a total disregard for ecological principles and climax vegetation as a basis for determining range condition. Climax vegetation for a particular soil in a given climate (range site) is the most tangible or stable factor known for determining health of the range or ecological status. The Committee should have read Dyksterhuis, "Condition and Management of Rangeland Based on Quantitative Ecology, JRM. 2:104-115. 1949. Adoption of "Potential Natural Communities" (PNC) instead of "Climax Composition" weakens the stability or accuracy of determining range condition.

It is my understanding that RISC recommends range health or condition to be a deviation from PNC rather than ecological climax because ". . . it recognizes past influences by man, including past use and introduced exotic species of animals or plants" *as stated in the RISC report.* In other words, plants such as Kentucky bluegrass, timothy, smooth brome, crested wheatgrass, sweet clover, cheatgrass brome, leafy spurge, spotted knapweed, etc., etc., could be referred to as naturalized exotics and be a part of the "Potential Natural Community." I strongly disagree with this concept. It is like saying a person with herpes II is healthy because the disease has been introduced in our society and is here to stay. It is like saying number 3 grade lumber is the best simply because the lumber yard quit stocking number 1 and 2 grade. I would expect this theory to develop from a group of agronomists but not range ecologists.

The climax concept should not be bastardized to include adapted exotic species. Instead of spending time and effort to alter the climax concept to include adapted exotic species, it would be far more ecologically correct to maintain the climax concept for native rangeland and develop separate stocking rate guides for those lands severely infested with exotic species. A rangeland infested with timothy or smooth brome should be classified in poor or fair condition ecologiclly or perhaps be called "tame pasture." In either category, the suggested stocking rate should be based on ecological guidelines tempered by the range examiner's judgement and experience.

I am pleased that RISC recognizes ecological sites as the